Best Practices in Planning for SAP S/4HANA — 2017 Update

Published: 20 March 2017    ID: G00323511

Analyst(s): Nigel Rayner, Derek Prior

Gartner has been tracking the evolution and adoption of SAP S/4HANA since its February 2015 launch. Application leaders looking to transform their ERP environments should use Gartner's updated best practices to decide if, when and how they might adopt S/4HANA.

Key Challenges

- SAP is pushing organizations to move to S/4HANA, but many application leaders are struggling to identify the business value it delivers and build a compelling business case for adoption.
- Many organizations mistakenly assume that S/4HANA is a straight replacement for SAP ERP 6.0 and that all they have to do is "upgrade to S/4HANA." Although there are significant common functional capabilities between the two products, moving to S/4HANA involves changes to functionality and business processes that can be significant.
- Changes in SAP's delivery and naming strategy have made it difficult for organizations to understand the different options they have for deploying S/4HANA along with the relative maturity of these deployment options.
- Although SAP has made significant progress with S/4HANA, the rapid pace of change, the complexity of the roadmap, and the range of deployment options available mean that it is still early in its adoption life cycle.

Recommendations

Application leaders responsible for transforming ERP to postmodern ERP:

- Analyze the evolution of S/4HANA since its launch, study its development life cycle, and evaluate the deployment options currently available.
- Identify functional differences between S/4HANA and your current SAP ERP deployment, and ensure the transition to S/4HANA is not viewed as a technical migration; otherwise, you risk missing out on potential benefits and may underestimate the total project effort required.
- Perform a high-level benefit analysis to decide if S/4HANA has a role in your ERP strategy, and what your adoption profile will be, including which deployment option is most appropriate.
- Identify the most appropriate path to S/4HANA and monitor its adoption.
- Establish the key project considerations and tools needed to support the transition to S/4HANA, and implement risk mitigation strategies if you cannot find appropriate S/4HANA references.

Table of Contents

Strategic Planning Assumption.................................................................2
Introduction..................................................................................................3
   How to Use This Research.................................................................3
Analysis........................................................................................................4
   Analyze the Evolution of SAP S/4HANA and Its Different Deployment Options................5
   Identify Functional Differences Between S/4HANA and Your Current SAP ERP Deployment........9
   Perform a High-Level Benefit Analysis to Understand the Potential Impact of S/4HANA...............11
   Define Your S/4HANA Adoption Strategy........................................15
Gartner Client Case Studies......................................................................18
   Identify the Most Appropriate Path to S/4HANA and Monitor Its Adoption.........................20
   Establish the Key Project Considerations and Tools That Support the Transition to S/4HANA.....24
   Prospective SAP Users Should Evaluate S/4HANA as the Preferred SAP Solution...............26
Gartner Recommended Reading.............................................................27

List of Tables

Table 1. Gartner S/4HANA Benefits Assessment Framework..........................14

List of Figures

Figure 1. The Evolution of SAP S/4HANA....................................................7
Figure 2. Practical ECC 6 System Size Limits for Standard S/4HANA Conversions............26

Strategic Planning Assumption

By 2020, at least 35% of SAP ERP clients will be running SAP S/4HANA.
**Introduction**

S/4HANA is SAP’s most-significant product development since the release of SAP R/3 in 1992. It is a major rearchitecting of SAP’s core ERP functionality to exploit the in-memory computing (IMC) capabilities of the SAP Hana in-memory database management system (IMDBMS) while at the same time leveraging SAP’s Fiori user interface, adding new functional capabilities and removing some redundant functionality. S/4HANA has a hybrid transactional/analytical processing (HTAP) architecture, which means it can perform analytics on "live" transaction data in real time without the need for a separate data mart or data warehouse.

SAP positions S/4HANA as a new-generation ERP solution that is a "digital core," meaning it can be a key enabler of digital business transformation. This is in line with Gartner’s view that many organizations need to transition their ERP capabilities to better support innovation and agility in the era of digital business (see "How to Renovate Your ERP to Provide a Digital-Ready Core"). The IMC and HTAP architecture of S/4HANA is certainly better-positioned to support the demands of digital business than traditional ERP architectures (see "How to Enable Digital Business Innovation via Hybrid Transaction/Analytical Processing").

S/4HANA is key to SAP's continued success as a leading enterprise application software provider. SAP R/3 and its successors, SAP ERP 5.0 and 6.0, have been the most widely deployed ERP software in the last 20 years, supporting many large-scale and mission-critical deployments. SAP needs S/4HANA to become a similar enterprise foundation for the next 20 years to ensure its continued success in an ERP market that has moved into the era of postmodern ERP. Every existing and prospective SAP user will be impacted by SAP S/4HANA and needs to decide if, when and how they will deploy it.

**How to Use This Research**

This research updates and replaces our previous research notes from 2015 on this subject (see "SAP S/4HANA: Six Best Practices for Planning Your Transition" and "Users Face Key Decisions as SAP Clarifies the Way Forward for S/4HANA"). It is based on several vendor briefings with SAP, reference calls with live S/4HANA users and over 500 inquiries conducted by Gartner with end-user organizations and ecosystem partners during 2016 and early 2017 (when our initial research was published).

This is a comprehensive document that summarizes Gartner’s overall advice regarding S/4HANA. We would not recommend that it is read from start to finish in a single sitting.

We advise using it in a modular fashion as follows:

**Existing SAP ERP users that have limited S/4HANA knowledge:** Focus on these best practices first:

- "Analyze the Evolution of SAP S/4HANA and the Different Deployment Options."
- "Identify Functional Differences Between S/4HANA and Your Current SAP ERP Deployment."
Read the SAP material referenced in these best practices, and once you are familiar with this, review the remaining best practices to help you identify the right strategy for S/4HANA.

Existing SAP ERP users that have reasonable knowledge of S/4HANA: Focus on these best practices first:

- "Perform a High-Level Benefit Analysis to Understand the Potential Impact of S/4HANA."
- "Identify the Most Appropriate Path to S/4HANA and Monitor its Adoption."

Use the first part of the document as reference material. Once you have read these best practices, move on to:

- "Establish the Key Project Considerations and Tools That Support the Transition to S/4HANA" if you decide to start planning an S/4HANA migration.

Existing SAP ERP users that have decided to adopt S/4HANA and are planning a migration project: Focus on:

- "Establish the Key Project Considerations and Tools That Support the Transition to S/4HANA" and use the remainder of the document as reference material.

Potential new users of SAP considering S/4HANA: Read:

- "Analyze the Evolution of SAP S/4HANA and the Different Deployment Options" to familiarize yourself with S/4HANA, and then read these best practices first:
- "Prospective SAP Users Should Evaluate S/4HANA as the Preferred SAP Solution."

Analysis

SAP S/4HANA is a new-generation ERP solution that is optimized for SAP’s Hana IMDBMS. It is not a completely new solution because its starting point was SAP Business Suite powered by SAP Hana (commonly known as "Business Suite on Hana" or "BSoH"). BSoH was initially released in early 2013 (see "SAP’s Business Suite on Hana Will Significantly Impact SAP Users") and gave users the choice of running all SAP Business Suite functionality (including ERP) on the Hana IMDBMS. SAP still supported and developed its Business Suite applications for third-party databases because it wanted to allow BSoH to be consumed in a "nondisruptive" manner and offer users choice.

