SAP Business Planning and Consolidation for SAP S/4HANA

Optimize Planning and Consolidation with the Latest Functionality in SAP S/4HANA®

SAP

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ABOUT THE AUTHORS

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The purpose of this paper is to give you an understanding of how the latest version (1709) of the SAP® Business Planning and Consolidation application for SAP S/4HANA® (SAP BPC for SAP S/4HANA) adds business value. We explain the key benefits and differentiators of the embedded model functionality, including a history of the SAP Business Planning and Consolidation (SAP BPC) application and details on how its functionality has been optimized for SAP S/4HANA. Key use cases are highlighted throughout.

Key Benefits of SAP® BPC for SAP S/4HANA®

The SAP® Business Planning and Consolidation (SAP BPC) application provides the functionality that its name suggests – planning, budgeting, forecasting, and simulation, as well as financial consolidation – in one application. Traditionally, planning applications were separate from financial consolidation applications, causing integration and reconciliation challenges. A distinct business trend toward financial consolidation of planning data along management structures for better global visibility and control drove the justification for a unified system.

Optimizing the application's planning and consolidation functionality for SAP S/4HANA® takes this a step further by implanting the functionality into an enterprise management system that handles and scales both transactions and analytics. SAP HANA® is the enabling platform technology that makes it possible to apply real-time analytics to transactional

details. SAP is a leading provider of this unique combination of technologies. The resulting benefits include:

- A common financial planning and consolidation platform that uses a shared and integrated table for financial postings, known as the "universal journal," all within one system that handles both transactions and analytics (that is, SAP S/4HANA)
- A single version of the truth for legal and management reporting established by merging financial accounting (FI) and controlling (CO) into a singular universal journal and combining that with unified planning and consolidation
- Unrestricted access to the most granular level of transactional and operational data, since financial document summarization is no longer needed on sales and logistics postings passing into the general ledger
- Reduction in data management processes and batch jobs such as master and transactional data loading through real-time processing

The optimized planning and consolidation functionality of SAP BPC for SAP S/4HANA goes **beyond traditional planning and consolidation** by implanting the functionality into an enterprise management system that handles and scales both transactions and analytics.

- Reduction in the data footprint through elimination of data redundancies
- Faster system response times on real-time information accelerating financial processes such as period-end close
- Robust source data validations, calculations, allocations, and simulations for quicker insights
- More options to integrate external data with internal (SAP) data through SAP HANA, which virtually connects and models disparate sources of data
- Business function and predictive analysis libraries for more advanced modeling
- Predelivery of content and data mappings to reduce implementation times

- Modern user experience, predelivered SAP Fiori® apps, and use of Microsoft Excel to facilitate adoption and productivity
- Web-based data visualization and dashboarding options to speed up discovery and communication

From a technology perspective, the benefits of SAP BPC for SAP S/4HANA translate into savings in hardware, software, and labor costs. From a business perspective, the embedded model functionality enables greater efficiency and effectiveness. From an overall organizational perspective, SAP BPC for SAP S/4HANA creates business transformation opportunities that can be attained more easily.

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Key Differentiators of
SAP BPC for SAP S/4HANA

Many of the key benefits that result from SAP BPC functionality having been optimized for SAP S/4HANA are unique and unparalleled. To effectively and completely evaluate how the embedded solution compares to competing products, you should include the following criteria in your analysis:

- Level of effort needed to design and implement process, data, and application integration
- How the solution handles low-level details such as customer, product, or even document numbers for better insights, discovery, root-cause analysis, and auditability, including drill-down analysis
- How the system scales with data volumes, ranging from how quickly data can be made available to how fast calculations run and reports execute, without splitting up the application
- Maintenance and operations efforts associated with job scheduling and automation
- Costs associated with having separate on-premise or in-cloud infrastructure versus a solution that is already within the existing infrastructure
- Use of enterprise standards in tools, processes, and methodologies for managing an implementation
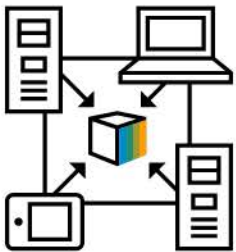
Because SAP BPC functionality is an integral part of the overall SAP S/4HANA suite, other processes in SAP S/4HANA can use it for **deep integration**.

The hidden costs and complexities associated with the lack of integration – be it data, application, or platform – are typically underestimated. Because integration work is hard to estimate, many times the effort is removed or the responsibility shifted. For example, many planning or consolidation implementations will assume that flat files produced in the proper format will be supplied to the project.

Because SAP BPC functionality is an integral part of the overall SAP S/4HANA suite, other processes in SAP S/4HANA can leverage it for deep integration. For example, liquidity planning for cash management and overhead cost planning for management accounting use the embedded model functionality, eliminating the need for interfaces with disconnected solutions.

