



Embedded Analytics in SAP S/4HANA and SAP Fiori

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SAP S/4HANA Embedded Analytics and SAP Fiori offer huge potential for your company. Reap the benefits of real-time operational data reporting directly in SAP S/4HANA, and push the limits of your analysis!

Business areas

Finance, purchasing, manufacturing, marketing, sales, logistics and distribution, human resources and many more

Business processes

Order-to-cash, record-to-report, plan-to-produce, procure-to-pay and many more

Platform/software

SAP S/4HANA, SAP Fiori

Features

- Real-time access to operational data
- Quick and easy modelling of queries and consumption of information
- Numerous expansion and development options in reporting
- Models can be reused in analytical applications
- Analytics integrated into business processes

Are you looking for a way to make a forward-looking and sustainable digital transformation in your company? Do you want to make a leap forwards on the path to real-time business? Have you already heard a lot about new technologies such as SAP S/4HANA, but you don't know how to profit from them? We at PwC are here to help, serving as your guide on the best path towards a digital future.

SAP S/4HANA Embedded Analytics serves as a supplement to other SAP business intelligence (BI) tools, such as BW/4HANA or the Analytics Cloud, and offers a wide range of benefits for your company:

- Real-time access to operational data at the touch of a button creates a whole new basis for decision-making
- Automatic creation of cross-company views saves time and costs in analysis
- Quick and easy modelling of queries
- BI self-service functions mean more agility for business departments and less work for IT departments
- Flexible report queries and the ability to drill down to document level give higher-quality information than with conventional enterprise resource planning (ERP) reports

Potential uses of SAP S/4HANA Embedded Analytics

Embedded Analytics offers powerful, real-time operational reporting on the latest data, whether this is industry-specific data or information from ERP, supply chains, customer relationship management, or governance, risk management and compliance. This makes it possible to produce meaningful results in real time, directly in SAP S/4HANA.

SAP S/4HANA Embedded Analytics can even offer powerful reporting if you don't consolidate data or you don't have a data warehouse. Our specialists can provide you with efficient, user-friendly access to operational data with the new SAP Fiori user experience and other SAP BI tools, such as the SAP Analytics Cloud and SAP BW/4HANA.

Against this backdrop, we firmly believe that SAP S/4HANA Embedded Analytics will form the basis for all future analytical applications from SAP that are based directly on ERP system data (rather than on data warehouses). As long-standing reporting experts, we recommend using Embedded Analytics to supplement your data warehouse, especially if any of the following apply to your company:

- Real-time operational data is required for optimal decision-making within business processes
- Significant delays occur in providing operational data in your data warehouse
- Your data warehouse is not set up to directly provide data
- Providing data – e.g. for ad-hoc reporting – would be too complex or expensive

Reporting and analysis with SAP S/4HANA Embedded Analytics

Embedded Analytics enables you to work more efficiently and reduce the total cost of ownership by working on one technology stack and using one user interface. Embedded Analytics offers:

- Out-of-the-box analytics solutions
- Real-time operational reporting
- Insights for immediate action
- Role-based user experience with SAP Fiori
- Preset and extendable virtual data models
- A single platform for transactions and analytics

The analytical functions are integrated within the business processes, increasing the efficiency of processing. Traditionally, transactions and analytics are processed separately – but in reality, business processes often form a sequence: transaction, analysis, transaction.

SAP S/4HANA Embedded Analytics and SAP Fiori provide access to the data you need at any time and from any device – mobile or desktop. Many different SAP Fiori apps are available, linking analysis, communication, harmonisation and processing activities. This is the core of the “insight-to-action” principle, as illustrated in Figure 1.