BSoH offered some potential advantages over Business Suite on third-party databases, such as improved processing speeds and real-time analytics, but the functionality was generally equivalent across all database versions. This changed in 2014 when SAP introduced the first functional capabilities that were optimized purely for the Hana IMDBMS and therefore only available with BSoH. This was the first release of Simple Finance, which had a simplified data architecture for the financial accounting (FI) and controlling (CO) modules, along with new Fiori applications and some new functional capabilities. Simple Finance could be purchased and installed in a BSoH environment as an add-on.
In February 2015, SAP significantly shifted its strategy when it announced SAP S/4HANA. This was a departure from the multiple-database strategy implemented in its Business Suite applications. SAP created a new code line from BSoH so that it could focus on optimizing the data architecture and functionality for in-memory computing. SAP S/4HANA (or SAP Business Suite 4 SAP Hana to give it its full name) was therefore only available on the Hana IMDBMS and was licensed as a new product, meaning that additional license fees would be payable for existing Business Suite customers that wanted to move to S/4HANA. The additional license fee for S/4HANA is relatively small, and the ERP user fees are unchanged (existing ERP user licenses are carried forward into the S/4HANA license).

SAP S/4HANA is SAP’s long-term strategic solution. The company announced that it would prolong mainstream maintenance of SAP Business Suite on all databases until at least 2025 and, although this may be extended, it is clear that SAP expects all existing users to move to S/4HANA at some point. SAP is still delivering enhancements for ECC 6.0 (as seen in the company’s current roadmaps) but it is Gartner's opinion that most innovation will occur in S/4HANA. Consequently, if your organization views SAP as strategic, you need to plan to adopt S/4HANA by 2025.

All existing SAP Business Suite users need to analyze the impact of S/4HANA on their ERP strategies and SAP investments. Gartner’s advice is to perform this analysis now. Many application leaders are tempted to ignore SAP S/4HANA “until it is mature” because understanding its impact is complex. This is the wrong approach because any additional investments made in current SAP deployments will be impacted by future plans regarding S/4HANA. Application leaders must ensure the business has a clear strategic direction agreed for S/4HANA before making any further investments in its current SAP landscape.

Analyze the Evolution of SAP S/4HANA and Its Different Deployment Options

S/4HANA is a new product line that is a technical and functional evolution from BSoH. The main development principles behind S/4HANA are as follows:

- **Simplification of the database schema:** This has removed physical database tables that are no longer required in an in-memory system. The IMC capabilities of Hana mean that aggregate tables and materialized views (required for efficient processing in a relational architecture) can be removed. The reduction in the number of tables can be significant (for example, 28 were removed as part of the simplification of materials management).

- **Deployment of the SAP Fiori user experience:** This has taken SAP time to deliver, but there are now 7,019 Fiori applications available for the S/4HANA 1610 release, and SAP has applied Fiori design principles to areas that still use the previous user experience technologies (such as WebGUI and Web Dynpro).

- **Delivery of new functional capabilities that are optimized for in-memory computing:** This is where there will be significant functional divergence from Business Suite functionality over time. Examples are SAP Cash Management (a new product for group-level cash management and forecasting) and real-time multidimensional profitability analytics (using a combination of the revised database architecture, new data model attributes and Fiori applications).
The amount of development work required by SAP to fully realize the vision of S/4HANA is significant and, at the time of preparing this research, was still in progress. It is Gartner's opinion that it will take between three and five years to complete the majority of this work. Application leaders must, therefore, understand how S/4HANA has evolved (and will continue to evolve) in order to assess the maturity of the different versions and deployment options.

Figure 1 shows a simplified view of S/4HANA releases since February 2015. Initially, only Simple Finance (a combination of BSoH and the Simple Finance add-on) was available. This implemented the new architecture in the finance modules only (FI and CO). SAP's strategy was to release future simplifications in other functional areas, such as logistics and operations, as "exchange updates." Thus existing customers would have access to future "simplification packages" and would be able to evolve to a full S/4HANA architecture at a pace that suited them. In early 2015, SAP stated that "Simple Logistics" was the next planned exchange update.

In February 2015, SAP also announced that it would release a public cloud version of S/4HANA, which would be delivered as public cloud SaaS and licensed on a subscription basis. This was initially released in June 2016. Three editions were available, Project Services, Marketing and Enterprise, each with a differing functional scope. SAP subsequently announced a Finance edition as part of the 1611 release.
Figure 1. The Evolution of SAP S/4HANA

Launched in June 2014

SAP Business Suite
SAP Hana

Simple Finance Add-On

SAP Business Suite
SAP Hana

Simple Finance
(supported until 2021)

S/4HANA Cloud (public cloud)

SAP Hana

SAP S/4HANA
Finance

S/4HANA (on-premises or private cloud)

1506 1511 1603 1605 1608 1611 1702
Future releases

1511 1610
Future releases

SAP Business Suite (supported until at least 2025)

February 2015

SAP S/4HANA (new product line)

Source: Gartner (March 2017)
Later in 2015, SAP changed the way the on-premises edition of S/4HANA was delivered. Instead of releasing Simple Logistics and other subsequent exchange updates, the entire S/4HANA core was simplified and released as a single rearchitected ERP suite. This was first released in November 2015 (the 1511 release), and was followed in October 2016 by the 1610 release. SAP also changed its naming conventions with the 1610 release, referring to the on-premises edition simply as "S/4HANA." The public cloud editions are all named S/4HANA Cloud.

S/4HANA and S/4HANA Cloud are both developed from the same codeline, but have different functional scopes because the S/4HANA Cloud editions have a full Fiori user experience and require Guided Configurations for deployment. This means the functional scope of S/4HANA Cloud editions will always be narrower than S/4HANA releases.

There are three primary variants of S/4HANA in the market at the time of preparing this research:

- **S/4HANA Finance**: Originally called Simple Finance, this is effectively BSoH with the simplified architecture applied to FI and CO only. It has a separate release cycle from S/4HANA Cloud and S/4HANA. SAP describes this as an "interim architecture" and has announced that S/4HANA Finance 1605 was the last release, after which it would not be further developed. It will be supported until 2021, and it is possible to migrate to S/4HANA from S/4HANA Finance using SAP Maintenance Planner and Software Update Manager. There are no additional licenses required for this migration.

- **S/4HANA Cloud**: Available at the time of preparing this research in three functional scopes, Enterprise Management Cloud, Finance Cloud and Professional Services Cloud. These are configurable SaaS solutions licensed on a subscription basis with no code customization allowed, although they can be extended using SAP Cloud Platform. There are typically quarterly releases of all cloud editions.

- **S/4HANA**: This is the on-premises variant of S/4HANA that contains the full scope of ERP functionality. There has been simplification across all functional areas (not just FI and CO), but in each release there will be further simplification and also new IMC-optimized functional capabilities. So far there have been two releases, S/4HANA Enterprise Management 1511, and S/4HANA 1610, with the next release slated for September 2017 (the 1709 release). Each release has its own life cycle, typically with two or three "feature pack stacks" prior to the next release, followed by "support pack stacks" once the next release is available. Users do not have to move from one release of S/4HANA on-premises to the next (for example, from 1511 to 1610) immediately after a new release is available.