The enterprise standards in administration, version control, system monitoring, and troubleshooting support that apply across the entire SAP S/4HANA suite help ensure continued productivity of SAP BPC functionality. The same tools, processes, and methodologies from SAP are built in and used consistently by SAP BPC functions and SAP S/4HANA to enable shared services. Many competing products lack the equivalent enterprise-class administration, monitoring, and auditing functionality. For instance, the standard transport mechanism used in the SAP solution environment to move granular application changes through the landscape into a production system is typically unmatched. In lieu of this type of version control, other solutions will typically either introduce changes directly into production or refresh production with a system copy, thereby introducing integrity risks and potential disruptions in operations.

In short, because of its architecture and design, SAP BPC for SAP S/4HANA uniquely supports many aspects of integration and analysis that cannot be emulated by outside solutions. To be comprehensive, any business case should weigh the importance of these factors.
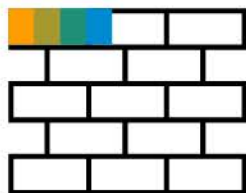
Because of its architecture and design, SAP BPC for SAP S/4HANA **uniquely supports many aspects of integration and analysis** that cannot be emulated by outside solutions.

History of SAP BPC and Context Within SAP BPC for SAP S/4HANA

INTRODUCTION TO SAP BPC

The journey to SAP BPC for SAP S/4HANA and the real-time consolidation functionality has been one of innovation yielding several product, implementation, and deployment options along the way. Marrying planning and consolidation into one simplified product with the ease of use and familiarity of Microsoft Excel created high demand. With its popularity and market expansion came further investment and growth.

SAP originally acquired what is now the SAP Business Planning and Consolidation application from OutlookSoft Corporation. The acquisition announcement was made on May 8, 2007. Shortly thereafter, SAP rebranded the solution to SAP Business Planning and Consolidation (SAP BPC) and, in the next release, copied it onto the SAP NetWeaver® technology platform, creating a totally new product. Consequently, SAP BPC, version for the Microsoft platform, and SAP BPC, version for SAP NetWeaver, became two separate code lines that carried forward into subsequent product versions.

Later, SAP offered SAP HANA as an in-memory database choice for deployments of SAP BPC based on SAP NetWeaver. But as SAP HANA evolved, the technology became more than a database option enabling multidimensional querying, write-back, formula calculations, allocations, and hierarchy disaggregation. SAP HANA has progressed from a database into a development platform where application logic has been pushed down into SAP HANA for performance optimization.

As part of the evolution of SAP HANA, a new deployment option for SAP BPC, known as the "BPC-embedded model," emerged. This resulted in a new model type that inherited the robust integrated planning functionality already built within the SAP Business Warehouse (SAP BW) application. Furthermore, these planning capabilities are now optimized to run on SAP HANA by leveraging what is known as the "planning applications kit" (PAK).

SAP BW was first introduced in 1997 as the data warehouse from SAP; it has grown significantly and matured since then. SAP BW also makes available advanced OLAP and many data integration options enhanced with capabilities from SAP HANA. As of 2017, SAP BW has been redesigned to leverage the capabilities of SAP HANA, becoming the next-generation data warehouse solution – SAP BW/4HANA. Built entirely on the in-memory platform SAP HANA, the solution offers new data-modeling capabilities that enable customers to deal with huge amounts of data while it remains highly performant. It has also been updated to offer a modern user experience.

The traditional modeling option within SAP BPC, version for SAP NetWeaver (tracing back to OutlookSoft), became known as the "BPC-standard model." In contrast, the BPC-embedded model amalgamates the features of SAP BPC with functionality of SAP BW that has been optimized for SAP HANA. Consequently, SAP transactions loaded into SAP BW do not need to be staged and loaded again, as is the case for the BPC-standard model, because the BPC-embedded model works directly within SAP BW instead of on top of it.

This allows BPC-embedded implementers to leverage the full suite of the SAP BW application's functionality and content for SAP HANA rather than rely on what the BPC-standard model permits. For instance, BPC-embedded modeling offers "inverse formulas" for on-the-fly, driver-based planning and break-back (for example, volume times price equals sales calculations) at any level of a hierarchy (for example, geography down to customer or product segment down to stock-keeping unit). Similarly, a library of planning functions is available, such as copy, delete, repost, revaluation, and distribution by reference data. Finally, analysis processes in SAP HANA and the PAK framework enable the incorporation of native features of SAP HANA such as business functions (for example, net present value or depreciation) and predictive analysis functions (for example, k-means clustering or exponential smoothing) contained in its application function library (AFL).

In addition, BPC-embedded modeling enables you to leverage capabilities ported from the BPC-standard model that were not available in SAP BW, such as financial consolidation and underlying business rules that control currency translation and intercompany eliminations. Other borrowed features include "business process flows" that work as guided procedures and "work status" for versioning and locking control.

A BPC-standard model implementation is designed to be simple for the business to own, while a BPC-embedded model is designed to be sophisticated for enabling IT to make customizations and simplifications for advanced requirements. For example, the dimensionality and level of detail provided with the BPC-standard model is typically modeled judiciously and selectively to circumvent complication. In contrast, because the BPC-embedded model is natively integrated with SAP BW, the level of granularity is unrestricted and can be modeled at the transactional level (for example, document line items). Additionally, data federation and virtualization techniques are available through SAP BW and SAP HANA. Consequently, SAP BPC implemented as the BPC-embedded model doesn't have to be directly loaded with data but, instead, can query another external data set in real time.