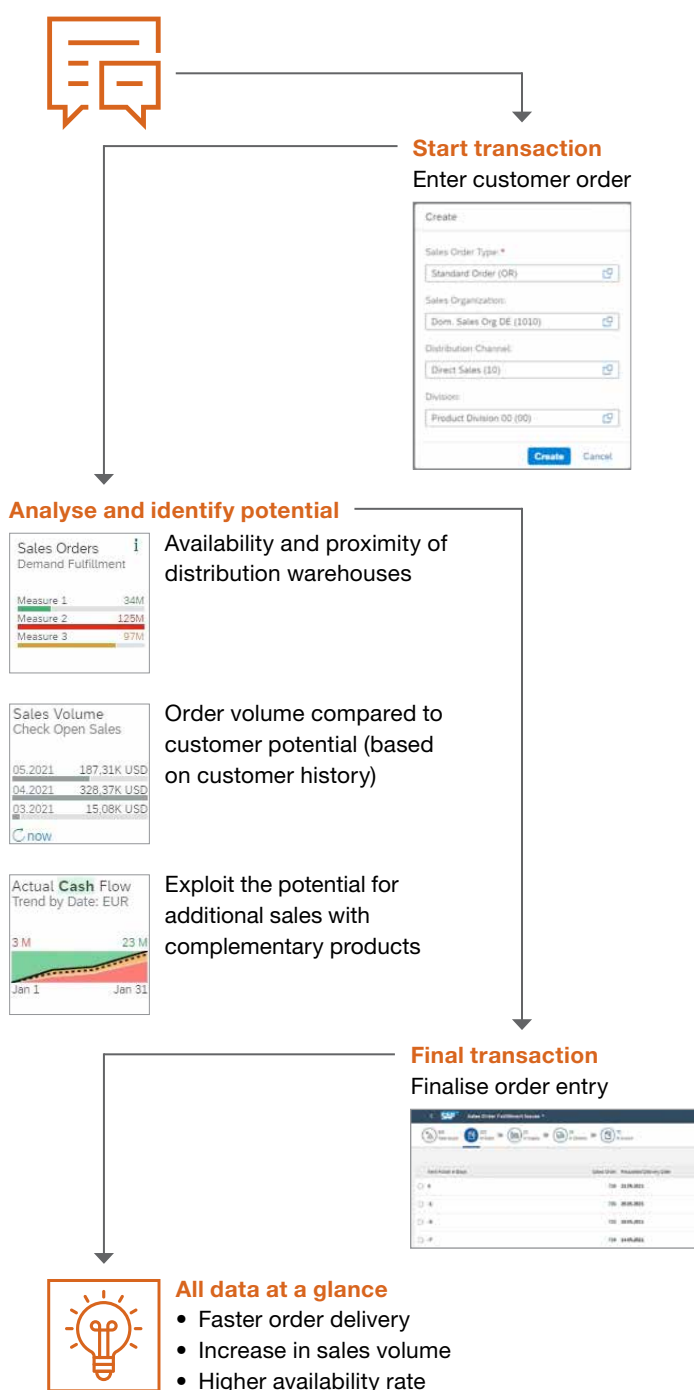
This clear structure enables users to perform tasks such as directly managing sales activities while already on the way to the customer, or carrying out integrated approval and clearance procedures in material procurement.

Intelligent SAP Situation Handling within S/4HANA

Situation Handling is a function that lets you know when a “situation” arises – a problem, for example. This provides frequent information about opportunities, exceptional events, or problems. A situation might be a contract that's about to expire, a task that needs to be processed, or a change in demand for a product.

Different technologies can be used to provide information to each user: SAP Fiori Launchpad notifications, in-app situation indicators and messages, email notifications and the My Situations Fiori App. Wherever possible, solutions are provided together with each situation. You can either make decisions directly, or use app-to-app navigation to go to the document and resolve more complex issues. SAP Best Practices delivers ready-made scenarios for each situation, which can be individually adapted; or, alternatively, completely new scenarios can be developed.

Insight-to-Action-Principle



Implementation and use

SAP S/4HANA includes Embedded Analytics, offering a consistent set of analytic capabilities for both the cloud and the on-premises versions of S/4HANA. Embedded Analytics can easily be integrated with other analytics solutions such as SAP BW/4HANA, SAP Analytics Cloud, other SAP tools and third-party tools. There are also various other tools available for end users, key users and IT users.