In addition, it is also possible to deploy S/4HANA Finance and S/4HANA in the SAP Hana Enterprise Cloud (also known as HEC), a scalable and secure private managed cloud environment delivered by SAP. Users can opt for either a perpetual license model (where each deployment can be customized) or a subscription-based model (where case customization of the deployment is not permitted). This is different from the S/4HANA Cloud editions because the deployments run on dedicated hardware rather than in a shared public cloud environment. However, for many SAP customers, this is "cloudy enough" because it moves infrastructure and hardware out of their own data centers.
There are also a number of S/4HANA managed cloud service offerings from SAP partners in addition to HEC (see "The Impact of SAP Hana on the SAP Infrastructure Utility Services Marketplace").

**Recommendations:**

- Application leaders must familiarize themselves with the evolution of S/4HANA and the different variants available: S/4HANA Finance, S/4HANA and S/4HANA Cloud. It is important to identify which variant you are being offered as the SAP field sales force often struggles to give clear guidance on what it is proposing, and the differences between the variants.

- Understand the differences between S/4HANA Cloud and S/4HANA deployed on-premises or on HEC (or an equivalent partner offering). SAP frequently demonstrates S/4HANA and will state that it is "deployable in the cloud." While this is not an incorrect statement, the functionality that is deployable in the cloud is different depending on whether you want public cloud SaaS (S/4HANA Cloud) or a cloud managed service (HEC or partner offering), and this will impact your benefit analysis.

- Familiarize yourself with the license options and implications, including topics such as switching from an existing perpetual license to a subscription-based model. For further details, use the "Toolkit: Successful Migration to S/4HANA Foundation Requires Answers to Critical Licensing and Contract Term Questions."

**Identify Functional Differences Between S/4HANA and Your Current SAP ERP Deployment**

S/4HANA is not a straight replacement for current SAP ERP capabilities. Although it is the logical upgrade path, it has different functional capabilities compared to SAP ERP, and application leaders must not assume they can simply upgrade their current SAP ERP landscape to S/4HANA without any impact on users and business processes.

S/4HANA differs functionally from SAP ERP 6.0 in a number of ways:

- **Changes to the database architecture:** These involve more than just the removal of unnecessary tables. In some areas, architectural changes enable new ways of working. For example, in financials, SAP has changed the physical data architecture to unify previously separate accounting ledgers (such as general ledger, controlling, material ledger and asset accounting) into a single physical table (the "Universal Journal" table) that changes the ways SAP financials works, especially in performing profitability analysis. Other functional capabilities, such as inventory valuation and material requirements planning, have also been enhanced in this way. Future releases of S/4HANA will include more enhancements that make use of IMC capabilities.

- **Functional scope changes:** There are five ways in which the functional scope of S/4HANA differs from SAP Business Suite:
1. **Elimination of duplicate functionality where multiple solutions exist:** For example, SAP ERP has two general ledger (GL) architectures: "classic" GL and new General Ledger Accounting (FI-GL [new]). S/4HANA uses only the new General Ledger Accounting architecture, which is implemented automatically as part of the migration to S/4HANA. Also, S/4HANA will use Extended Warehouse Management (EWM) from the SAP SCM solution rather than ECC-WM. This has been embedded in the S/4HANA core in S/4HANA release 1610.

2. **Functionality in ECC for which there is no direct replacement in S/4HANA:** SAP states that "Alternative functionality with application innovation is in many cases already available in an SAP S/4HANA scope, or it is on the roadmap." However, this means that organizations migrating to S/4HANA may find that some existing business processes will no longer work. For example, incident reporting and reporting for chemicals are not available in SAP S/4HANA.

3. **Replacement of some functionality where SAP's cloud line-of-business solutions are now the strategic solution:** For example, human capital management (replaced by SAP SuccessFactors) and some aspects of supplier relationship management (replaced by SAP Ariba).

4. **Incorporation of some add-on and stand-alone solutions in the S/4HANA core:** For example, SAP Discrete Industries and Mill Products (DIMP) is now part of S/4HANA core and SAP has a roadmap to transition SAP Transportation Management into the S/4HANA core starting in 2017.

5. **New functional capabilities:** SAP is releasing a number of new functional capabilities that are designed only to work with S/4HANA and in-memory computing. Examples include Central Finance, SAP Cash Management and SAP BPC Optimized for S/4HANA. Some replace existing capabilities (for example, SAP Cash Management replaces Cash and Liquidity Management in Financial Supply Chain Management), whereas others like Central Finance offer new capabilities that were not previously available in Business Suite. These capabilities may require additional licenses.

Overall, there are some significant changes to the functional scope of S/4HANA compared to SAP Business Suite. However, SAP is easing the transition by allowing some of the current Business Suite capabilities to be run in "compatibility mode" alongside S/4HANA. These are enabled through compatibility packs, which are versions of standard Business Suite software products that are compatible with SAP S/4HANA. This is a fixed set of capabilities that will be supported until 31 December 2025, after which they must not be used.²

Also, some existing ECC functionality can still run alongside S/4HANA. For example, SAP HCM can be run in either a separate instance, or a single instance with SAP S/4HANA. However, SAP has clearly stated that the go-to architecture in the HCM area is SuccessFactors, and it does not plan to provide application simplifications based on the traditional SAP HCM functionalities or Fiori-based user interfaces.

**Recommendations:**
Don't treat any potential move to S/4HANA as a simple technical migration. S/4HANA is much more than a "port" of existing functionality to the Hana IMDBMS platform. It can enable new ways of working and, in some cases, will force organizations to change existing business processes.

Engage business leaders and key functional users in a discussion about the role S/4HANA could play in supporting and enabling strategic business objectives over the next five to 10 years (rather than approaching S/4HANA with a "how do I justify this upgrade?" mindset). This should be conducted as part of an ERP strategy review and update. If you don't have an ERP strategy in place, this would be an ideal time to create one (see "How to Develop a Postmodern ERP Strategy").

Use SAP documentation and resources to identify potential impacts on your current functional landscape.

The best places to start are:

- "Cookbook — What Is SAP S/4HANA?" This provides a good overview of the different variants of S/4HANA and also links to helpful resources for each variant.
- "Simplification List for SAP S/4HANA 1610 Initial Shipment Stack." This gives a good overview of the architectural changes compared to SAP ERP 6.0.

Use the Simplification List to identify any functional capabilities for which there is currently no direct replacement in S/4HANA. Process owners need to pay special attention to these areas as they will likely create bigger migration or reimplementation efforts.

Monitor SAP announcements and blogs to identify further resources that can help with S/4HANA transition planning. SAP has developed an impressive software-based tool to assist in this planning, SAP Transformation Navigator. This will be formally launched at SapphireNow 2017, but is available now to select customers. Organizations with a complex SAP landscape starting their transition planning now should contact SAP to see if they can participate in the Transformation Navigator pilot program (email "SAPTransformationNavigator@SAP.com").

Perform a High-Level Benefit Analysis to Understand the Potential Impact of S/4HANA

All current users of SAP ERP that have not decided on their strategy for S/4HANA should immediately perform a benefit analysis to assess the potential benefits of S/4HANA. It’s important to do this now because application leaders must engage in a discussion with business leaders and senior management about plans for S/4HANA, and the potential business benefits will be key to this discussion. Don’t defer this activity until some point in the future when you think S/4HANA will be "mature." S/4HANA is too strategic to your SAP investments to simply "kick the can down the road."

Gartner has defined six categories of potential benefits that S/4HANA can deliver, based on our own analysis and growing evidence from reference customers:
1. **Performance improvements**: The IMC platform of S/4HANA means existing application processes should run faster and, in some cases, the performance improvements can be dramatic, with long-running process execution reduced from many hours to minutes or even seconds.