Lastly, you can also use advanced OLAP tools such as the SAP Analytics Cloud solution, SAP Analysis software for Microsoft Office, and SAP Lumira® software with the BPC-embedded model for both planning and analysis within a spreadsheet and a dashboard, respectively. In fact, the whole SAP BusinessObjects™ portfolio of tools is available for reporting and analysis by way of integration with SAP BW or SAP HANA. Like OutlookSoft, Business Objects S.A. was acquired by SAP in 2007 (just after the OutlookSoft acquisition), opening to SAP customers an array of integrated business intelligence (BI) alternatives that have evolved over time.

BPC-EMBEDDED MODEL VERSUS BPC-STANDARD MODEL USE CASE SCENARIOS

Typical use cases for SAP BPC implemented as the BPC-standard model, irrespective of Microsoft or SAP NetWeaver versions, are basic departmental applications. This includes applications such as annual budgeting and periodic forecasting within a financial planning and analysis (FP&A) group or financial consolidation within the corporate function. For instance, the BPC-standard model supports planning and consolidation autonomy in different regions or organizational groups across the globe whether at the corporate or subsidiary level.

In contrast, while the BPC-embedded model covers the same functional scenarios, it has a stronger use case for enterprise-wide deployments that reach more deeply into operations of other functions, such as sales, logistics, and human resources. The BPC-embedded model more easily achieves integration of planning, analysis, and management processes across business units and functions such as advanced sales and operations planning (S&OP) or even enterprise resource planning (ERP).

The BPC-embedded model covers the same functional scenarios as does the BPC-standard model, but it has a stronger use case for enterprise-wide deployments that **reach more deeply into operations** of other functions, such as sales, logistics, and human resources.

A differentiating advantage that the BPC-embedded model has is associated with comprehensive profitability analysis. The BPC-standard model can handle customer and product dimensionality, but the data interrelationships with profit centers are tricky to model. Transactional information such as sales order details is impractical to incorporate. To get to a sales order, the BPC-standard model allows drill-through to a Web-based document listing which, in turn, can drill through to a document display. In addition to having to leave Microsoft Excel and take an extra step to get to the document display, transactional details such as sales order types (for example, cash, promotion, rush, returns, third-party, and inquiry) are absent from filtering and navigation. This is not the case with the BPC-embedded model. Moreover, the BPC-embedded model supports ad hoc "slicing and dicing," or the pivoting of data across multidimensional hierarchies as well as drilling down to document numbers before drilling through to a document display.

With the introduction of SAP S/4HANA, the BPC-embedded model option was integrated into the suite to leverage the entirety of the model's functionality. As an added benefit, with SAP BPC for SAP S/4HANA, deeply integrated and customizable content is predelivered as part of a predefined core solution that accesses transactional data in real time.

INTRODUCTION TO SAP S/4HANA
Due to its assimilation of many technological innovations, SAP HANA has the ability to simultaneously handle the transactional and analytical load of SAP software processes in a way that's superior to other databases on the market. In-memory technology, columnar storage, massively parallel processing, partitioning, compression algorithms, and "insert-only" database operations all contribute to the radical reduction in read and write contention between OLAP and OLTP applications, respectively.

As a result, not only has SAP BPC been redesigned and rewritten for SAP HANA, but so has SAP Business Suite software – especially the SAP ERP application at the software's core. This new code line has been branded as SAP S/4HANA and has cloud and on-premise versions. Consequently, SAP S/4HANA is a separate product line from SAP Business Suite and is not its legal successor.
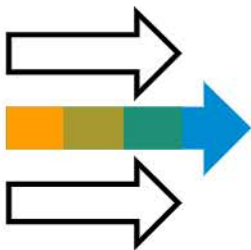
SAP BPC has been redesigned and rewritten for SAP HANA, but so has SAP Business Suite software, especially the SAP ERP application at the software's core, resulting in **a new code line branded as SAP S/4HANA**.

The first version of SAP S/4HANA was focused on financials because of the modification made to simplify the financial and controlling modules (FI and CO). Data redundancies for reporting were eliminated because SAP HANA can reconstruct totals and index tables as compatibility views in real time – directly accessing transactions such as FI and CO documents and line items. FI and CO were also logically merged in SAP Simple Finance 1.0 and then later physically merged into the "universal journal" as part of release 1503 of the SAP S/4HANA Finance solution, on-premise edition. This melding of FI and CO at the most granular level created a true "single source of truth," eliminating the need for a lot of data management processes, resources, and tools.

Then, release 1511 of the on-premise edition of SAP S/4HANA took the simplifications well beyond finance, extending it to many application areas and industries on an unprecedented scale. Beyond the current 1709 release of the on-premise edition, sales and logistics transactions (such as sales orders and purchase orders) will post directly into the universal journal in a separate ledger. This enables predictive, close simulation along with the currently available continuous accounting capabilities in financial consolidation.

