

SAP Business Suite powered by SAP HANA | Fact Book

Fundamentals of SAP[®] Business Suite powered by SAP HANA[®]

Find Out How SAP Business Suite powered by
SAP HANA Delivers Business Value in Real Time

Disclaimer

This document is not subject to your license agreement or any other service or subscription agreement with SAP. SAP has no obligation to pursue any course of business outlined in this document or any related presentation, or to develop or release any functionality mentioned therein. This document, or any related presentation and SAP's strategy and possible future developments, products, and/or platforms directions and functionality are all subject to change and may be changed by SAP at any time for any reason without notice. The information in this document is not a commitment, promise, or legal obligation to deliver any material, code or functionality. This document is provided without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement. This document is for informational purposes and may not be incorporated into a contract. SAP assumes no responsibility for errors or omissions in this document, except if such damages were caused by SAP's willful misconduct or gross negligence.

All forward-looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from expectations. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of their dates, and they should not be relied upon in making purchasing decisions.

SAP[®] Business Suite powered by SAP HANA[®]

Fundamentals of SAP Business Suite powered by SAP HANA

SAP[®] Business Suite software is powered by SAP HANA[®], the next-generation platform, unifying analytical and transactional applications onto a single in-memory platform. Besides being a super-fast database, SAP HANA is an innovation platform offering advanced data analysis functionalities such as search engine, text analysis, spatial data analysis, and predictive analysis. By adopting this platform, businesses can leverage the functionalities of SAP Business Suite powered by SAP HANA and rethink business processes by harvesting value from intelligence in transactional data, or simply create business models not possible before.

With SAP Business Suite powered by SAP HANA, businesses can:

- Enable true market differentiation by creating new data-driven business models
- Make smarter decisions and minimize risks by enabling predictive analysis and simulation on Big Data
- Transform business processes with embedded intelligence in transactions to amplify topline growth
- Drive their entire business in real time

The business world is undergoing a rapid transformation driven by socioeconomic and demographic change as well as technological change. This can be a threat, but these changes also create completely new opportunities.

With so much data available, the key challenge is to uncover the full potential of relevant data and derive business value and competitive advantage.

Competitive advantage

Uncover the full potential of your data and derive business value

The next-generation business platform gives businesses a clear competitive edge by enabling them to:

- Uncover and seize new growth opportunities to stay ahead of the competition
- Dramatically accelerate their core business processes
- Empower their people with real-time business insights
- Expand and transform without disruption on an open innovation platform
- Consume new types of data such as sensor data, social network information, and unstructured information in new business processes

The innovations for SAP Business Suite powered by SAP HANA will be explained in detail in this chapter with more examples in the respective line-of-business chapters:

Porting	5
Porting SAP Business Suite on SAP HANA	5
Optimizations	8
Optimizations in SAP Business Suite on SAP HANA	8
Hybrid Transactional and Analytical Processing (HTAP)	12
Business Practices Today	12
HTAP in Accounting and Financial Close	18
Example: Invoice and Goods Receipt Reconciliation.....	18
HTAP in Receivables Management	20
Example: SAP Working Capital Analytics, DSO Scope	20
HTAP in Order-to-Cash	23
Example: SAP Smart Business for Sales Order Fulfillment	23
HTAP Everywhere: SAP® Fiori™ Search	26
SAP HANA Deployment Options	29
High Performance Applications (HPAs)	32

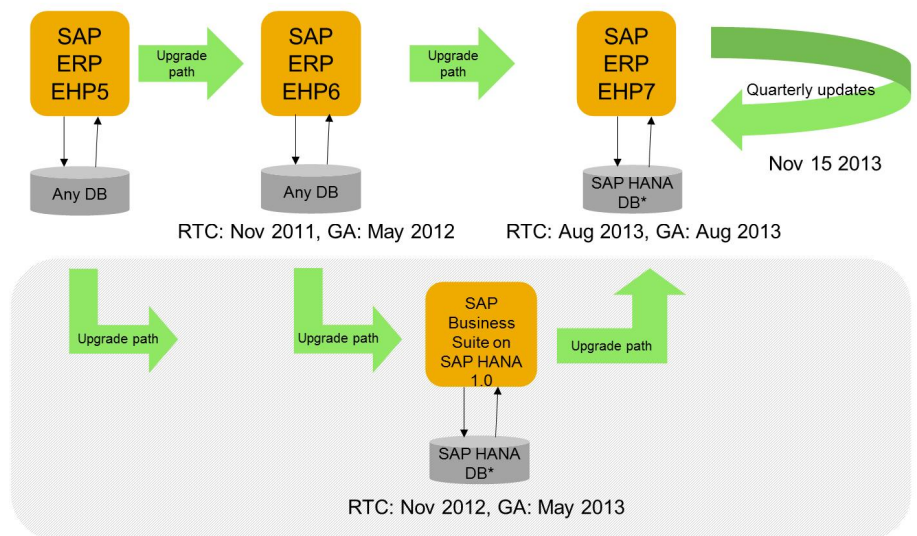
Porting

Porting SAP Business Suite on SAP HANA

Business Practices Today

SAP Business Suite has been available on multiple database systems. Starting with SAP Business Suite 7i2013, SAP Business Suite is also available on SAP HANA.

SAP Business Suite product version road map



© 2012 SAP AG. All rights reserved.

SAP Business Suite 7i2013 is running on SAP HANA

Limitations are described in notes.

Ambition

The key ambition of SAP Business Suite on SAP HANA is to provide an innovative business suite without causing disruption to existing installations. To achieve this goal, SAP ensured that only enhancement package-compliant changes were made by leveraging the switch framework through business functions.

Performance improvements through a simple porting to SAP HANA were limited to the database runtime improvement, as porting does not completely leverage the SAP HANA database architecture. Therefore, SAP made additional optimizations to the application code, to significantly leverage the architecture of SAP HANA and to demonstrate a substantial leap in business value.

Challenges

As the full power of SAP HANA emerged through the optimization of the applications, including through stored procedures specific to SAP HANA, a key challenge was to ensure the functional correctness of the applications and to safeguard the adherence to product standards. Rigorous testing was therefore executed to ensure that SAP Business Suite on SAP HANA met the high standards expected from such a release.

Business Innovation with SAP HANA

SAP HANA is an in-memory column store database. It is the ideal choice for processing large amounts of data without the need for aggregates or indices. In addition, significant architectural, performance, and business benefits are realized using specific features of SAP HANA – for example, hybrid transaction and analytical processing (HTAP). These will be discussed in detail in subsequent chapters.

Innovation in Detail

SAP Business Suite is ported and released on SAP HANA. For customers, the product, including the optimizations, is nondisruptive. All changes to development objects are connected to the switch framework, thereby enabling the customer to decide when to activate the change.