End users: analyse data and act on findings

The **Query Browser** enables end users to create ad-hoc reports based on SAP ABAP Core Data Services (ABAP CDS) views.

Multidimensional reporting includes functions for quick exploratory analysis. This enables you to carry out ad-hoc filtering, pivoting, sorting and reordering of data, in either tabular or graphical form.

Overview Pages provide end users with dashboards in the form of analytical cards for various functional areas. These cards enable you to draw insights from the big picture, helping you to understand relationships, processes and master data to make decisions faster.

SAP Smart Business KPIs enable end users to work in a role-based way to make faster and better decisions. Smart Business KPIs allow comparisons of different key figures, with navigation via mini-tiles or even direct navigation to transactions and other apps.

Preconfigured apps based on SAP Fiori provide immediate and transparent access to information through KPI cockpits, but they can also be modified and extended to perfectly suit your needs.

The **Analysis Path Framework (APF)** provides reuse components which end users can use to develop and improve interactive analytical web applications. The framework also allows the factors influencing KPIs to be analysed using drill-down functions in multidimensional representations, and much more.

Analytical SAP Fiori apps provide real-time insights into the operation of your business by displaying key metrics directly in the Query Browser. This enables end users to react immediately to changes in the market or operations.

Key users enable end users

Smart Business KPIs in SAP Fiori allow end users to easily monitor key values, using KPI visualisations. KPI visualisations use different colours to indicate their status, based on preset target values and threshold values. These KPIs are configured and visualised in the **Manage KPIs and Reports** Fiori App.

Several **custom Fiori apps** are available, enabling key users to lay the foundations for new KPIs and reports, especially those featuring ABAP CDS views. No in-depth programming knowledge is required to use these apps, as most steps are simple drag-and-drop operations.

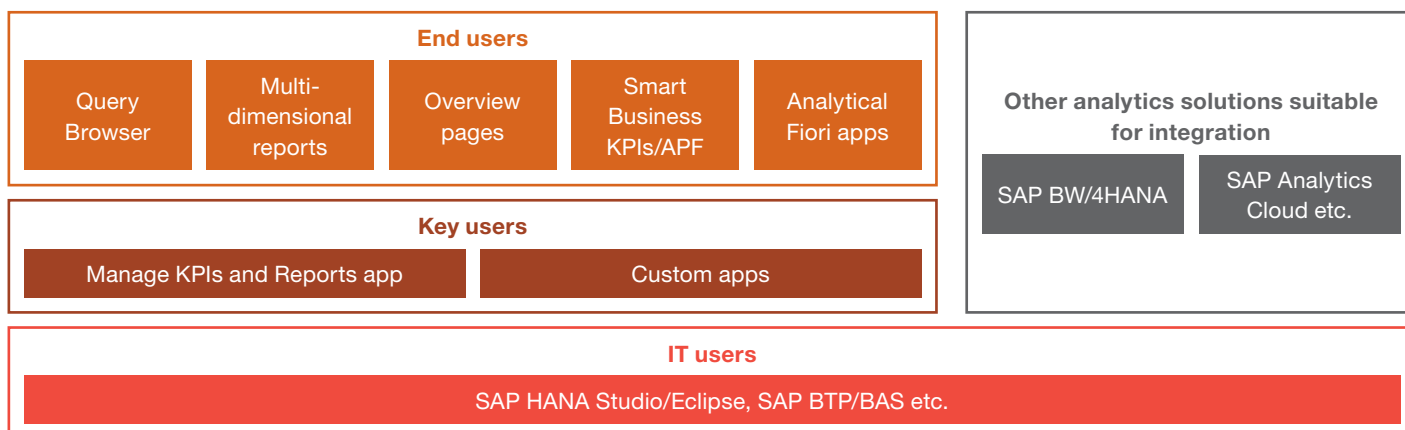
These apps include Custom Business Objects, Custom Fields and Logic, Custom CDS Views and Custom Analytical Queries.