Financial Planning Capabilities in SAP S/4HANA

The functionality provided by an implementation of SAP BPC for SAP S/4HANA differs from the functionality provided by a stand-alone implementation of a BPC-embedded model. SAP BPC for SAP S/4HANA functionality includes:

- Real-time access to transactional and master data
- Predelivered planning content, workbooks, and corresponding Web applications with underlying data models, queries, and planning functions that can be copied or adapted
- Specialized allocations and driver-based functionality available only for SAP S/4HANA

As opposed to stand-alone implementations, SAP BPC for SAP S/4HANA can directly reference operational master data such as charts of accounts, organizational hierarchies (such as cost centers and profit centers), business partners (such as customers and vendors), and materials. Master data does not need to be loaded or separately maintained, although it can be. For instance, provisional new products not yet introduced into operations can be added for planning and simulation purposes through customization.

Another difference, as compared to stand-alone instances, is that SAP BPC for SAP S/4HANA supports direct references to transactional tables such as the universal journal (technically named ACDOCA) and the universal planning table (technically named ACDOCP) as opposed to requiring separate cube structures for physical data storage.

The predelivered content covers different aggregations of the universal journal for income statement data, whether it is for cost centers, internal orders, projects, profit centers, or market segments. Balance sheet planning is also included as well as specialized content for cash and liquidity planning.

Liquidity planning is a core part of the SAP S/4HANA Finance solution for cash management. Liquidity forecasting and management is integrated with other parts of SAP S/4HANA Finance for cash management, such as cash operations and bank account management. In addition, sales and production cost planning workbooks are delivered to show how operations can link with financials for driver-based profitability analysis. More specifically, assumptions such as sales quantities, prices, customer deductions, production costs (at the cost-component level for material, labor, and overhead breakdowns), and lot sizes can be planned and simulated by integrating material cost estimates and the product-costing configuration from SAP S/4HANA.

Planning functionality in SAP BPC for SAP S/4HANA includes **real-time access to transactional and master data**; predelivered planning content, workbooks, and Web applications; and specialized allocations and driver-based functionality available only for SAP S/4HANA.

Finally, predelivered workbooks and underlying content support the following types of overhead allocations either in place of or in conjunction with CO allocations:

- Cost simulations optimized for SAP HANA for recursive cost distributions or assessments across an extensive network of allocation factors
- Driver-based activity planning for quantity-based allocation of costs from sender to receiver as activity prices (or rates)
- Fixed consumption planning for the manual allocation of fixed costs from sender to receiver as debits and credits

USE CASES AND BENEFITS FOR PLANNING IN SAP S/4HANA

SAP BPC provides planning functionality that can be performed either inside of SAP S/4HANA or outside of it in a separate data warehouse system. In fact, the latest release of SAP BPC (11.0) is based on the architecture of the SAP BW/4HANA solution and is not available for SAP S/4HANA.

Note that SAP BW/4HANA is not the legal successor of SAP BW and reflects an entirely new code line optimized for SAP HANA. Both BPC-standard and BPC-embedded modeling options are available for both SAP BW and SAP BW/4HANA in addition to SAP S/4HANA.

The use case scenarios for and the benefits of SAP BPC for SAP S/4HANA include the following:

- The use of the preexisting FI and CO planning transactions can be entirely replaced with a more modern and flexible user experience either in Microsoft Excel or a Web browser. Note, however, that established file upload tools or interfaces that can be migrated to SAP S/4HANA may diminish the use case – but only slightly.
- The definition of detail-oriented operational planning processes that dovetail with SAP transactional processes and data provides better variance and root-cause analysis, including sales and logistics-based drivers, by modeling directly on the data available. On the other hand, if the need for FP&A is isolated at the corporate level, there are disparate sources of external data, or much history is required for multiyear trend analysis, then a stronger use case exists for an option based on SAP BW/4HANA. Note that hybrid options exist due to the common SAP HANA architecture and the interoperability of SAP S/4HANA and SAP BW/4HANA.
- Strategic use of SAP BW functionality embedded within SAP S/4HANA goes beyond financial planning, enabling broader reporting and analysis scenarios and, at the same time, simplifying the system landscape by shutting down (or shrinking the footprint of) separate instances of SAP BW. If separate SAP BW systems cannot be disentangled and retired, at least partially, due to the level of investment therein, then the use case for SAP BW/4HANA becomes stronger.

A key benefit associated with planning with SAP BPC for SAP S/4HANA is that use of preexisting FI and CO planning transactions can be entirely replaced with a **more modern and flexible user experience** either in Microsoft Excel or a Web browser.

Financial Consolidation Capabilities in SAP S/4HANA

Both planning and financial consolidation (that is, real-time consolidation) with SAP BPC for SAP S/4HANA share real-time master data, such as charts of accounts and company codes, as well as access to the universal journal. However, the real-time consolidation functionality uses SAP S/4HANA functionality to extend the shared master data with additional attributes. For example, financial consolidation needs accounts to be grouped into pairings for eliminations, and this matching is done through a financial-consolidation-specific master data attribute. In addition, as it relates to master data design, both management and legal consolidation along separate hierarchies can be performed within the same model at the same time. Combined with the universal journal, this so-called "matrix consolidation" functionality enables globally consolidated management reporting that can drill down and reconcile with statutory reporting.