Code optimization

Maximal flexibility – minimal disruption

SAP HANA optimizations:

- Additional views
- Stored procedures (code pushdown to SAP HANA)

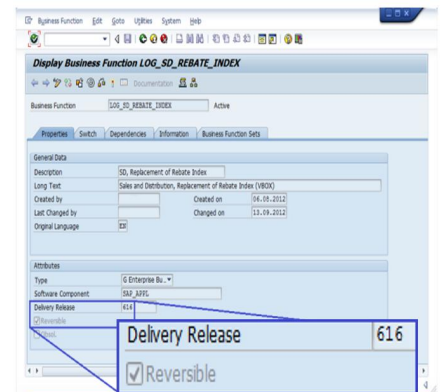
To be activated via switch framework – no change in business logic after migration to SAP HANA

- All switches are reversible
- Switches can be activated independently
- Maximal flexibility in consumption of optimizations
- Minimal disruption for customer business

Custom Code (ABAP reports)

- Regression tests for own code recommended after SAP HANA migration

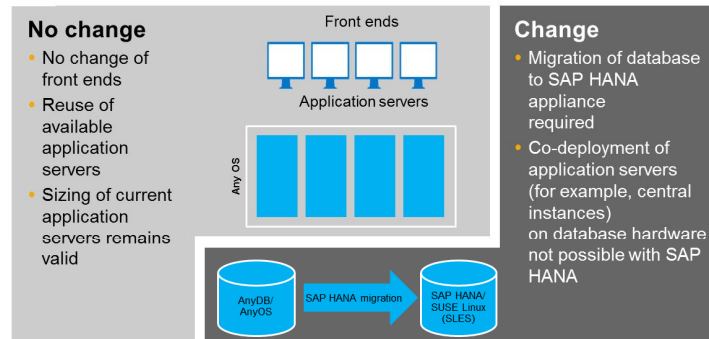
Display Business Function (SFW2)



For a customer, there is no impact on customizing, IMG, modifications, security, and so on.

System considerations – what changes and what doesn't

Migration of database server only + benefits



No functional changes:

IMG, customization, modifications, connectivity, security, transports, monitoring (DBACockpit & SolMa) stay all the same

Application and reporting benefits:

No dialogue process in batch; acceleration/elimination of batch; run operational reports in real time inside SAP Business Suite

Road Map and Outlook

Several notes are available to tell customers:

- Which products are available
- Which limitations exist for released products
- Which processes and scenarios are (or are not) released
- Which industries are (or are not) released
- Which add-ons are (or are not) released

SAP ERP: 1737650, add-ons 1820906

SAP CRM: 1877529, add-ons 1820903

SAP SCM: 1737723, add-ons 1821797

SAP SRM: 1818517, add-ons 1820905

SAP NetWeaver AS ABAP 7.40 add-ons 1826531

SAP NetWeaver Java 7.40 add-ons 1850345

Partner add-ons 1855666

Product Details/Prerequisites

SAP Business Suite 7i2013 is the go-to release for SAP Business Suite on SAP HANA. It has been generally available since August 2013. A customer will get additional optimizations through quarterly updates to this release.

Optimizations

Optimizations in SAP Business Suite on SAP HANA

Business Practices Today

At the time when SAP Business Suite was being developed around 20 years ago, a key design principle of three-tier architecture was employed wherein all the data was processed in the application layer (ABAP), with standardized interfaces to the database layer. The application layer therefore contained and executed the logic for business processes, calculations, user management, data mappings, and so on. This resulted in huge volumes of data transfer between the database and the application layer. Moreover, to allow for fast access to data using different sets of keys, redundant data was stored across several database tables. Therefore, an optimal search based on attributes required these attributes to be indices on database tables.

Over the last years, innovation in area of networks, devices, and hardware, have created new possibilities that that contributed to rethinking and reengineering these applications.

Ambition

The ambition for the next-generation business suite on SAP HANA is to:

- Provide a platform for optimized end-to-end processes
- Minimize the number and amount of data that is transferred between the database and the application layers
- Avoid redundant data storage thereby reducing TCO
- Enhance user experience by allowing easy search without technical restrictions based on available indices on database tables

Challenges

- Application code needs to be optimized and reengineered to truly leverage the in-memory columnar storage provided by SAP HANA. This change should be entirely nondisruptive and the application behavior must continue to be functionally correct.
- Minimizing and removing redundant storage in the database should be nondisruptive.
- It is important to provide a consistent search experience irrespective of the existence of an index corresponding to a search attribute.
- To have maximum impact, it is key to identify the right applications and transactions to optimize.
- Optimization of end-to-end processes is necessary to have a holistic impact. This could involve optimizations to several transactions, UI, and SAP HANA backend, and integration of analytics in the end-to-end processes

Business Innovation with SAP HANA

SAP HANA is an in-memory column store database. In comparison to a traditional relational database system, such a database, it is a superior choice for processing Big Data without the need for aggregates or indices.

Beyond the functionality of a database, SAP HANA also includes a search engine, text analysis, a prediction engine, and so on. Traditionally, enterprises employed satellite systems to perform these tasks, thereby requiring a data replication mechanism and therefore creating further costs. This is no longer the case with SAP Business Suite powered by SAP HANA.

**1,290x
faster***

Report RVAUFERR
(Incomplete Sales
Documents)

4 TB saved*

Elimination of index
table VBOX in SD
rebates management

**Fuzzy
search
enabled**

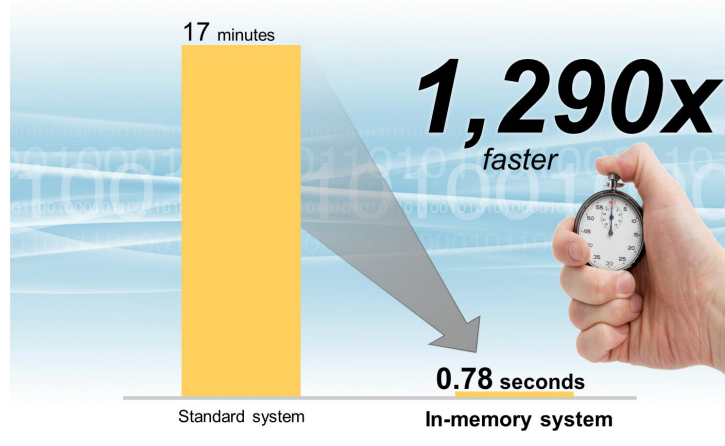
in bank statement

Innovation in Detail

- An example of such optimizations is Report RVAUFERR (Incomplete Sales Documents) which was optimized by an improvement factor of 1,290*. This means the SAP HANA optimized version runs 1,290 times faster than the classical report that existed before.

