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SAC vs. Power BI

Optimize your data analysis with the right tool

With so many reporting products available from different software vendors, it can be difficult to choose the right tool for your organization. The challenge is to find a reporting strategy that takes into account the underlying system landscape and the company's goals, and to find a solution that supports management decisions. To help you make this decision, here is a comparison of SAP Analytics Cloud and Microsoft Power BI.



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What is Microsoft Power BI?

Microsoft Power BI is a cloud-enabled analytics tool that is a collection of software services, applications, and connectors that enable business users to perform self-service data discovery and analysis without the need for IT support. It is known for its strong end-user appeal and low entry price. Strengths include Power BI's attractive dashboards with broad data connectivity, while a variety of underlying platforms remains a weakness.

Typical deployment scenario:

Data models and reports are built locally using the Power BI desktop. They are then consumed by the cloud-based Power BI service, enabling the creation of dashboards and supporting collaboration in dedicated environments. Alternatively, reports can be built directly in the cloud using Power BI Service. This typically involves replicating the data models in the cloud. Microsoft strongly recommends that data copies be made available directly in the cloud for performance reasons. Although real-time connections are available, they are associated with longer load times due to recurring queries to SQL databases. Another reporting option is the Power BI Mobile APP, which is available for iOS, Microsoft, and Android operating systems.

Power BI products include:

Microsoft BI Product	Feature
Power BI (Individual, Pro, Premium)	Ad-hoc reports, dashboards, and datasets - some of which can be created
Power BI Desktop (On-Premise ¹)	Creation and data visualization
Power BI Mobile	Mobile access via IOS, Microsoft or Android devices
Power BI Report Server (On-Premise)	Organization, access authorization and updating of reports as needed
Power BI Embedded	Embedded analytics via JavaScript SDK and REST APIs
Power BI Service (SaaS²)	Work interactively and collaboratively with reports, dashboards, and datasets in dedicated environments
Power BI Report Builder	Paginating reports

¹ Server-based software that is operatedon own or rented hardware in the own data center.

² Software-as-a-Service (SaaS) defines one of four layers of cloud computing. It involves providing the end user with access to applications in the cloud.

What is the SAP Analytics Cloud?

SAP Analytics Cloud (SAC) is a SaaS offering from SAP. It is based on the Business Technology Platform (BTP) and is available as a standalone edition or embedded in BTP-based solutions. The standalone version is required to use the full functionality of SAC. SAP's hybrid approach with SAP Analytics Cloud allows customers to preserve their investment in SAP BusinessObjects. At the same time, end users benefit from the cloud innovations of SAP Analytics Cloud, including live connectivity to SAP HANA.

Typical application scenario:

Raw data is provided by live connections to SAP HANA systems (e.g. SAP BW/4HANA or SAP S/4HANA) in the SAC as a data source. In this case, the data sets are not replicated in the SAP Analytics Cloud. Due to the SAP HANA database, performance limitations caused by repeated queries to the database are not noticed by the end user. The datasets or models can then be drilled down for ad hoc analysis in Data Analyzer and saved as insights. Alternatively, the data sources can be visualized in stories that are consumed by tables, text, images, and charts. For presentation purposes, the stories can be used directly or implemented in dashboards in the Digital Boardroom.

Features include:

SAC feature	Description
Stories	Guided application scenarios using tables, texts, pictures and diagrams
Analytic Applications	Develop a guided data analysis in the form of an application. Can be integrated in HTML-based web interfaces or in the SAC IOS APP
Data Analyzer	Ad hoc analyses based on live connections or SAC models
Digital Boardroom	Real-time interactive boardroom presentations.
Data sets	Prepare raw data with a flexible table format.
Modeler	Prepare raw data with a structured view.
Forecast scenarios	Answer business questions with forecasts. (Classification, regression scenarios and time series forecasts).
Calendar	Supports collaborative work by creating tasks and processes.
Planning	Planning functions within the services that support corporate goal setting, strategic planning and budgeting in forecast scenarios

What are the requirements?

To compare the two solutions, the following are requirements for an enterprise reporting tool. The focus is on data source connectivity, visualization, and advanced analytics. Various SAP systems such as S/4HANA or BW/4HANA and the database management system Oracle DB are used as data sources for the analysis.

Connection to data sources

Both Power BI and SAP Analytics Cloud can connect to data sources in real time or import files directly, for example, as a CSV file or from a database. When data is imported, it is replicated and stored in the solution. With a real-time connection, the data remains in the source system and is only retrieved for a defined purpose. Real-time connections are realized through live connections in SAC and through DirectQuery in Power BI.