The real-time consolidation functionality has also been modernized with SAP Fiori apps such as:
- A data release cockpit for local accountants to view and release data with audit history
- A consolidation data release monitor for group accountants to oversee statuses and perform mass functions such as period initialization, currency translation, data validation, release, defer, and approval

- Drill-through reports to display a list of journals or drill down to them from the data release cockpit

Note that the financial consolidation functionality does not come with precanned workbooks and models as does the planning content due to important modeling and mapping decisions that need to be made as part of the initial setup. Based on configuration, different objects are generated by SAP HANA for use in the BPC-embedded model. As a result, an implementer needs to appreciate fundamental design considerations before assembling the financial consolidation application. The key blueprinting decisions unique to SAP BPC for SAP S/4HANA, as opposed to a stand-alone deployment of SAP BPC, include deciding how to:
- Map to the universal journal (and universal planning data, if applicable) or import data through a flexible upload
- Define validation rules to enforce source data quality locally before releasing it to the group
- Control when to release the data for consolidation and the locking process in a real-time system
- Handle versioning flexibility for both data and configuration
- Perform currency translation either locally or at the group level
- Write back the consolidated results
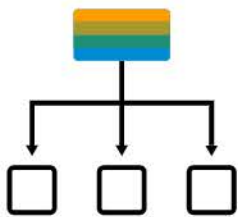
Both planning and financial consolidation with SAP BPC for SAP S/4HANA share real-time master data and access to the universal journal; the **real-time consolidation functionality uses SAP S/4HANA** to extend the shared master data with additional attributes.

Real-time consolidation provides access to the universal journal and universal planning data through customizable SAP HANA views. Predelivered or enhanced views are used to define relevant selections from the universal journal such as a ledger restriction or to perform mappings such as local-to-group transformation of charts of accounts.

The level of detail brought into these views can be granular. For instance, the standard template includes customer and material details. Furthermore, automated eliminations can be performed along company code, segment, profit center, and even cost center dimensions if the reciprocal side of the relationship (that is, a trading partner or a sender) can be identified or derived on each transaction. A strong use case for real-time consolidation is the incorporation of profitability and cost center details into financial consolidation reporting – functionality typically not supported in other solutions.

Non-SAP application data or data in other SAP systems can also be integrated into the universal journal through a deployment option for SAP S/4HANA known as the central finance option. This option enables the real-time replication of financial documents to the universal journal that the foundation view can then pick up. Otherwise, initial data uploads and monthly balances can be imported into the "consolidation journal" table (technically named ACDOCC) through a tool known as "flexible upload."

Real-time consolidation can pick up data changes in real time and reconsolidate the data at any time. Alternatively, the data can be set frozen at a specific point in time by local accountants and monitored for status through SAP Fiori app–based data-release activities during period-end close. Both real-time and data release views are available in tandem as separate, configurable versions of data within financial consolidation processing and reporting. A use case for both is to have a preliminary version for continuous and soft close and a final version for the official and hard close. Alternative sources of data can also be created for separate sets of planning and simulation data, supporting integration of actual and planning data. Similarly, multiple accounting principles and parallel valuations are supported.

Different versions of truth can be designed into the same model by reusing the configuration when needed to avoid maintenance impact. Such flexibility, combined with real-time data access, allows for sophisticated solutions, data volume reduction, ease of reconciliation, and better comparability across as many management and statutory views as needed.

While BPC-embedded modeling has its own currency translation methodology, real-time consolidation modeling introduces an option based on SAP S/4HANA. Both are available, and the implementer must decide which one to use for each model.

The option based on SAP S/4HANA has several enhanced features otherwise not available in BPC-embedded modeling. These features include support for transaction-currency-based translation, greater flexibility in the selection criteria for when rules are applied and where the differences post, rounding functionality, auditable logs for the calculation details, and on-the-fly translation options. From a process and governance perspective, currency translation based on SAP S/4HANA can be executed locally and validated at the group level. In contrast, BPC currency translation is designed to be executed and validated at the group level.

With respect to writing back the results of financial consolidation, a design choice must be made as to whether to use a physical cube structure that a BPC-embedded model traditionally uses or to use the consolidation journal delivered by SAP S/4HANA (that is, the ACDOCC table).

The consolidation journal offers the advantage of tracking all consolidation postings as documents across different data versions. To enable the use of the consolidation journal, document number ranges and document types need to be assigned to specific intersections of data. This is necessary for the standard-delivered task types of flexible upload, currency translation based on SAP S/4HANA, and write-back of consolidation results by SAP BPC. A further benefit of using the consolidation journal is that the financial consolidation application will generate a reporting view that combines it with the universal journal and universal planning data (if so configured) that can be accessed directly within SAP HANA for alternative reporting strategies and options.