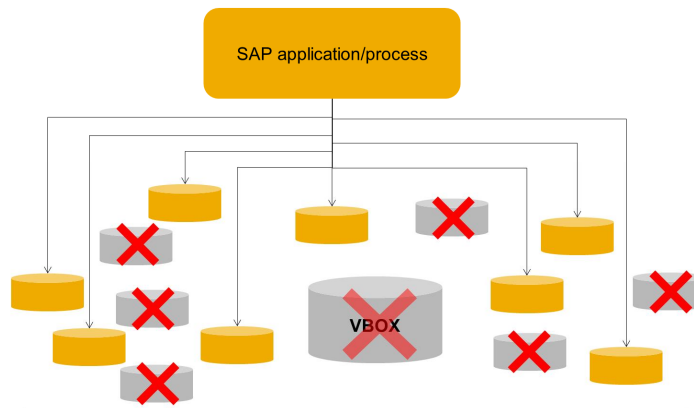
*The specific observed performance depends on configuration, data volumes, and data constellation.

Optimization of reports/transactions



- In sales and distribution (SD), the rebates process uses database table VBOX, which is a materialized index table having redundant data. Billing data is no longer saved redundantly. Regarding TCO, there is a huge saving potential concerning memory capacity. In extreme cases, SAP customers have table sizes of 4 TB. Besides this, technical issues related to data storage and access are avoided. There is no need for recurring index reorganizations for a business process improvement, and changing the rebate conditions no longer requires lengthy recalculation of the VBOX table.

Removing index tables



- In a column store database such as SAP HANA, every attribute of a database table can be accessed incredibly fast without the need for

defining indices. For example, in financials, SAP introduced a new search field (input field) in the existing UI of the incoming payment clearing process (bank statement post processing). In many companies, the allocation of incoming payments to open invoices is one of the most resource-demanding daily tasks in accounts receivable. With SAP Business Suite on SAP HANA, the user can perform a free search on all relevant fields of the invoices. The new search runs faster on SAP HANA than on any row store database.

80% of the most-used ERP transactions are optimized*

MRP run 10x faster*

Free text search

The screenshot shows the SAP 'Free Text Search' interface. At the top, there's a search form with a 'Contract Number' dropdown, an input field containing '*ABC123*', and a 'Start Search' button. Below the form, a table displays search results. Annotations include:

- Free Text Search:** A new search field for simultaneous search in different columns and tables.
- Ranked Result List:** Result list ranked by relevance.
- Result Indicating Hit Field and Value:** Points to the 'Hit Field' and 'Hit Value' columns in the results table.
- Search also in Cleared Documents:** Points to the 'In Preceding Document' checkbox in the results table.

Hit Field	Hit Value	Account	DocumentNo	CoCd	T	Posting Date	Amount	Currency
Document Number	140000308	Customer	0602	190003088	FIDP	DZ 08.10.2010	4	EUR
Document Number	190000308	Customer	0602	190003088	FIDP	DM 05.10.2010	7	EUR
In Preceding Document		Customer	YX02	190004964	FIDP	AB 03.02.2011	139	EUR

- Using SAP HANA for MRP ensures an up-to-date planning situation due to faster MRP runs and thus makes it possible to execute planning runs more frequently. At the same time, it helps to detect and evaluate material shortages as well as finding critical demands or supplies. Furthermore, you will be able to evaluate the consequences of material shortages – for example, determine which sales orders are endangered by a late supply.
- In general, the most-used transactions and reports were a target for the optimizations

Benefits

- Improved E2E **business processes**
- Optimizations creating immense **performance improvement**
- Minimized storage of redundant data, thereby **reducing TCO**
- Enhanced **user-friendly search** without dependency on indices
- Optimization of most-used transactions, thereby **maximizing impact**

Product Details/Prerequisites

SAP enhancement pack 7 for SAP ERP 6.0

Hybrid Transactional and Analytical Processing (HTAP)

Business Practices Today

Separate OLTP and OLAP Environments

Transactional systems are optimized to manage record-by-record activity such as updating a purchase order. In many early computing systems, reports were run directly on these transactional systems. However, about 20 years ago, analytical systems were separated from transactional systems, as they could then be optimized to aggregate and analyze transactional information.

Having two sets of systems, each optimized for different functions, was necessary to meet the performance requirements of each function. Moreover, as enterprises started tapping into unstructured data, information as disparate as engineering drawings and consumer sentiment data, yet another layer of analytics was created, making it difficult to reconcile with the existing OLTP and OLAP environments.

Ambition

Reinvent your industry by reengineering processes around situational awareness of your business, customers, and markets.

Historically, having separate systems for transactions and analytics created an unspoken set of limitations on how businesses could respond to customers or to changing markets. Business processes were less attuned to the specific needs of a customer because there was no certainty that all the data required to make precise customer classification was available in real time. This separation meant that many operational processes ran suboptimally, based on approximations of real-time trends as there wasn't enough processing power to take into account real-time conditions and quickly adapt to changes.

Bringing together all the information of the enterprise into a common architecture will speed access and improve the insight available from that information, resulting in better customer and market responsiveness within existing business models.

Live business insight

Eliminate analytic latency; get unique perspectives; reduce costs.

However, beyond the first-order consequences of improved business responsiveness, the disruptions in the flow of information in an industry can be used to create entirely new business models as information becomes a source of competitive differentiation. The discontinuity created by in-memory computing will unseat the unspoken constraints embodied in the separate transaction and analytic environments and redefine how information flows across the enterprise and its business networks.

Simply put, with SAP Business Suite powered by SAP HANA, you no longer have to wait for replication to analytical environments to get the “real” truth about what’s happening in your business right now, or switch contexts to find the real source of problems or the true nature of opportunities. This gives enterprises in all industries an opportunity to gain competitive advantage by reinventing their business model around the new information architecture created by the convergence of Big Data, fast data, and live data.

Challenges

Crossing the Analytical and Transactional Chasm

There has always been a desire to have high-speed access to live information. However, due to the performance limitations of disk-based computing environments, the existence of two separate environments was the optimal architecture. OLTP and OLAP as separate systems created four intractable challenges, which have inhibited the ability of enterprises to innovate through insight into their business.

High Analytic Latency – Because of the time required to move information from the source transactional system to the analytical environment, the analytic information about the enterprise never matches the actual operating conditions that managers and executives need to respond to.

Limited Analytic Fidelity – Because the information in analytical systems is aggregated and summarized for optimal use in analytic queries, it is difficult to look at the data in a new way or drill down into the data to understand why a trend is happening.

Disconnected Insight into Action – Because the information in analytical systems is replicated from the transactional system, it is difficult to maintain the link from a top-level analytical output to the underlying transaction source that made up that result. This makes it difficult to see a trend and then connect that to specific actions that need to be taken in response.

Additional Cost and Managerial Complexity – Having a separate set of systems for analytics adds an additional layer of cost, management, skills, and complexity to the system landscape.