2. **Real-time analytics**: The combination of IMC technology and the hybrid transaction/analytical processing (HTAP) architecture of S/4HANA means analytics can be performed in real time on transaction data (instead of extracting data to a separate instance of SAP Business Warehouse or other data warehouse platform). Also, the processing power of the IMC platform means that forecasts and simulations can be run in real time against large volumes of transaction data, something that is not possible with traditional relational architectures. The Hana IMDBMS technology includes predictive analytic algorithms (the Predictive Analytics Library), which are being leveraged by the S/4HANA product developers.

3. **Impact of the simplified architecture and associated Fiori applications**: The architectural changes in S/4HANA both simplify the data schema and, in some areas, change the way existing functionality is used. For example, the new Universal Journal table in financials removes the need for reconciliation between the various ledgers in SAP financials, and should simplify month-end financial close processes. It also enables profitability analysis at lower levels of granularity through new and customizable derivation rules for profitability characteristics. Each release of S/4HANA delivers more architectural changes (for example, 1511 and 1610 have delivered real-time inventory valuation and accelerated material requirements planning).

4. S/4HANA includes Fiori applications that only work with the simplified architecture. These include transaction processing applications, fact sheets (these display KPI tiles and allow further drill-down) and packaged analytic applications. These are mostly role-based and could deliver improvements in how users process transactions and access information. Each release of S/4HANA includes new Fiori applications of all types.

5. **Benefits of new S/4HANA functionality**: SAP has already released several new functional capabilities that are unique to S/4HANA, for example, SAP Cash Management, Central Finance and a version of SAP Business Planning and Consolidation that is optimized for S/4HANA. So far, these new capabilities have been focused on the finance domain, but it is likely that SAP will release new solutions that impact other domains in the future. Any assessment of potential S/4HANA benefits should include the impact of these new capabilities, but they may require additional licenses, so it is important to check licensing requirements with SAP.

6. **Performance improvements** There will be a reduction in database size because of the simplified data architecture. SAP presentations have claimed a tenfold reduction in data footprint but, at the time of preparing this research, there were too few organizations live with the full simplified architecture of S/4HANA to get a consistent view of the likely reduction in footprint. There may also be some simplification of the IT landscape (for example, the need for SAP Business Warehouse may be reduced or even eliminated through the use of real-time analytics).

7. **Potential for enabling new ways of doing business**: The combination of performance improvements, real-time analytics, the simplified architecture, and new functionality being delivered in S/4HANA could enable significant process innovation. For example, running complex "time-bound" processes in minutes or seconds rather than many hours, coupled with
real-time predictive simulation and forecasting capabilities, means S/4HANA could become a real-time business management system rather than a transaction-processing system based on daily, weekly and monthly cycles. However, this may be challenging because business leaders will have to rethink and change established ways of working to realize this potential.

These benefits are summarized in the benefits assessment framework (shown in Table 1), along with associated actions.
<table>
<thead>
<tr>
<th>Impact</th>
<th>Potential Benefits</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>■ Some performance improvements can be significant.</td>
<td>■ Assess the business impact of running these processes more rapidly.</td>
</tr>
<tr>
<td></td>
<td>Real-time analytics</td>
<td>■ Work with business users to identify where real-time analytics — including predictive analytics — could deliver benefits.</td>
</tr>
<tr>
<td></td>
<td>■ Analytics on real-time transaction data without separate SAP Business Warehouse instance.</td>
<td>■ Work with business users to identify where real-time analytics — including predictive analytics — could deliver benefits.</td>
</tr>
<tr>
<td></td>
<td>■ Virtual data model to access data more easily.</td>
<td>■ Identify end users that specialize in reporting and analytics (starting with finance).</td>
</tr>
<tr>
<td></td>
<td>■ Ability to support complex real-time forecasting, simulation and other predictive analytics.</td>
<td>■ Identify end users that specialize in reporting and analytics (starting with finance).</td>
</tr>
<tr>
<td>Simplified architecture and Fiori applications</td>
<td>■ Changes in data architecture enable new functional capabilities.</td>
<td>■ Create teams of IT and functional specialists by domain (finance, logistics or production, for example) to evaluate benefits.</td>
</tr>
<tr>
<td></td>
<td>■ Fiori role-based transactional applications.</td>
<td>■ Allow time for training and review of SAP resources.</td>
</tr>
<tr>
<td></td>
<td>■ Fiori analytic applications.</td>
<td></td>
</tr>
<tr>
<td>New functionality</td>
<td>■ New applications or functionality only available with S/4HANA that may offer business benefits.</td>
<td>■ Evaluate the role of new applications in your ERP strategy.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Understand licensing implications.</td>
</tr>
<tr>
<td>IT benefits</td>
<td>■ Reduction in database size due to simplified architecture.</td>
<td>■ Monitor size of database reductions being achieved by early adopters.</td>
</tr>
<tr>
<td></td>
<td>■ Simplification of IT architecture (if real-time analytics used).</td>
<td>■ Assess how the role of SAP Business Warehouse changes with S/4HANA.</td>
</tr>
<tr>
<td>Potential business transformation</td>
<td>■ The combination of IMC processing power, HTAP architecture, real-time analytics and new capabilities in S/4HANA could be transformational.</td>
<td>■ Work with senior management and line-of-business leaders to identify if S/4HANA supports/enables business transformation initiatives (for example, digital business).</td>
</tr>
<tr>
<td></td>
<td>■ S/4HANA could be used as a real-time business management system.</td>
<td></td>
</tr>
</tbody>
</table>

ERP = enterprise resource planning; HTAP = hybrid transactional/analytical processing; IMC = in-memory computing

Source: Gartner (March 2017)
The benefit analysis does not need to go into great depth at this stage. The goal is to engage key business users to identify the level of "excitement" that S/4HANA creates in terms of potential benefits, and to use that to decide on your adoption category (as outlined in the next section).

Gartner has found that using this benefits framework in client interactions quickly highlights if there are (or are not) significant potential benefits that could provide the foundation for a compelling business case and detailed cost-benefit analysis in the future. CIOs and application leaders should not try to build a business case for S/4HANA adoption without engaging business users early in the process.

**Recommendations:**

- Create domain-focused teams of functional specialists and business analysts to evaluate the impacts of S/4HANA in their domains. This should be a combination of functional specialists that understand the current and future business challenges facing each domain, and analysts that understand your current SAP configuration. The size and scope of the teams will depend on the functional scope of your SAP deployment, but ensure that they do not become unwieldy (two to four people in each domain team would be ideal). Also ensure that you involve representatives from regional or business unit teams if you have multiple instances of SAP.

- Allow time for your domain teams to review materials and online resources to become familiar with S/4HANA concepts. There is a lot of material available from both SAP itself and various forums and online blogs that help build an understanding of the key concepts and functional changes in S/4HANA. Ensure that you allocate specific time for your teams to review these materials as part of their day job. It should not be regarded as a "spare time" activity. This should be a precursor to more formalized S/4HANA training.

- Get the domain teams to create a high-level view of the potential impacts in their domains using the framework in Table 1. Use a simple classification of the potential benefits, for example; "major benefits," "some tactical benefits" and "limited or no benefits." Ask the teams to explain their classifications in a few bullet points. For example, the finance team at one Gartner client felt the simplified architecture and Fiori applications in S/4HANA would deliver major benefits because this allowed it to implement the new GL architecture (without going through a time-consuming transition to the existing ECC deployment), to eliminate month-end FI-CO reconciliation issues, and enable a more-flexible, real-time view of profitability. Conversely, the finance team in another client saw limited or no benefits in moving to S/4HANA because it had already activated the new GL architecture, did not make extensive use of CO (and thus had no month-end reconciliation issues) and performed profitability analysis in a stand-alone, strategic CPM solution outside the SAP environment.