USE CASES AND BENEFITS FOR CONSOLIDATION IN SAP S/4HANA

Some organizations struggle with reconciling management reporting, which is typically sourced from profitability analysis within the controlling module (or CO-PA), with financial consolidation, which is typically sourced from the general ledger. For such organizations, having management and profitability details such as customer or product in a financially consolidated ledger becomes a compelling use case for performing real-time consolidation on the universal journal – where CO-PA and general ledger have been merged. Cost center and other detailed expense items can also be incorporated into a real-time consolidation model. If the SAP "material ledger" is properly designed and configured, better visibility into and comparability of transfer pricing across the supply chain for end-customer and final-product profitability is also possible.

Key benefits associated with performing financial consolidation with SAP BPC for SAP S/4HANA include:

- Reduced cycle time during financial close through direct access to the universal journal and processing speed of SAP HANA that also enables continuous accounting and soft closes. Early insights help identify and remediate any issues prior to the hard close. Note that faster data load frequencies to an independent data warehouse, especially SAP BW/4HANA, are also possible, but not in real time – unless virtualization is provided by SAP HANA and without the SAP Fiori app–based data-release cockpit, monitor, and drill-through reports.
- Lower risk of inaccuracies by minimizing the amount of data replications and maximizing transparency of the ledger source including real-time validations against local data. Stand-alone deployments cannot match this benefit.
- Lower level of granularity in financial consolidation to support both management and legal reporting. Bringing such detail redundantly into an SAP data warehouse solution is impractical.

- More options for integrating other systems (both SAP and non-SAP) either through use of the central finance deployment option for SAP S/4HANA or flexible upload. SAP BW can achieve the same data integration objective, but not at the document level or with the financial integrity checks available within SAP S/4HANA.
- Reduced total cost of ownership by using a consolidation solution that can also be used for planning, reporting, and analysis on the same system where the transactions and operational processes are running. Note that having a separate data warehouse eliminates this benefit and should not be considered unless the investment cannot be unwound.

For those organizations that have begun implementing or have already implemented SAP S/4HANA, the justification for maintaining a separate planning or consolidation solution becomes strained. The level of detail and real-time integration available with SAP BPC for SAP S/4HANA is unmatched. For those considering the implementation of SAP S/4HANA, the benefits of SAP BPC for SAP S/4HANA can help build the business case.

A key benefit associated with performing financial consolidation with SAP BPC for SAP S/4HANA is **reduced cycle time during financial close** through direct access to the universal journal and processing speed of SAP HANA.

Nondisruptive Deployment Options **for SAP S/4HANA**

One of the key concerns about initiating an SAP S/4HANA implementation project, whether from scratch or as a system conversion, is the anticipation of the level of disruption the effort could have on the systems and the organization. As a result, for those organizations looking to use SAP BPC without such disruption while avoiding the risk of building a throwaway solution at the same time, there are two deployment options: using the central finance deployment option or designing SAP BPC to be migration ready.

THE CENTRAL FINANCE DEPLOYMENT OPTION FOR SAP S/4HANA

The central finance deployment option enables you to implement SAP S/4HANA separately from, while remaining connected to, the general ledgers of current systems.

It allows SAP and non-SAP systems to be integrated centrally into an SAP S/4HANA system at the lowest document-level detail in near-real time. An SAP Landscape Transformation Replication Server is used to detect database changes in the source systems and forward transactions in real time to the central finance system (that is, the SAP S/4HANA system).

Cutover is facilitated through a possible parallel go-live, since the central finance system can be connected to production source systems during late-phase testing and prior to productive use. Once data is successfully mapped to the universal journal in the central finance system, SAP BPC for SAP S/4HANA can be used centrally against the replicated data from various systems without disturbing them.