Business Innovation with SAP HANA

A Hybrid Transactional and Analytical Processing (HTAP) Platform for Your Business

SAP Business Suite powered by SAP HANA uses the latest architecture and in-memory computing technology to overcome the historical performance limitations that created the need for separate transactional and analytical environments. As a result, SAP Business Suite powered by SAP HANA crosses the analytical and transactional chasm to create the first true hybrid transaction and analytic processing (HTAP) suite of business applications with the following features:

Live Insight – Because SAP Business Suite powered by SAP HANA uses the live transactional data to generate real-time analytics, there is no analytical latency. This means that you see what is happening to your business now, without a mismatch between what's reported by the analytics and what you see in the source or detail data.

High Fidelity Insight – SAP Business Suite powered by SAP HANA does not use analytic aggregates that are not connected to real-time transactional data. This means that analytics are calculated dynamically on the exact current conditions of the business. If the business changes, and you need to look at the business analytics in a different way, that new perspective is instantly available because there is no reloading of data or recalculation of aggregates to accommodate the new requests for analytics.

Insight Connected to Action – SAP Business Suite powered by SAP HANA maintains a live linkage from the analytical output to the underlying live source data used to create this output. There is no translation of the underlying source data. Additionally, if the underlying transactions change, SAP Business Suite powered by SAP HANA is still able to maintain the link to the source transactional data. This is because SAP Business Suite powered by SAP HANA isn't replicating the data; it is dynamically calculating based on the live data.

Reduced TCO – There is no need to maintain a separate analytical environment to process the analytic requirements of the business. This eliminates redundancies in hardware and software, makes integration simpler by reducing the need for analytic integrations, and reduces the number of skills that need to be managed in an IT organization.

Innovation in Detail

SAP customers can use the HTAP architecture of SAP Business Suite powered by SAP HANA to overcome the performance limitations outlined above. These are transactional systems in which the analytical processing of both structured and unstructured data is performed on normalized source data where performance is sufficient to meet the analytical requirements of business users without the use of denormalized tables or analytic aggregates

Benefits

Using Situational Awareness to Create New Sources of Competitive Differentiation

The industry disruptions mentioned above are manifesting themselves in three common patterns that can be used to redefine how an enterprise relates to its customers, suppliers, and markets.

Situationally Aware Business Management – This is the ability to connect analytics to live business data so you can get high-fidelity insight about business conditions in real time.

You have the ability to dig deeper with infinite resolution into the original transactions because analytics are on live source data without data latency. Business decisions are immediately reflected in updated analytics because the transaction and analytics systems are the same.

For example, you can give the CEO a real-time balance sheet for the business. A CFO can see how financial adjustments affect closing in real time to speed end-of-period closing.

Digital Segments of One – This is the ability to create customer experiences based on their behavior today. It is also the ability to dynamically adjust business processes based on the conditions the business faces today.

You can personalize the customer experience based on consumer behavior because heterogeneous data sources, such as sentiment and social data, can be combined with real-time transaction data. As you adapt customer experiences in real time, you can cascade these changes through the enterprise by individualizing business processes to what's right for the specific case, rather than the general.

For example, an enterprise can create dynamic offers and bundles by combining real-time social media data with real-time supply chain data to jointly optimize campaign response rate and product profitability.

Adaptive Business Management – This is the ability to simulate and optimize business processes in real time to enable adaptive course correction. Use in-database predictive calculation engines to anticipate rather than react.

Close the gap between planning and execution because HTAP enables high-performance computing in the data engine. Close the gap between insight and action because HTAP enables analytics without preaggregation of data.

For example, an enterprise can quickly optimize how scrap material from a previous manufacturing batch can be used in subsequent batches to reduce the amount of raw materials required. Or a business may predict how a particular sales order or pricing change will affect its profitability this quarter before it issues the quote.

TCO Considerations

	TCO Benefit	Improvement Range
Reduce server costs	Replace large mainframe architectures with scalable SAP HANA appliance Smaller system needed due to data compression	20% – 30%
Reduce storage costs	SAP HANA delivers significant compression due to columnar technology and eliminates redundant data Less data duplication due to operational reporting on the transactional data directly (reduction of business information warehouse [BW] size)	30% – 60%
Increase user satisfaction	Reduction of process cycle times by moving batch into online KPI-dashboard-driven working mode will increase user satisfaction and efficiency	User satisfaction up
System consolidation	Simplify overall system landscape by consolidating systems on a single platform Move custom applications onto SAP HANA Reduce the amount of custom extensions needed	Reduced operating expenses
Reduce future operational costs	Reduce effort in day-to-day database (DB) administration Eliminate costly DB optimization projects Reduce testing effort	
Reduce cost of business intelligence/reporting	Enable self-service through consumption of analytical or calculation views in real time Avoid cube reorganizations in BW	20% – 30%
Time to market	Live implementation possible in three days with SAP HANA Enterprise Cloud Move PoC and project systems into the cloud for faster project execution Faster development of custom applications due to simplified architecture	
Tailored data center integration	Reduce hardware and operation costs Reuse existing storage infrastructure and processes Gain more flexibility in hardware vendor selection	30% – 40% Compared to appliance
Multiple components on one system (MCOS)	Enables nonproduction workloads with half the number of cores (double the core- to-memory ratio) Multiple nonproduction SAP HANA instances on the same system	10% – 20% Compared to appliance
Virtualization	Multiple nonproduction virtualized SAP HANA instances on the same system reduces the overall count of required servers	10% – 20% Compared to appliance
Co-deployment	Enables add-on deployment of SRM and or SCM on ERP Reduces the overall count of systems Additional use of SAP HANA Live and embedded BW can significantly reduce overall system landscape and operation costs	> 50%

HTAP in Accounting and Financial Close

Example: Invoice and Goods Receipt Reconciliation

Business Practices Today

All goods receipts and invoice receipts are collected on the GR/IR clearing account. If quantities and prices match, they will be automatically cleared by the system.

However, not all items can be cleared automatically for various reasons:

- An invoice or goods receipt is missing.
- Quantities do not match.
- The purchase order was created with an outdated price list.
- Delivery costs were mistakenly posted on the GR/IR clearing account.

Challenges

These items are processed manually in a collaboration of FI and the buying center, but:

- Existing transactions do not support this cross-area collaboration well.
- Separate views and transactions increase the reconciliation effort.
- Especially at big companies, unmatched items on the GR or the IR account can easily reach millions of records so that reports running on a traditional database will get into serious performance issues.