**Define Your S/4HANA Adoption Strategy**

The goal of the high-level benefit analysis is not to build a detailed business case. That comes later. At this stage, application leaders need to decide which of three S/4HANA adoption categories you fall into:
- **Strategic adopter**: Moving to S/4HANA could deliver significant business benefits in the short term (that is, within two to three years or sooner) and could support or enable strategic business initiatives (for example, digital business transformation). Also, if you have an older deployment of SAP ERP that is no longer a good fit to business requirements, a greenfield reimplementatation of S/4HANA could deliver significant short-term business benefits. Consequently, plans should be made to move to S/4HANA as soon as practical, even if that involves additional risks in being an early adopter of a particular release or deployment model.

- **Tactical adopter**: You see potential benefits from S/4HANA, but these are not significant for your organization in the short term. In addition, you may have an SAP landscape that adds complexity to the migration (for example, multiple instances on different release levels). However, you are committed to SAP as a strategic long-term business solution provider and see value in SAP's vision for real-time business applications — so unless your business strategy changes, it is a question of "when" rather than "if" you move to SAP S/4HANA.

- **No plans to adopt**: You are unconvinced about the potential benefits of SAP S/4HANA and view this as a technology shift forced upon you by SAP. You use SAP mainly as a system of record and may have a strategic commitment to your third-party DBMS vendor. You cannot identify any business reasons for adopting S/4HANA at the present time that outweigh the potential costs of the transition. Consequently, you plan to "sweat" your current SAP investments as long as practical. You may consider replacing SAP applications or moving to third-party support for your current platform rather than moving to S/4HANA.

Use the high-level benefits analysis described above to build a "heat map" using a simple traffic light approach based on the potential benefits (for example, major benefits would be green, tactical benefits yellow and limited/no benefits red). If the benefit analysis "heat map" shows mainly major potential benefits, then you are most likely a strategic adopter and you should proceed to a more-detailed cost-benefit analysis that quantifies the benefits and identifies the associated costs of a move to S/4HANA.

Organizations that undertake a detailed cost-benefit analysis should involve specialists from the SAP Value Engineering team within the SAP Digital Business Services organization, as well as your SAP system integrator. Gartner has seen several system integrators assist clients with functional and impact assessments in terms of the risks and magnitude of business process change along with the associated costs (see "Service Providers Can Help Drive S/4HANA Adoption Through Helping Clients With Compelling Business Cases").

If you can’t build a compelling business case at this stage, or you don’t see enough benefits to warrant being a strategic adopter, application leaders then need to answer the following questions:

- **How strategic is your SAP ERP deployment?** Is it a key part of your organization’s enterprise architecture that will be difficult to replace, or is it more a back office/administrative system that is viewed more as a "necessary evil" rather than a key enterprise system?

- **Could your organization envisage replacing SAP applications with those from an alternative vendor?**
Would you be comfortable running SAP ERP when it is no longer supported by SAP by moving to third-party maintenance?

Application leaders should discuss these questions with their business leadership teams, because the answers will help decide the approach to S/4HANA, and also guide investments. Organizations that view SAP as strategic, and would never consider replacing it, are clearly tactical adopters. They need to decide when, prior to 2025, they will adopt S/4HANA as they will need to stay on SAP’s strategic platform.

Tactical adopters need to consider two options for the timing of a move to S/4HANA: the last practical date, and an earlier tactical opportunity date. The last practical date is just that — work backward from 2025 to identify when you would need to initiate a project that would complete the migration prior to this date. For example, this might be 2023. Create the expectation with your leadership team that, at the very least, funding will be required in this year to support the migration to S/4HANA. Once the last practical date is identified, discuss with your leadership team if there may be an earlier tactical opportunity to move to S/4HANA. For example, if you are planning an instance consolidation initiative, or a rollout to other business units, that may be a good opportunity to incorporate the move to S/4HANA prior to the last practical date.

This also highlights another important issue that should be raised with the business leadership team. There is no need for a business case if your organization decides to move to S/4HANA in the time frame of the last practical date.

If your organization views SAP as strategic, will not consider replacing it, and wants to stay on the strategic platform supported by SAP, then you have to adopt S/4HANA by 2025, and the last practical date is the date by which you must take action (based on SAP’s current support policy). Application leaders need to highlight this now to the leadership team and document their agreement to prevent the move to S/4HANA at the last practical date being delayed by a spurious demand for a business case. It will be important to do a cost and risk assessment to evaluate different options for the move to S/4HANA (such as hardware, hosting options and system integrator support), but there will be no point in trying to establish any return on investment to provide justification for the move. It has to be completed before 2025.

If your organization does not view SAP ERP as a strategic enterprise system, and would contemplate replacing it, or would be happy to run a system that SAP no longer supports (perhaps leveraging a third-party support organization), you are in the "no plans to adopt" category. Organizations in this category should resist any approaches from SAP sales urging them to consider S/4HANA in the short term. Instead, they should evaluate the market for potential alternative systems and assess when they might be mature enough to replace existing SAP capabilities. This will help decide if and when to plan a replacement, and evaluate moving to third-party support in the interim.

Organizations in the "no plans to adopt" category may have a wait-and-see approach in that they will minimize investments and monitor adoption and maturity of S/4HANA. In this circumstance, review your strategy at least every two years (and on any change in business strategy) to see if this
approach is still appropriate, or if you have moved into either the strategic adopter or tactical adopter categories.

**Recommendations:**

- Use a high-level benefits analysis to identify which adoption category fits your organization (strategic adopter, tactical adopter or no plans to adopt).
- If you are in the tactical adopter category, educate your leadership team about the impact of S/4HANA and identify the last practical date for its adoption.
- Organizations in the no plans to adopt category should review their approach to S/4HANA every two years, or when their business strategy changes, unless they decide to completely replace SAP ERP.
- Organizations considering a move to third-party support — either as an interim move or prior to replacing SAP — need to understand the implications of such a move (see "What to Consider Before Canceling Your ERP Vendor's Maintenance Agreement and Switching to Third-Party Support").
- Application leaders in public-sector organizations should review the more-specific advice in "How Public-Sector CIOs Should Assess SAP S/4HANA."
- Use Gartner resources (including inquiry and Peer Connect) to keep abreast of Gartner’s latest perspectives on S/4HANA.

**Gartner Client Case Studies**

Gartner analysts have conducted over 800 client inquiries about S/4HANA since it was launched. These have included examples of organizations in all of the three adoption categories. Migration to S/4HANA by existing SAP ERP customers is not driven by industry or geography. As the case studies below show, organizations in the same industry can take completely opposite approaches.

The following examples are taken from these interactions to illustrate why organizations fall into each category:

**Strategic Adopters**

The first wave of strategic adopters were organizations that saw significant benefits from performance improvements coupled with the simplified financial architecture that was initially available with Simple Finance and S/4HANA Finance. Delivering improved profitability analytics in real time has been the most commonly cited strategic benefit, as some organizations see this capability as transformational.