STAND-ALONE DEPLOYMENT OF SAP BPC

The BPC-standard model deployment (that is, deployment without SAP S/4HANA) of SAP BPC, version for SAP NetWeaver, generates its own unique and self-contained structures that silo the environment from the rest of the SAP NetWeaver platform. This design technique enables the application to be easily ported into any SAP system running on SAP NetWeaver version 7.5 (including the latest versions of SAP S/4HANA) through file-based download and upload. A migration, in this case, would be a simple backup and restore. If the source is an earlier version, a migration conversion would also be necessary.
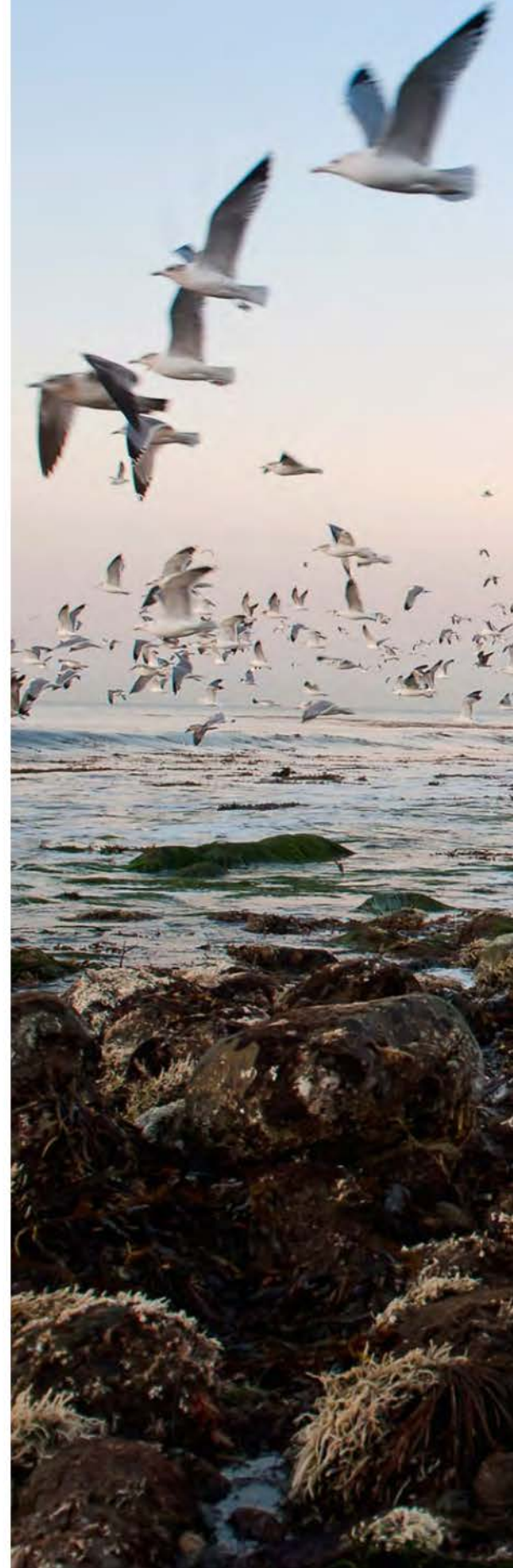
With a BPC-standard deployment, data must be loaded, resulting in data duplication – it is not in "real time."

In contrast, BPC-embedded deployment typically uses predelivered metadata from SAP BW (called "BI content"). While BI content is transportable for migration to an SAP S/4HANA system, this is not recommended for several reasons, including:

- SAP S/4HANA introduces its own content that is independent from BI content, has its own naming convention, and is architecturally different (that is, designed for real time).
- BI content is designed for extract, transform, and load (ETL) processing of batch jobs (that is, not designed for real time).
- BI content has a lot of intricate dependencies due to the maturity and growth of the solution over the last two decades. Depending upon the objects being used, it may be impractical to transport BI content to SAP S/4HANA, nor is there the benefit of achieving real-time access.

As a result, new projects that are using the BPC-embedded deployment option to implement the functionality (whether it is planning, consolidation, or both) should use the building blocks provided by SAP S/4HANA (called "InfoObjects") to facilitate future migration. Even if an organization is not currently ready to implement SAP S/4HANA, any new implementation can be future proofed.

SAP Note 2243472 (accessible through the SAP Support Portal destination at **support.sap.com**) explains the methodology in detail and has been independently validated by TruQua and its customers in public presentations given at the 2016 and 2017 annual ASUG meetings.

The transport files containing the InfoObjects from SAP S/4HANA are also supplied through another SAP Note (accessible through SAP Support Portal at **support.sap.com**). Please be aware that the InfoObjects referenced in the download file for the SAP Note have the exact same technical names as those in an SAP S/4HANA system but are not real time. Real-time master data and transaction data are achieved once a BPC-embedded deployment of SAP Business Planning and Consolidation is migrated from a stand-alone system to an SAP S/4HANA system.

The figure that follows demonstrates how the migration methodology works. The only InfoObjects that need to be transported to an SAP S/4HANA system are the ones built on top of the InfoObjects in SAP S/4HANA, such as the planning or consolidation cube, queries, and workbooks. The InfoObjects in the stand-alone system can be left behind, since they already exist in the SAP S/4HANA system.

The actual data cube can also be left behind since it is replaced with a "virtual provider" in SAP S/4HANA that accesses the universal journal in real time. Another virtual cube (either a "multiprovider" or a "composite provider") that unites plan and actual data simply needs to be repointed to the virtual provider replacing the actual data cube.