Ambition

- Gain insight into the situation on the GR/IR account
- Avoid doing this by launching multiple different reports and using office tools to come to a list of nonmatched items
- Be able to trigger follow-up activities and record matched items

Avoid paying unjustified vendor invoices

Improved clarification process for invoices

Don't get lost in different screens

Business Innovation with SAP HANA

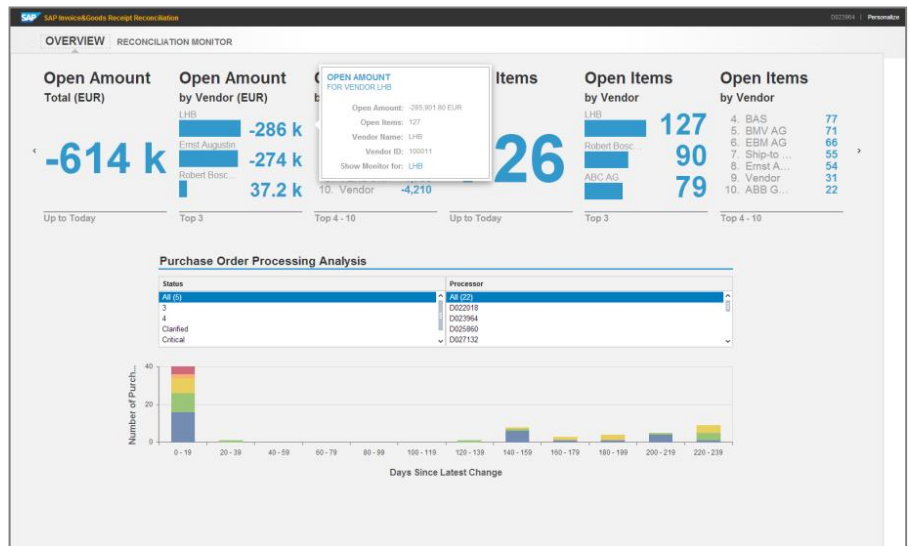
The new SAP Invoice and Goods Receipt Reconciliation analytic application improves this process

- The performance of SAP HANA allows a real-time matching of open goods receipts and open invoice receipts.
- All necessary data is on one screen.
- Processing steps and status can be documented in the application.
- Even large data volumes can be analyzed and matched in a dialog process.

SAP HANA makes a unified transactional and analytical processing on one instance a reality. This makes it possible to dig down to the lowest level of granularity and analyze vast amounts of data in a dialog process, while at the same time being able to trigger necessary corrections or, in the case of SAP Invoice and Goods Receipt Reconciliation, record-matching information.

Innovation in Detail: SAP Invoice and Goods Receipt Reconciliation

Quickly retrieve purchasing history, receipts by vendor, and contact data for clarification



Manage your work list: Select the data you are interested in by setting the global parameters client, company code, and time frame.

Analyze open items in real time: For each open item, directly see Purchase Order, Financial Accounting open item, Goods Receipt, Invoice Receipt.

Resolve an issue within the same application: Use the provided contact information for the vendor, the buying agent, and other involved users, to trigger a solution and document it in a note and status change.

HTAP in Receivables Management

Example: SAP Working Capital Analytics, DSO Scope

Business Practices Today

In today's volatile financial markets, a company's efficiency and financial health is more important than ever.

Influencing and managing accounts receivable is of high significance in this context, especially in a global environment with major regional differences – for example, with regards to payment terms.

Current solutions to calculate KPIs based on classical balance sheet analysis methods (indirect method) result in considerable variations of days sales outstanding (DSO) values, depending on when the calculation is performed. This effect increases even more in cases of seasonal fluctuations.

Furthermore, analyzing the issue and finding the root cause is often cumbersome due to aggregated data and restricted drill-down capabilities.

Ambition

DSO is the measure of the average number of days that a company takes to collect revenue after a sale has been made. A low DSO number means that it takes a company fewer days to collect its accounts receivable.

Due to the high importance of cash in running a business, it is in a company's best interest to collect outstanding receivables as quickly as possible. By quickly turning sales into cash, a company has the chance to put the cash to use again.

Challenges

- Key date-dependent views on data only
- Loss of detail, information, and precision due to calculations on aggregated data
- Restrictive drill-down capabilities only
- Analysis lag as latest data cannot be taken into account

Flexibility

Drill down
to details

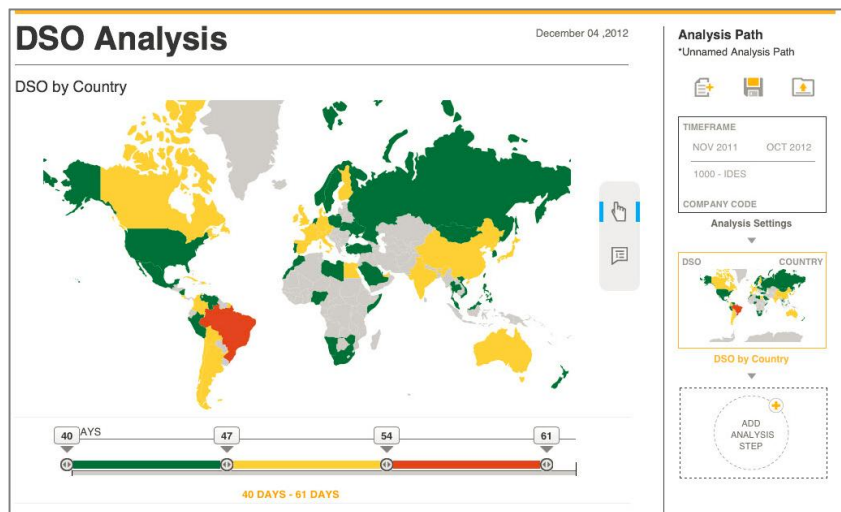
Business Innovation with SAP HANA

The SAP Working Capital Analytics analytic application runs on iPad and desktop and provides a new approach to analyze data.

- Powered by SAP HANA on real-time ERP data
- KPI calculations based on *original documents*, such as accounts receivable documents (direct method), providing authentic results and a *realistic view on cash flow*
- Calculation based on data details provides *new possibilities to explore and drill down* (for example, detailed analyses by customer, down to financial line items). So far, analyzing data on this level (if possible at all) was very complex and time consuming and had to be done manually.

Single source of truth

No aggregated data



Innovation in Detail

With SAP HANA, the DSO calculation is based on real-time data and is no longer based on aggregates.

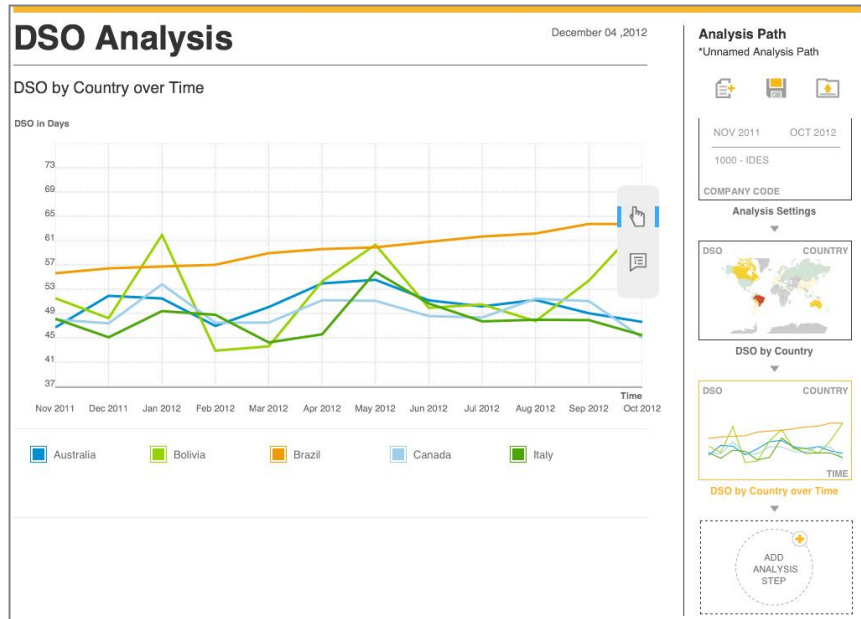
Using these original documents, such as accounts receivable documents (direct method), the calculation provides authentic results and a realistic view on cash flow.