Gartner has spoken with two large retail groups that are moving to S/4HANA to allow them to analyze profitability at stock keeping unit (SKU) level in real time, something that is not possible with their current deployments and analytics architecture. Both organizations feel this will help them create significant competitive advantage. One retail organization will link S/4HANA with large...
volumes of non-SAP transaction data to facilitate this, and viewed the IMC capabilities underpinning S/4HANA as the reason they could now consider this approach.

Gartner has also spoken with a large manufacturing organization that moved to Simple Finance to deliver significant improvements in performance of high-volume customer invoicing runs while using the new profitability analytics to report on-profit drivers in real time at a level of granularity that was not possible before. This organization found that the new Fiori applications supported real-time profitability analytics without the need to use other business intelligence tools.

Most strategic benefits realized to date have been in the finance area, but with the release of S/4HANA 1610, Gartner anticipates that organizations will start to realize significant benefits in operational areas. This is because of changes to capabilities like inventory valuation, available to promise and production planning. SAP’s increased focus on the Internet of Things also means that S/4HANA 1610 (and later releases) could play a significant role in the digital business strategy of some organizations.

Tactical Adopters

The majority of Gartner clients fall into this category. A large global manufacturing company with a single global instance of SAP ECC is a good example. SAP is its global finance and operational backbone, and the CIO does not consider it likely it would ever be replaced by another ERP solution. Consequently, this organization analyzed the potential impacts of S/4HANA and, although it could identify some benefits, and liked the elegance of the IMC architecture, these were not good enough reasons to justify a move to S/4HANA. This was because the incumbent SAP ECC environment was performing well, with no time-bound processes. Also, the organization had recently completed a multiyear project to improve and optimize its supply chain processes and had realized significant benefits from this. Its processes had been optimized around a monthly/weekly/daily cycle, and there was no immediate benefit perceived from making these processes work in real time.

"There is little point investing money in a real-time business platform until the business wants to move to real-time processes."

CIO perspective in a tactical adopter organization

Like many tactical adopters, this organization decided it would move to S/4HANA at some point. Many Gartner clients in this category are currently trying to identify a potential tactical adoption date prior to their last practical adoption date that fits with current planned ERP investments.

Gartner has spoken with many clients that are planning (or in the early stages of planning), initiatives such as instance consolidation or rollout of ERP capabilities to other business units. They are
weighing up the pros and cons of moving to S/4HANA at the start of the initiative, at a key milestone during the initiative, or when the initiative has finished. This depends on the level of benefits they can realize by adopting S/4HANA earlier, balanced against the maturity of the release they may consider deploying and the relative risk that entails.

**No Plans to Adopt**

A minority of Gartner clients that are existing SAP ERP users currently have no plans to adopt S/4HANA. Gartner has not comprehensively surveyed its clients to identify this proportion with any certainty, but a January 2017 survey by the Americas' SAP Users' Group (ASUG) showed that 19% of respondents were not currently considering an S/4HANA purchase.³

The 2017 investment survey by the DSAG user group (which has members from over 3,000 SAP users in Germany, Austria and Switzerland) showed that 14.6% of survey respondents planned to stay on SAP ERP 6.0, while 33% had not decided on their approach to S/4HANA.⁴

One example of an organization in this category is a large retail organization that uses SAP ERP for back-office functions like finance and human resources. SAP was not the company’s only ERP system, and this organization did not use SAP for retail functionality. All profitability and revenue analysis was performed outside SAP financials in its non-SAP retail systems. Consequently, this organization saw no benefit in moving to S/4HANA, either now or in the future, and was planning to move its back-office functions to SaaS alternatives. The CIO said SAP may be considered for this if one of the S/4HANA Cloud editions were mature enough.

Another organization is a utility company that also uses SAP mainly for back-office functions, primarily finance. All billing, asset management and other operational processes are performed outside of SAP. The company had evaluated S/4HANA and found the costs outweighed the benefits (which would be minimal, as SAP is a back-office system and performs that role well). This organization had not definitely decided to replace SAP, but was going to stay on ECC 6 for the midterm, and then reassess its strategy in the future. Organizations in this circumstance are considering third-party support options to reduce the operating cost of their current SAP environment (see "Does Third-Party Support Have a Role in Your Postmodern ERP Strategy?").

**Identify the Most Appropriate Path to S/4HANA and Monitor Its Adoption**

Any existing SAP ERP user organization that is in the strategic adopter or tactical adopter category needs to make two key decisions when considering a move to S/4HANA:

1. **Transition approach:** Single-step migration of an existing instance or instances, reimplemention in a greenfield instance, or a phased approach.

2. **Version choice:** S/4HANA Finance; S/4HANA 1511, 1610 or later releases; or one of the S/4HANA Cloud editions.

The transition approach chosen depends on how quickly an organization wants to realize the full benefits of S/4HANA, the effectiveness of the current SAP ERP deployment, and the complexity of the current SAP landscape. Gartner has found that organizations with multiple SAP instances often
favor a phased approach in which the transition is gradual. Organizations where the current SAP ERP deployment doesn’t fit well to current and future business process needs — perhaps because it is an older deployment, or the organization has changed its business strategy — often consider a reimplementation of business processes in a new instance of S/4HANA.

The version choice is also a key decision factor. As described above, both S/4HANA Finance and S/4HANA (1511 and 1610 releases) are options for on-premises or managed cloud service deployment. Also, SAP offers several public cloud editions that give the option to move to a full SaaS deployment.

The version chosen is heavily dependent on the relative maturity of the different S/4HANA offerings. At the time of preparing this research, SAP stated that over 5,400 organizations had licensed S/4HANA, of which over 600 were live. There were around 1,800 active projects. However, SAP does not reveal details of the S/4HANA versions deployed by the live customers, which masks the difference in maturity levels of each version.

Gartner’s opinion of the maturity of each S/4HANA version at the time of preparing this research is as follows:

- **S/4HANA Finance (and Simple Finance):** This has been in the market since 2014 and is the most mature of the versions in terms of ecosystem skills and knowledge. Gartner estimates that between 250 and 350 of the 600 live S/4HANA customers are running Simple Finance or S/4HANA Finance. This includes some large organizations with revenues in excess of $10 billion.

- **S/4HANA on-premises edition 1511 release (November 2015):** This was the first release of the full S/4HANA codeline. This release was lacking in functionality compared to S/4HANA Finance, and did not support all industries and add-ons. Some early adopters also reported issues with software quality. Consequently, it was not appropriate for all existing ECC 6.0 users and, based on a fit-gap analysis, some decided to either move to S/4HANA Finance, or wait for the 1610 release. However, most net-new SAP customers adopted this release, while some existing SAP users chose to set up greenfield deployments based on the available capabilities rather than migrating existing ECC 6.0 instances. The quality of the release now seems to have settled down, and Gartner has spoken to several clients that have successfully implemented this release and are achieving business benefits.

- **S/4HANA 1610 release:** This was positioned by SAP as the "go to" S/4HANA release for existing customers that were planning a move to the full S/4HANA codeline, and was released in October 2016. SAP has stated that this release has functional equivalence with S/4HANA Finance, and includes further simplifications and enhancements across the full ERP suite. Although several Gartner clients are conducting proofs of concept with S/4HANA 1610, and some are planning to go live during 2017, Gartner had not spoken with any live users at the time of preparing this research. However, we expect that S/4HANA 1610 will mature during 2017 as more projects go live.