SAP Analytics Cloud is strongest in real-time connections to SAP systems. Microsoft Power BI is limited to Oracle DB - real-time connection to SAP systems is not supported. Data import, on the other hand, is comprehensive in both solutions. Data can be imported into the analysis tools from operational applications and databases, as well as from CSV or Excel files.

		SAP Analytics Cloud	Microsoft Power BI
Real-time connection			•
Data import		٠	٠
Full	Comprehensive with restrictions	Extensive	Not supported



Visualization capabilities

Analyzing data on demand requires standardized reports that contain all the necessary information and are visualized in an understandable and appropriate way. Power BI and SAP Analytics Cloud provide users with self-service capabilities to create reports with different visualization capabilities based on predefined data models. In addition to visualization standards such as bar charts or time series graphs, the international activities of many companies require geographical analysis of company data. Value driver trees, a tool for defining the interrelationships and effects of different value drivers in the company, are also an important feature for innovative reporting.

Both SAP Analytics Cloud and Microsoft Power BI support all common visualization methods.

Geographical visualization of enterprise data in SAP Analytics Cloud is limited to ESRI³ Charts in Custom Widgets for SAP Analytic Apps and Area Cartograms (Heat Map Layer), Symbol Maps, and Flow Maps in Stories. Microsoft Power BI offers ESRI ArcGIS⁴ for Power BI in online environments and Shape Maps in Power BI Desktop, Area Cartograms in both Power BI Desktop and Power BI Service. You can also use the Azure Maps Power BI Visual service. Additional licenses are required.

SAP Analytics Cloud is IBCS⁵ certified. This is primarily reflected in the predefined templates that can be used for development in stories. Microsoft Power BI does not follow a standard.

		SAP Analytics Cloud	Microsoft Power BI
Standard visualizati	on	•	•
Geographical visualization		•	
Notation concept		•	0
Value Driver Trees		•	•
Full	Comprehensive with restrictions	Extensive	Not supported



³Environmental Systems Research Institute is a software producer of geographic information systems.

⁴ ArcGIS is a SaaS offering from the ESRI company and allows users to create interactive web maps.

⁵ International Business Communication Standards. This is a standard for the conceptual, perceptual and semantic design of business communication.

Augmented Analytics and Planning

Machine learning and natural language processing can be used to automate analytical processes and improve the user experience. This promotes the self-service approach by allowing users to easily interact with the application in their local language, and saves resources on developing complex analytics processes. In addition to planning capabilities, forecasting scenarios can provide information about possible customer activities or product developments. In addition, automated report generation or automated analysis of specific metrics can support the goal of self-service.

With Search-to-Insights, information can be searched across all data in the SAP Analytics Cloud using natural language. Simple queries such as "revenue by product for the current fiscal year" are answered by SAC with meaningful charts. Microsoft Power BI also supports natural language processing with the Q&A feature. SAC fully supports forecasting with classification, regression and time series forecasting. In addition, complex planning processes can be mapped in collaborative work steps. This is the greatest strength of the SAP Analytics Cloud. It provides comprehensive tools for planning strategic business goals and can also support operational processes. Microsoft Power BI, on the other hand, is limited to time series forecasting and does not offer planning capabilities

With Smart Discovery (SAC) and Insights (Power BI), both analytics tools provide automated reporting capabilities. Data sets are analyzed and visualized in appropriate formats. Automatic analysis of key figures is also possible in both SAP Analytics Cloud and Microsoft Power BI.

		SAP Analytics Cloud	Microsoft Power BI
Natural language processing		٠	٠
Forecast scenarios	and planning	٠	•
Automated report generation		•	•
Automatic key figure analysis		•	•
Full	Comprehensive with restrictions	Extensive	Not supported





Conclusion and Recommendation

Looking at system landscapes where SAP S/4HANA or SAP BW/4HANA are deployed, the benefits of SAP HANA technologies can be leveraged with live connections to SAP Analytics Cloud. Data would not be replicated to the cloud and would be kept exclusively in local databases. The user can view the data in real time and independent of the device.

In complex analytics scenarios, value driver trees are often insufficient or provide limited insight. Augmented analytics technologies such as Smart Insights, Smart Discovery, or Search-to-Insights improve the quality of reporting and the user experience. In addition, the SAP Analytics Cloud can map classification and regression predictions in forecasting scenarios, in addition to time series predictions, and offers decisive advantages in budgeting or production planning with its innovative planning functions.

SAP Analytics Cloud is also recommended as a standalone self-service product to streamline the system landscape and reduce administrative overhead. However, this would require a large number of Power BI platforms (Power BI Service, Power BI Desktop, Power BI Report Server), which in their entirety would provide the desired result of an innovative reporting platform.

Therefore, abat recommends the use of the SAP Analytics Cloud and supports you in all aspects on your way to the cloud and to the SAP standard.

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