This also creates new possibilities to explore and drill down (for example, detailed analyses by customer, down to financial line items). Previously, analyzing data on this level of detail (if possible at all) was very complex and time consuming and had to be done manually.

Furthermore, companies can immediately calculate the DSO KPI at any time and no longer need to rely on old data.

This reduces the latency for the KPI calculation significantly and allows faster reaction times for management.

Easy to use
Intuitive user interface



Benefits

Accuracy – Make the right decisions based on the most accurate and relevant data (exploring DSO based on original documents using the direct method)

Flexibility – Interactively build up flexible analysis paths to details – for example, by customer, payment terms, or document

Ease of use – Intuitive interaction, parameterization of queries

Road Map and Outlook

For Q1/2014 it is planned to additionally support the traditional (indirect) calculation of days sales outstanding. This will allow companies to continue using their current calculation method but still leverage the potential of nonaggregated data.

Furthermore, the solution scope will be enhanced to allow the analysis of days payable outstanding (DPO), which is another important KPI in working capital management.

Product Details/Prerequisites

To make use of SAP Working Capital Analytics you will need:

SAP HANA Live for SAP ERP

SAP Working Capital Analytics, DSO scope (desktop or iPad version)

HTAP in Order-to-Cash

Example: SAP Smart Business for Sales Order Fulfillment

Business Practices Today

The order-to-cash processes cover the whole process chain from a customer order to fulfillment and payment, including order management, available-to-promise check, and invoice management.

Main goals are:

- On-time delivery
- High delivery reliability
- Low process costs per delivery
- High efficiency and transparency

Ambition

In addition to low transaction times and costs, short cash cycles, and cash flow optimizations, customer satisfaction is a key success factor today. High customer satisfaction may lead to significant revenue increase by keeping existing customers or acquiring new ones. Often it becomes a main differentiator in the market.

Sales order tracking provides a comprehensive overview about relevant order information, critical statuses, and process flow progress across the complete order-to-cash process.

Challenges

The order-to-cash processes are usually highly automated and can involve many different business documents from various business areas – for example, procurement or production and production planning. Whenever the process falls behind, the customer service clerk needs to be informed in order to take appropriate action. The process may fall behind for a variety of reasons:

- High data volumes involved
- Missing transparency – sales order status is often needed on short notice but expert knowledge is required to find it in the system
- Long-running batch jobs for identifying problematic sales orders leading to delays in exception handling
- Complicated error resolution due to complexity of involved transactions

Real-time

insights along the whole process chain the moment a process happens

Insight to action

Using OLAP to identify OLTP data for processing

Business Innovation with SAP HANA

The SAP Smart Business cockpit for sales order fulfillment brings more transparency and efficiency into the monitoring and tracking of the entire order-to-cash process across applications and in real time.

The cockpit runs on mobile devices as well as on the desktop. Customer service clerks are now aware of all detected sales order fulfillment issues along the process chain, be it during order, delivery, or invoicing. Issues can either be resolved or mitigated before they impact customer relationships.

Innovation in Detail

Tracking sales order status involves high data volumes because of the number of involved documents along the order-to-cash process. Up to now, sophisticated and long-running batch processes have been used for determining and calculating sales order status in order to answer questions such as:

- How many orders are only partly delivered or not delivered at all?
- How many orders are delayed due to unconfirmed quantities?
- How many orders are blocked due to any kind of exceptions?
- Was process interruption due to billing or delivery blocks?
- Was special treatment necessary due to credit block?
- How many orders are only partly or not invoiced at all?
- What is the status of my sales order and are there any issues?

Answering these questions and identifying the involved documents is now possible in real time. The necessary analytical queries are performed on the transactional data. The identified issues and the related documents are displayed to the user together with the necessary means to resolve them fast with user-friendly UIs.

With SAP HANA it is now possible to react to incidents without having to monitor every single step along the execution chain of the order-to-cash process.

Also, inquiries regarding certain sales orders – for example, by the customers – can now be directly answered based on real-time transactional information and not based on the results of batch job runs that are already outdated.

From pull to push

Event-based business process handling

Exciting user experience

Fast and highly responsive UI due to SAP HANA

Benefits

- Increased customer satisfaction through better customer management.
- Transparency and efficiency: holistic overview of all relevant sales order information and status of the involved process chain steps
- Real-time insights based on the actual transactional data
- Faster reaction to exceptions
- High usability

Product Details/Prerequisites

SAP ERP 6.0 with enhancement package 7

SAP NetWeaver 7.40

No latency

No data replication or indexing; no outdated information

HTAP Everywhere: SAP[®] Fiori[™] Search

Business Practices Today

Finding business-related information within transactional systems is usually related to creating and processing document work lists. Simple reports and sometimes long-running batch jobs are used to identify a set of documents that need to be changed or used for the creation of follow-on documents. This pattern is mostly related, due to the nature of transactional systems and the way of working they implied.

This paradigm has changed. The way we look for information, the reasons we do so, and the questions we try to answer have changed fundamentally from simple lists to actual insights and related information. **Search has become the paradigm for information retrieval.**

Ambition

We believe that it is not about just searching for certain information but about finding the answers to business-related questions. These questions are not focused just on finding a certain business entity but are more complex in nature and usually involve several business entities as well as aggregated analytical information and unstructured data. Often enough at the time of the search, the actual questions are still vague.

Challenges

- Translating business-related questions into real answers
- Large and fast-changing amounts of data
- Responsiveness – long-running searches are not accepted by users
- A search is usually just the first entry point
- Authorizations – find only what you are allowed to see

360° view on business entities

Analytical facts
combined with
operational data

Business Innovation with SAP HANA

With SAP HANA it is now possible to search across the huge number of business entities within the SAP Business Suite in real time without time-consuming indexing or the need for additional hardware.

It lists not only the found entities as result sets but also detailed information about document status, referenced documents, and analytical information aggregated in real time. It provides a comprehensive overview and acts as the new entry point to the SAP Business Suite.