- **S/4HANA 1709 on-premises and subsequent releases:** SAP delivers annual on-premises releases of S/4HANA, and 1709 is the next planned release (due in 3Q17). Each on-premises release will contain further IMC simplification and optimization, along with more Fiori
applications. The scope of these changes could be quite large; for example, SAP will be embedding the stand-alone transportation management functionality into the S/4HANA core starting with the 1709 release. Consequently, Gartner expects that each S/4HANA on-premises release will have its own maturity cycle, and application leaders will need to decide if they want to be an early adopter of one release, or implement a prior release.

- **S/4HANA Cloud editions:** At the time of preparing this research, these were all very early in their life cycles, with a small number of live users. Gartner has only spoken with one live user, an SAP service provider partner that offers services for S/4HANA Cloud. However, S/4HANA Cloud is a high-profile strategic initiative for SAP during 2017, and it is likely these offerings will gain greater adoption during 2017. SAP delivers quarterly updates to the S/4HANA Cloud editions, which are applied to all users.

The choice of S/4HANA version depends on balancing the potential business benefits of the different options and an organization’s appetite for being an early adopter.

Combining the version options with the different transition approaches gives a range of options, which means the decision is more nuanced than just "going to S/4HANA."

Application leaders need to select the option that is the best fit to their organization’s risk profile while realizing anticipated benefits in an acceptable time frame.

These options could include:

1. Direct system conversion from an existing ECC 6.0 deployment (any Enhancement Pack but Unicode required), with the option of on-premises deployment or in a managed cloud service.
   - Migrate to S/4HANA Finance 1605, with a further migration to S/4HANA prior to 2021. The migration from S/4HANA Finance to S/4HANA will likely involve business process changes, because this move will implement the simplified architecture across the rest of the ERP functionality. At the time of preparing this research, Gartner had not spoken with any organization that had performed this migration.
   - Migrate directly to S/4HANA 1511, 1610 or later release. This is the obvious choice for an organization wanting to migrate as quickly as possible to SAP’s long-term strategic S/4HANA codeline.

2. Create a new deployment (effectively a reimplementionation) with the possibility of initial data load from an existing system:
   - New S/4HANA Finance or S/4HANA 1511, 1610 or later release, deployed on-premises or as part of a managed cloud service.
   - New S/4HANA Cloud deployment (transition entirely to a SaaS deployment). This is an option that may appeal to midsize organizations wanting to reduce internal IT costs, or those running SAP ERP without customization that want to make the move to SaaS.
3. Phased transition:
   - Deploy S/4HANA 1610 in Central Finance mode alongside an existing SAP ECC instance or instances (see Note 1 for a more-detailed description of Central Finance). The Central Finance instance receives all the source finance data from the existing instance (or instances), acts as the primary corporate finance system, and can deliver benefits in the finance area. The Central Finance instance becomes the foundation for a future conversion/landscape transformation to a full S/4HANA deployment. This is potentially lower risk than a "big bang" migration, but will come at a higher cost (and at the time of preparing this research, no organization had fully transitioned to S/4HANA in this way).
   - Perform a technical migration to BSoH followed at a later point by a functional migration to an S/4HANA version. This is a lower-risk option favored by many organizations that want to realize immediate performance benefits from a technical migration to the Hana IMDBMS. This happens while deferring the functional migration to S/4HANA until either the chosen version is more mature, or business users are better-prepared for the associated business process changes. In this circumstance, Gartner recommends that organizations license S/4HANA. We do not recommend that organizations move to BSoH without committing to adopt S/4HANA at some point in the future.

Overall, it is Gartner’s opinion that, at the time of preparing this research, S/4HANA 1610 is the "go to" on-premises release for existing customers. However, application leaders need to either monitor S/4HANA adoption and push SAP to provide reference information to support their decision to adopt that release — or pursue an alternative option.

Recommendations:
   - Do not rely on high-level S/4HANA customer information provided by SAP as a measure of S/4HANA maturity. Get reference information from SAP for whichever version and release of S/4HANA you are considering so that you can assess its maturity.
   - Ask for references that have followed the same transition path that you are planning to adopt.
   - Use SAP resources to identify if there are any restrictions for a specific release in terms of add-ons, industry capabilities, availability of best practices packages or any other functional restrictions. These may be addressed in future feature pack stacks, so monitor all release documentation for these, as well as annual on-premises releases.
   - Don’t be afraid to consider being an early adopter of a particular release or version, especially if you are in the strategic adopter category. SAP needs proof points for all deployment options and releases of S/4HANA, and early adopters will likely gain additional attention from R&D and SAP executives. For example, SAP R&D had dedicated resources available to support early adopters of S/4HANA 1511 and early adopters of all S/4HANA releases have frequently been given named SAP corporate executives to whom they can escalate issues.
   - Early adopters should implement risk-mitigation strategies. Allow more time for testing and training, and plan for a period of parallel running to validate that the changes to system architecture and business processes are producing correct data output.
Consider using SAP system integration partners to support your project, but ensure they have appropriate skills in the version of S/4HANA you plan to adopt, as well as knowledge of your transition approach.

If you implement a previous release of S/4HANA, be sure you understand what is involved in moving to the latest release. Try to speak with references or system integrators that have experience of such a move. If you cannot find any, use SAP release documentation to identify the differences between releases and assess how this will impact your business processes when you upgrade. At the time of preparing this research, Gartner had not spoken with any organizations that had moved from S/4HANA 1511 to 1610, or from S/4HANA Finance to S/4HANA 1610.

Consider using SAP Value Assurance services to provide greater predictability of benefits delivery and better fit to business requirements. This is a chargeable service that is part of SAP’s Premium Engagements program.

Establish the Key Project Considerations and Tools That Support the Transition to S/4HANA

Gartner has identified a number of key considerations for existing SAP Business Suite users planning a transition to S/4HANA based on discussions with early adopters, SAP product management teams, and various SAP partners.

Key considerations include:

- Clean up your production database through careful data deletion and archiving. This will help reduce both new Hana hardware costs and planned system downtime. The SAP Data Volume Management work center within SAP Solution Manager 7.2 can be used to identify the largest data tables in source SAP ERP systems.

- Review all existing custom Advanced Business Application Programming (ABAP) code on your SAP ERP system, and remove any custom code that is no longer being used. Adjust all actively used custom code to be fully Hana compliant. The Custom Code Check Tool (or a third-party equivalent) can be used to provide an overview of how the current solution scope and custom code matches (or does not match) the scope and data structure of S/4HANA Enterprise Management.

- Size the Hana hardware for the new target system (see “Sizing SAP Business Application Systems: Art or Science?”). If the current SAP ERP source production database is greater than 10TB in a single instance, stop and consult SAP, as at the time of preparing this research there were no S/4HANA reference customers with databases larger than 10TB (although there were some BSoH live users with larger databases).

- If the current SAP ERP source production database is greater than 10TB, downtime for system technical conversions (which includes testing and adjustment) may not fit into a weekend. This is a typical requirement for most organizations, so special agreement with business users may be required to accommodate longer system outages. With the 1610 release SAP has reduced the downtime required by the Software Update Manager tool to transition to S/4HANA on-
premises edition (see Figure 3). This improvement is expected to continue further in future releases. Alternatively, SAP’s special near-zero-downtime technique may have to be used in order to reduce this downtime to the absolute minimum. This could require additional shadow system hardware, fast network links and increased consulting costs from SAP.

- S/4HANA includes new Fiori user interfaces and applications. To use these, a Fiori Front-End Server is required. For large deployments, this will mean additional development, test and production systems. If S/4HANA is the only system using Fiori, then the Front-End Server can be integrated with each S/4HANA system client.