IT users provide central data pools in virtual data models consisting of ABAP CDS views

For real-time operational reporting, SAP S/4HANA uses SAP ABAP CDS views. These views display content as virtual data models, based on the transaction and master data tables of SAP S/4HANA. ABAP CDS views are developed in the ABAP layer of the SAP S/4HANA system, and are maintained and enhanced with apps such as **SAP HANA Studio** or **Eclipse**. In order to read and transform the data within the SAP HANA database layer, the system creates SQL runtime views in SAP HANA.

There are also many other development options available to IT users via the **SAP Business Technology Platform (BTP)** and **SAP Business Application Studio (BAS)**. For example, IT users can access SAP Fiori Elements – app templates for developing new SAP Fiori apps.

SAP S/4HANA Embedded Analytics tools for end users, key users and IT users



Our services

As reporting and analysis experts, we are perfectly placed to help you gain all the benefits offered by SAP S/4HANA Embedded Analytics and SAP Fiori. With in-depth BI knowledge, PwC is the ideal partner for setting up real-time operational reporting in your company.

We can both advise you on introducing SAP S/4HANA Embedded Analytics and SAP Fiori, and implement solutions to meet your specific needs. Our services include:

- Carrying out a value assessment to show potential uses and benefits
- Implementing SAP S/4HANA Embedded Analytics and SAP Fiori apps
- Providing the most up-to-date operational data possible
- Demand-oriented extension of queries, based on SAP ABAP CDS
- Connecting mobile apps, other SAP apps or third-party tools
- Linking your data warehouses with such as SAP BW/4HANA

We develop solutions to process the complex data in your company quickly and on a large scale, enabling you to gain important information and insights. We run workshops where our data analysts explain the benefits of accelerated, large-scale data analysis. Making real-time data available and developing new analytical processes to evaluate it can help open up new opportunities for better control and increased automation of processes in your company.

Agile reporting

Our specialists are here to help you optimise your reporting setup, working together with you to design preset reports and analyses that your employees can use directly. These self-service functions mean that your specialist departments can carry out agile reporting independently of your IT function. We can also build individual solutions and expand your queries according to your company's specific needs.

If you'd like to find out more about reporting tools, we'd be very happy to hold a workshop for your company so that you can find the ideal solution for your users and analysis.

From business intelligence to data analytics

Working together with you, we can transform your analysis and planning processes. Our advisory services cover the introduction and use of new analytics solutions (e.g. simulations, predictive analytics), enabling you to do more: instead of just investigating the past, new analytics solutions allow you to optimise control of your business processes in real time.

Taking things one step further, we can also help you forecast the future development of your business. To do this, we include text analysis and prediction functions in your system – these are tailored to your company's needs, and they show you possible alternative courses of action to suit your business model.

Maintaining your investments in existing systems

Depending on where you're starting from, parts of your existing systems can sometimes continue to be used alongside a new system such as SAP S/4HANA. Reporting in a transactional system always shows current data, but doesn't fully cover many of the functions of a data warehouse.

Data warehouses make it possible to harmonise data from several source systems, to historicise data or to carry out analysis of long-term strategic trends. If you want to do this and also exploit the full potential of your opportunities in the future, hybrid solutions are the ideal choice, using systems such as SAP S/4HANA, SAP BW/4HANA, SAP Data Warehouse Cloud and SAP Data Intelligence. Our experts will examine which variant is right for your company.

Our expertise

Our SAP-certified consultants and strategy experts specialise in using SAP in-memory solutions – from SAP ERP and Business Warehouse to SAP S/4HANA and SAP Fiori – in a wide range of industries. This means that you'll benefit from our expertise and experience gained over more than 1,000 successful BI projects, and from our instinct for future trends – but you'll also be able to maintain complete focus on your core business.

We offer a one-stop shop for holistic consulting services, from strategy through execution. Our services range from management and strategy consulting, right up to design and implementation – because a strategy can only lead to success if it's effectively implemented.