- State-of-the-art search experience with full text, freestyle, and fuzzy search
- Comprehensive 360-degree view of business entities
- Enriching transactional data with analytical information
- Contextual navigation across the entire SAP Business Suite
- Simple and intuitive UI

Innovation in Detail

SAP Fiori provides a state-of-the-art search for the SAP Business Suite. It supports

- Freestyle search as entry point to the SAP Business Suite
- Fast, SAP HANA-based search
- Suggestion of search results via type ahead, including top results
- Direct navigation to factsheets of found business entities
- Contextual navigation between related business entities and SAP Fiori apps
- SAP Fiori-based fact sheets

Hard drive katie

SEARCH RESULTS (23)

<p>Central contract PA Electronic Harddiscs 2nnn 5800500002 Purchase Contract</p> <p>Terms of Payment: 14 Days 3% - 30/2%, 45 net Supplier: 3511 - PA Drives Purchasing Group: 001 - Equipment</p> <p>Material: Hard Drive, 10TB Short Text for Purchase Cont...</p>	<p>Target Value: 150.000.000,00 USD</p> <p>Validity Period: 26.06.2009 - 26.06.2020</p> <p>Incoterms: Costs, insurance & freight</p>
<p>Standard PO 4500017331 Purchase Order</p> <p>Terms of Payment: Pay immediately w/o deduc... Supplier: PA Drives 3511 Purchasing Group: 001 - Equipment</p> <p>Material: Hard Drive, 10TB Short Text:</p>	<p>Company: 3000 - SAP America Inc.</p> <p>Purchasing Organization: 3000 - US Hardware</p>
<p>5000012553 2013 Goods Receipt</p> <p>Document Date: 10.10.2013 Created By: Arthur Miller Transaction/Event Type: WE - Goods Receipt for Purc...</p> <p>Material: Hard Drive, 5TB</p>	<p>Created On: 26.06.2009</p> <p>Last Changed On: 26.06.2009</p> <p>Created By: Katie Jacob</p>
<p>5000012552 2013 Goods Receipt</p> <p>Document Date: 10.10.2013 Created By: Arthur Miller Transaction/Event Type: WE - Goods Receipt for Purc...</p> <p>Material: Hard Drive, 5TB</p>	
<p>SP_XLT0002 Hard Drive 80GB - Series 5000 Material</p> <p>Material Type: Trading Goods Material Category: Single material (industry) Material Group: 002</p>	

SAP Fiori search: display of results

The foundation of the SAP Fiori search is the virtual data model of SAP HANA Live. Due to these virtual views, no time-consuming nightly indexing is required and all information is always up-to-date.

Benefits

- From search to find – save time by finding the answers you were looking for, fast
- Real-time data access – no latency, no data replication or indexing, no outdated information
- Get key information, business relationships, and links to actions at a glance
- Low TCO as search is done within transactional data; no further hardware required
- Integrates with other SAP innovations such as unified shell and SAP Fiori apps

Road Map and Outlook

Further Integration with unified shell and SAP Fiori.

Product Details/Prerequisites

SAP ERP enhancement package 7 SP02

SAP NetWeaver 7.40 SP04 with SAP_UI SP05 from UI add-on SP06

SAP HANA Deployment Options

Business Practices Today

Enterprise system landscapes and infrastructures are heterogeneous and have evolved over several implementations and deployments from the past. In addition, total cost of ownership (TCO) and speed of innovation are increasingly critical drivers for businesses. Harmonization and consolidation of business system landscapes are therefore essential to drive down TCO and enable fast innovation with regard to hardware and operations. This would result in efficiency gains, agility, and flexibility, which are crucial to effectively respond to a rapidly changing business environment.

Ambition

Our goal for SAP Business Suite powered by SAP HANA is to help customers drive down their overall TCO and benefit from the full power and strength of the speed and real-time reporting functionalities of SAP HANA. This is achieved by harmonizing and consolidating system landscapes. With this goal, we offer solutions from the hardware layer to the application system layer to simplify the SAP Business Suite landscape, thereby reducing the overall number of systems, reducing data redundancy and replication, and achieving efficient usage of hardware investments.

Application Consolidation Scenario	Virtualization	MCOS "Multiple Components on one System" or Multiple Databases	MCOD "Multiple Components on one Database"	Technical Co-Deployment (Add-on)
Synopsis				
	<p>HANA DBs: Multiple</p> <p>DB Schema: Multiple</p>	<p>HANA DBs: Multiple</p> <p>DB Schema: Multiple</p>	<p>HANA DBs: One</p> <p>DB Schema: Multiple</p>	<p>HANA DBs: One</p> <p>DB Schema: One</p>

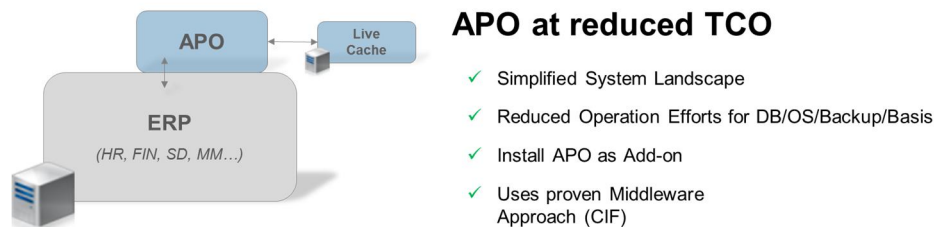
Virtualization allows customers to share physical hardware for multiple SAP Business Suite systems and SAP HANA instances with virtualization techniques. This enables customers to establish or use existing automated operating system and hardware provisioning processes for their specific requirements, and to reduce unused hardware resources.

With **multiple components on one system (MCOS)**, customers are able to install several SAP HANA database instances on a single hardware instance without additional investment in virtualization techniques.

Multiple components on one database (MCOD) is a technical option to run several business applications, with an application server for each application, within one SAP HANA database. The application's data within the SAP HANA database is separated by application-specific DB schema. Using this deployment option in combination with the SAP HANA speed of cross-schema reporting and SAP HANA Live enables customers to reduce side-data redundancy and replication and creates completely new possibilities of real-real time reporting.

Technical co-deployment (add-on) enables customers to run SAP Business Suite components – in particular, SRM and SCM – as add-ons on ERP systems. This dramatically reduces the TCO due to the absence of an entire hardware and software stack.

Example SCM:



Challenges

For all options, a balanced approach between the capabilities and restrictions of the solution in use has to be considered. Questions of hardware performance requirement of the applications and software lifecycle management dependencies have to be taken into account.

Benefits

SAP deployment options offer customers more openness and freedom of choice to configure the SAP Business Suite and SAP HANA layer depending on their existing business system landscape and data center layout.

This approach helps customers to:

- Reduce hardware and operational costs by reusing existing hardware components and operation processes
- Reduce overall hardware and operation costs
- Reduce overall count of systems within the business system landscape
- Reduce replication and data redundancy
- Gain the full power of the SAP HANA in-memory real-real time reporting functionalities
- Free up IT budgets for business innovations
- Increase the speed of innovation

In short, this helps customers minimize the TCO of the overall system landscape, reduce the system landscape complexity, shorten implementation cycles, and allow faster consumption of application innovations to support the business.