- SAP has developed Maintenance Planner, a new cloud-based tool to plan all technical activities for this type of conversion project. This replaces the Maintenance Optimizer in Solution Manager. This checks the system for business functions, industry solutions, and add-ons to ensure there is a valid path for the S/4HANA conversion. If there is no valid path, the conversion is prevented. This is used in conjunction with Software Update Manager and a database migration option (if the conversion includes migration to the Hana IMDBMS) to manage the technical system conversion to S/4HANA. The Software Update Manager tool is familiar to most Basis operations teams, but plan to do at least three to five test conversions.

- Consider using the SAP Activate "innovation adoption framework" when this is available for conversions and transformations to trial, and review new S/4HANA business process functionality. This includes a reference solution of S/4HANA with selected business processes preconfigured with sample data. Activate also includes a testing tool and associated test data management.

- Create S/4HANA training and development plans for business analysts, superusers, functional analysts, developers, SAP Security teams and SAP Basis technical teams (see "Gain the Skills Needed to Migrate From SAP Business Suite to SAP S/4HANA Enterprise Management").
Prospective SAP Users Should Evaluate S/4HANA as the Preferred SAP Solution

Prospective SAP users considering an ERP deployment should always assume that S/4HANA will be the preferred solution, because SAP ECC is clearly no longer strategic for SAP. New adopters have been successful with the S/4HANA Enterprise Management on-premises 1511 release, and the S/4HANA on-premises 1610 release is likely to gain wider adoption among existing SAP users.

New SAP users will need to choose between the following options:

- S/4HANA release deployed on-premises in their own data center.
- S/4HANA release deployed in the HEC private managed cloud (or similar partner-hosted offering).

The choice between S/4HANA and S/4HANA Cloud depends on the functional requirements and cloud strategy of each organization. Gartner is increasingly seeing organizations adopting a "cloud first" strategy, while many service-centric organizations are moving core ERP capabilities like finance to SaaS environments when replacing outdated or legacy applications. These organizations may be attracted to S/4HANA Cloud, but they will have to ensure that the narrower functional scope
of these offerings compared to S/4HANA releases meets their functional needs, and that they are willing to adopt the standardized business processes that such a SaaS deployment enforces.

Organizations that want the full scope of ERP capabilities in S/4HANA, coupled with the ability to customize the solution to meet their unique differentiating needs, are more likely to adopt S/4HANA on-premises. Gartner recommends that such organizations adopt the current on-premises release, although they should always check references and any release restrictions regarding functional capabilities (such as country localizations and industry capabilities). These may make the prior release — or even S/4HANA Finance — preferable in some circumstances. However, if SAP proposes S/4HANA finance, be aware this is only supported until 2021 and a migration to S/4HANA 1610 or later will be required.

Prospective users that do not want to adopt S/4HANA Cloud, but would prefer not to implement the technology to run S/4HANA in their own data centers, can consider a range of cloud-based hosting models, including SAP’s own HEC offering (see “The Impact of SAP Hana on the SAP Infrastructure Utility Services Marketplace”). These will confer some of the benefits of cloud without delivering the full potential benefits of SaaS.

**Recommendations:**

- Evaluate the latest release of S/4HANA (deployed on-premises or in a private managed cloud) or S/4HANA Cloud with solutions from SAP’s competitors. Consider prior releases or S/4HANA Finance only if there are functional gaps in the latest release.
- Evaluate the S/4HANA Cloud editions if you are looking for a SaaS solution, but be aware that these solutions are very early in their life cycles compared to most competitor alternatives. This will likely change over the course of 2017 because S/4HANA Cloud is a strategic initiative for SAP. Also, for organizations with less than 1,500 employees evaluating SaaS ERP capabilities, SAP recommends its Business ByDesign solution rather than S/4HANA Cloud.

**Gartner Recommended Reading**

*Some documents may not be available as part of your current Gartner subscription.*

"The Impact of SAP Hana on the SAP Infrastructure Utility Services Marketplace"

"Service Providers Can Help Drive S/4HANA Adoption Through Helping Clients With Compelling Business Cases"

"Competitive Landscape: SAP S/4HANA Service Providers"

"How Public-Sector CIOs Should Assess SAP S/4HANA"

"Evaluate Proven Software Tools to Measure the Effectiveness of Your SAP Systems and Get Ready for S/4HANA"
"Gain the Skills Needed to Migrate From SAP Business Suite to SAP S/4HANA Enterprise Management"

"Toolkit: Successful Migration to S/4HANA Foundation Requires Answers to Critical Licensing and Contract Term Questions"

Evidence
1 See SAP S/4HANA Cloud for details of these editions.

2 "FAQs on Compatibility Packs for SAP S/4HANA" (PDF).


Gartner Peer Connect.

Note 1 SAP Central Finance

SAP Central Finance is a way of deploying SAP S/4HANA so that it acts as a centralized repository for financial transactions from SAP and non-SAP finance systems. The accounting entities in existing systems are mapped to one common set of master data in the central system. Postings are then replicated in real time — using SAP Landscape Transformation replication server (SLT) — to the Central Finance system. This then acts as a "superledger" across all other systems, enabling the real-time analytics and new functionality in S/4HANA to be used on the combined transaction data. The replicated transaction data can also include cost objects (such as production orders), and these can be mapped at varying levels of granularity.

SAP Central Finance is a way of delivering some of the benefits of S/4HANA without having to migrate the entire system landscape. It will allow organizations to use the real-time analytics and multidimensional financial reporting at transaction level across a complex ERP landscape. Also, some corporate finance processes can be performed in the Central Finance instance, for example, intercompany processing and reconciliation. One organization was evaluating Central Finance as a way of centralizing all of its intercompany activities. SAP will be providing other centralized finance processes, for example, accounts payable payment processing.

The concept of Central Finance is also appealing to larger, more-complex SAP user organizations that have multiple ECC instances, and also other non-SAP ERP systems. However, it does introduce additional complexity and cost because Central Finance requires installation of a dedicated instance of S/4HANA, and replicates transaction data to the new instance. There will also be additional licensing costs. SAP customers can leverage existing ERP licenses for the underlying finance functionalities, but a separate license is required for Central Finance-specific functions and features as well as SLT. Central Finance is not a "lite" finance-system-only installation, or a form of financial consolidation system that works on summarized data. It requires a full deployment of S/4HANA 1610 to provide the Central Finance capabilities, and is only available on-premises.
Central Finance is also being considered by some organizations as a way of moving to S/4HANA in a phased approach, rather than a "big bang" replacement. A Central Finance S/4HANA instance will be deployed alongside an existing SAP ECC instance and the Central Finance S/4HANA instance will be used as the corporate finance system by replicating accounting data from the existing instance. This allows the organization to realize the benefits of S/4HANA in the finance domain in a nondisruptive manner. At some point in the future, system conversion is used to move other business processes to the S/4HANA instance to replace the existing ECC instance. This allows a phased transition rather than a "big bang" migration, although it does mean that, in the short term, costs will increase as two ERP deployments will be run side by side.

Central Finance is an innovative use of IMC to deliver new ways of deploying and using the financial capabilities of S/4HANA. However, at the time of preparing this research, SAP was unable to provide any live references for Gartner to speak with that supported any of the potential use cases described above (although SAP did state that it is live on Central Finance in its own organization). It is Gartner’s opinion that Central Finance should therefore be approached with some caution and appropriate risk mitigation, at least during 2017, as early adopters go live.