Figure: Migration from a Stand-Alone System to SAP S/4HANA Using the BPC-Embedded Model
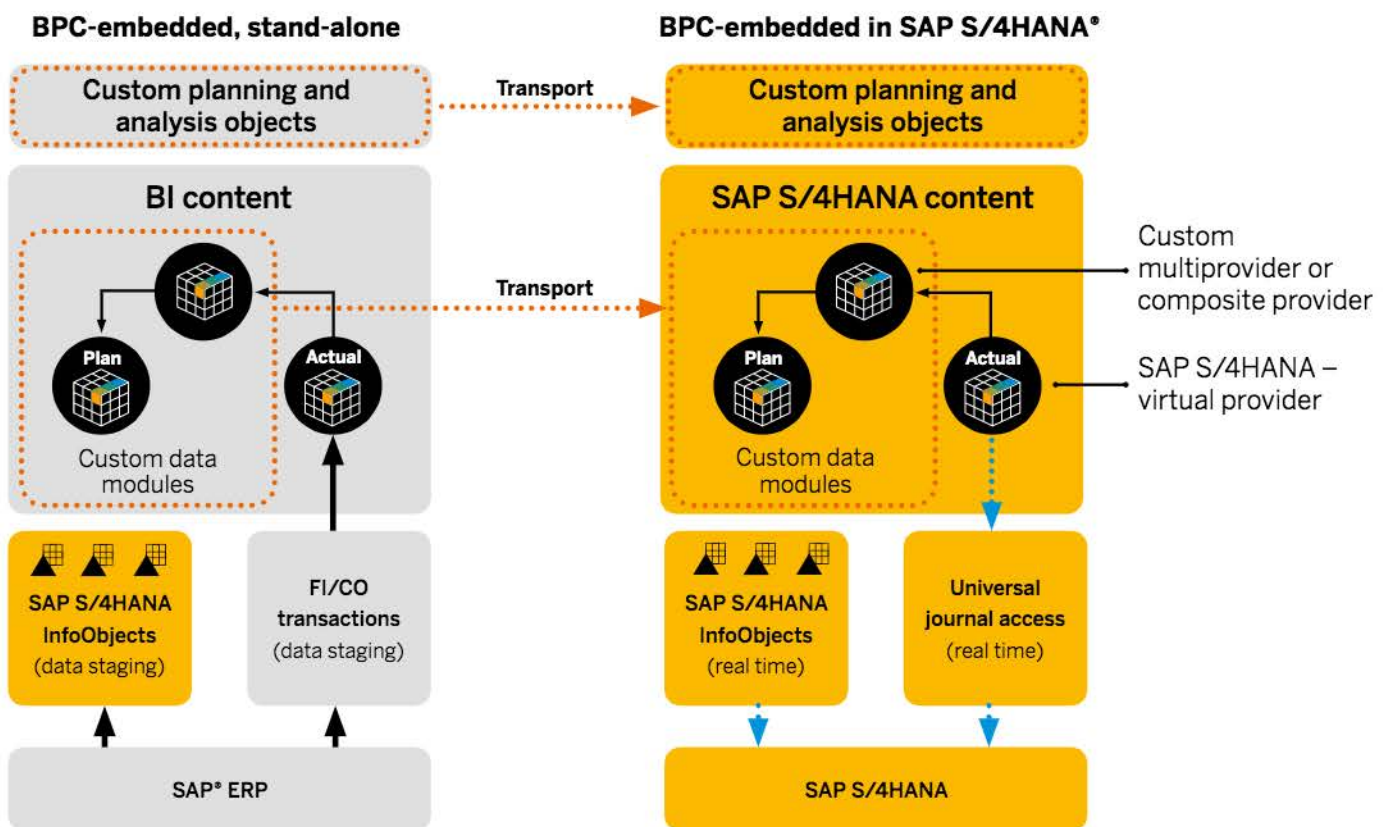
Conclusion

SAP has a unique offering on the market that provides the breadth, depth, performance, and real-time access that's possible only by embedding the functionality of SAP BPC into SAP S/4HANA. The result is unrestricted, real-time access to a single-source-of-truth transaction record – one that is at the most granular level of sales, logistics, and finance – for both planning and consolidation in a unified system.

With the acquisition of OutlookSoft, SAP received the innovation of design simplification, unification of planning and consolidation, and the usage of Microsoft Excel for modeling and reporting. SAP then integrated the solution, first into the SAP NetWeaver technology platform, then into SAP BW and SAP HANA, and finally into SAP S/4HANA. Leveraging a mature OLAP engine (provided by SAP BW) and fusing it with SAP HANA and an abundance of BI options (provided by SAP BusinessObjects solutions) makes SAP BPC a best-in-class analytic application, even without SAP S/4HANA.

The journey to SAP S/4HANA has several routes you can choose from. One route includes leveraging the central finance deployment option. Another includes not implementing SAP S/4HANA until later but future proofing SAP BPC by using SAP S/4HANA InfoObjects – the building blocks for SAP BPC for SAP S/4HANA.

SAP simplifies adoption by providing predelivered planning content and purpose-fit functionality to accelerate implementations and achieve benefits through good use cases. By uniting SAP BPC and SAP S/4HANA, IT can exploit ways to avert hardware, software, and labor costs associated with redundancies in data, tools, processes, and resources. In turn, finance will be able to realize value by capitalizing on efficiencies gained from a real-time system and applying the extra time to focus on more detailed and accurate analysis for greater effectiveness.
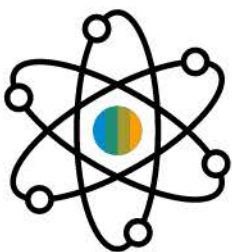
SAP BPC for SAP S/4HANA is a unique offering that provides **unrestricted, real-time access to a single-source-of-truth transaction record** for both planning and consolidation in a unified system.

LEARN MORE

For additional information about SAP BPC for SAP S/4HANA and related topics, see the following on the SAP Help Portal site:

- **SAP Business Planning and Consolidation for SAP S/4HANA**
- **Real-Time Consolidation**
- **SAP Business Planning and Consolidation, version for SAP NetWeaver**