Road Map and Outlook

SAP will continue to provide further optimizations and possibilities that help customers simplify their overall system landscape and free up IT budgets for investments in new strategic business innovations.

Further Information

Virtualization:

<http://www.saphana.com/docs/DOC-3334>

MCOD and MCOS:

<http://www.saphana.com/docs/DOC-3477>

Co-deployment:

<http://www.saphana.com/docs/DOC-4185>

High Performance Applications (HPAs)

Current Business Practices/Ambition

The existing technical and enterprise application infrastructure forms the backbone of a business and is crucial for the business success. At the same time customers want to rapidly innovate by leveraging new technology paradigms.

Businesses strive to enable a fundamental change in doing, analyzing, and predicting business.

Challenges

Businesses want to innovate their business processes with next-generation applications, but fear the disruptive nature and cost of such a transformation exercise.

Business Innovation with SAP HANA

High performance applications (HPAs) are designed to provide innovation without disruption – side-by-side, risk-free implementation at low cost.

HPAs provide customers with a choice of deployment options. For instance, the SAP Customer Engagement Intelligence software is built in a way that it can co-exist and run seamlessly with SAP Business Suite or with SAP NetWeaver Business Warehouse. Customers often prefer the so-called side-by-side solution with the SAP Business Suite, having an SAP HANA database and making use of the SAP Landscape Transformation replication server to replicate data from their CRM and ERP system. With this, existing systems remain unchanged and customers gain value immediately without running upgrade projects. This enables a risk-free implementation with low cost and helps businesses drive operational actions from real-time insight in order to stay ahead of competition in their industry.

Competitive advantages

By uncovering the full potential of your data, you can derive new business value.

Innovation in Detail

HPAs are natively built using SAP HANA for transactional and analytical applications, mobility, and cloud, and they deliver tangible business value. HPAs can also be positioned at non-SAP customers, as their capabilities are not limited to SAP data. In detail, these are the capabilities:

- Leverage SAP HANA natively for high-performing analysis on huge amounts of granular data and built-in predictive calculations – all based on data replicated from SAP systems in real-time via SAP Landscape Transformation Replication server
- Insight-to-action: analytics with integrated transactional and collaborative capabilities
- HTML5/SAPUI5 for all UIs with high usability demands, native mobile iPad applications

HPAs manage and analyze Big Data from SAP Business Suite and external data sources. Not only do these applications come with simulation and predictive capabilities, but they combine analytics with transactions to convert insight into action in real time.

How HPAs bridge the transactional and analytical:

- **Latency:** When HPAs run side-by-side, we use SAP Landscape Transformation, a well-known infrastructure component that enables a near-real-time replication of changed data, by using database triggers in the source transactional system. Typical delays are sub-seconds. When running co-deployed with SAP Business Suite powered by SAP HANA, even this short replication is not necessary, as we access the SAP Business Suite data directly in real time.
- **Fidelity:** There are no ETL steps and no precalculated aggregations. We work on fine-granular instance data – for example, all accounts, sales order items, products, and so on. Aggregation and calculations are done on the fly, leveraging SAP HANA capabilities.
- **Insight to action:** In the replication case, HPAs still have all fine-granular information. Thus, we can navigate to the well-known transactions – for example, in ERP or CRM – including context information such as sales order ID, thus implementing a real insight to action. HPAs provide new insights by the above real-time analysis capabilities as well, allowing the creation of follow-up documents in the source systems – for example, new target groups for subsequent marketing activities.
- **Low cost and simplicity:** If HPAs are co-deployed with SAP Business Suite powered by SAP HANA, additional TCO is minimal, since HPAs create only a small additional footprint in the customer landscape. Even when running side-by-side, HPAs do not imply any disruption to the existing landscape. We run parallel with SAP ERP 6.0 and SAP CRM 7.01 or higher. We also have a cloud offering – SAP HANA Enterprise Cloud – which customers can connect to their existing systems.

Benefits

HPAs provide a high value to customers and come with following key capabilities and benefits:

- Manage, analyze, join, calculate on Big Data
- Provide simulation and predictive capabilities
- Combine analytics with transactional data to convert insight immediately into action
- Innovate by superior user experience leveraging HTML5, including social collaboration capabilities
- Adopt in a risk-free, nondisruptive side-by-side mode and deploy on-premise or in the SAP HANA Enterprise Cloud
- Quarterly deliveries – low TCO and push continuous innovation

How to Get Started

The SAP Customer Engagement Intelligence solution, including all three scenarios Audience Discovery and Targeting, Customer Value Intelligence, and Social Contact Intelligence, as well as SAP Fraud Management for internal and external fraud detection, can be sold and implemented on-premise or in the cloud without any restriction or approval process.

For SAP Customer Engagement Intelligence and SAP Fraud Management, three different offers are provided:

- **Free trial use:** Allows customers and prospects a great try-before-you-buy experience. They can easily explore our applications and learn about its features and user experience without spending a cent. The trials are fully configured and prepopulated with demo data for an immediate start. They will be available on SAP HANA Marketplace soon.
- **Prototyping:** Allows customers to pilot the applications with their business data within a couple of days.
- **Productive use:** Allows customers to run the applications in productive mode, including data connectivity to customer systems in both directions, in a fully-managed cloud environment. This drastically lowers TCO for our customers.

Several customers already run HPAs in the cloud.

Watch the 3 min overview video of Customer Engagement Intelligence powered by HANA: <http://www.youtube.com/watch?v=DvUCWVM6ank> or Accelerated Trade Promotion Planning powered by HANA: <http://www.youtube.com/watch?v=oKQTCC5xpBM>

Have a look at the demo for Fraud Management powered by HANA: <http://www.youtube.com/watch?v=KZkqG0oppYY>

CMP29546 (14/02)

© 2014 SAP AG or an SAP affiliate company. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP AG or an SAP affiliate company. SAP and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG (or an SAP affiliate company) in Germany and other countries. Please see <http://www.sap.com/corporate-en/legal/copyright/index.epx#trademark> for additional trademark information and notices. Some software products marketed by SAP AG and its distributors contain proprietary software components of other software vendors.

National product specifications may vary.

These materials are provided by SAP AG or an SAP affiliate company for informational purposes only, without representation or warranty of any kind, and SAP AG or its affiliated companies shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP AG or SAP affiliate company products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

In particular, SAP AG or its affiliated companies have no obligation to pursue any course of business outlined in this document or any related presentation, or to develop or release any functionality mentioned therein. This document, or any related presentation, and SAP AG's or its affiliated companies' strategy and possible future developments, products, and/or platform directions and functionality are all subject to change and may be changed by SAP AG or its affiliated companies at any time for any reason without notice. The information in this document is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. All forward-looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from expectations. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of their dates, and they should not be relied upon in making purchasing decisions.

