Make AI Work for Your Business!

rrespective of how advanced a technology is, it is valuable only when it addresses specific business needs, drives transformation, and makes a real impact by integrating seamlessly into business workflows without adding IT complexities. Artificial Intelligence (AI) has been one such transformative tech that has made strides in a rapidly evolving business landscape. However, with each organization having unique business requirements, there is no one-size-fits-all approach to AI solutions.

"Relevance" is the most pertinent challenge that organizations face with AI, and while "general-purpose" AI models can work well in broader contexts, the specificity that is needed to make a transformative impact in industry-specific applications is often lacking. Unique business requirements necessitate tailoring AI and ensuring that it meets specific business needs and objectives.

The SAP Business Technology Platform (SAP BTP) addresses that need for relevancy by enabling the infusion of business context into AI scenarios. SAP BTP offers easily accessible large language models (LLMs) and allows organizations to develop custom AI solutions relevant to their business needs. With SAP BTP, organizations can build custom AI solutions that address specific business challenges, be it improving supply chain visibility or transforming customer service with AI-driven support.

Robust data foundation for robust AI

At the core of this capability is SAP BTP's data management foundation, which uses SAP Datasphere and HANA Cloud to model, organize, and securely manage data from across the enterprise. This data layer structures the enterprise information, enabling AI and large

language models to be trained on business-specific data, allowing them to respond to business-specific questions accurately. To further enhance AI's potential, SAP BTP offers powerful tools like Joule and the Generative AI Hub, which facilitate natural language interactions, enabling employees to easily query AI for specific insights relevant to their roles.

The Vector Engine in SAP HANA, a part of SAP BTP, supports advanced analytics by processing complex data relationships, while the Knowledge Graph maps connections across disparate data points, adding contextual depth to AI insights. Together, these tools within SAP BTP create an intelligent ecosystem, allowing AI to deliver actionable insights, streamline decision-making, and drive efficiency throughout the organization.

By integrating Large Language Models (LLMs) with SAP BTP, enterprises can reveal critical insights unique to their business and not just by using general-purpose AI capabilities. However, most LLMs, such as the ones from OpenAI are only trained on significant amounts of public data, which often lacks the industry-specific "context" or nuances to a business. As Neeraj Upreti, Senior Partner Advisor & Solution Specialist at SAP

emphasizes, "It is crucial to remember that LLMs were trained on Internet data available up to a certain point, they are never truly "real-time" and rely on historical data, much like the Internet itself. However, users today, particularly those in enterprise settings, need data from their enterprise applications—such as SAP Cloud ERP—integrated into their workflows. Now, instead of manually typing or interpreting this data, modern architectures allow for LLMs to function as natural language querying tools. They can interpret what users type or speak, decode that input, and send it to a back-end that is prepared for LLM interaction."

SAP BTP bridges this gap by allowing the customization of LLMs in line with enterprise environments with which organizations can manage industry-specific jargon or types of business queries and navigate through SAP system processes. AI can interpret and retrieve precise, contextually relevant information directly from the ERP system while SAP BTP ensures enhanced data security by managing how LLMs interact with enterprise data. Rather than direct access, the LLM functions within BTP's secure data management layer, allowing organizations to maintain control over sensitive information and ensuring that only authorized users can access specific data insights. This tailored approach combines the power of LLMs with SAP's robust data governance, creating a secure and intelligent AI solution for your business.

AI in Business Needs to be Reliable | Comprehending Business Context

How SAP Business AI comprehends business context
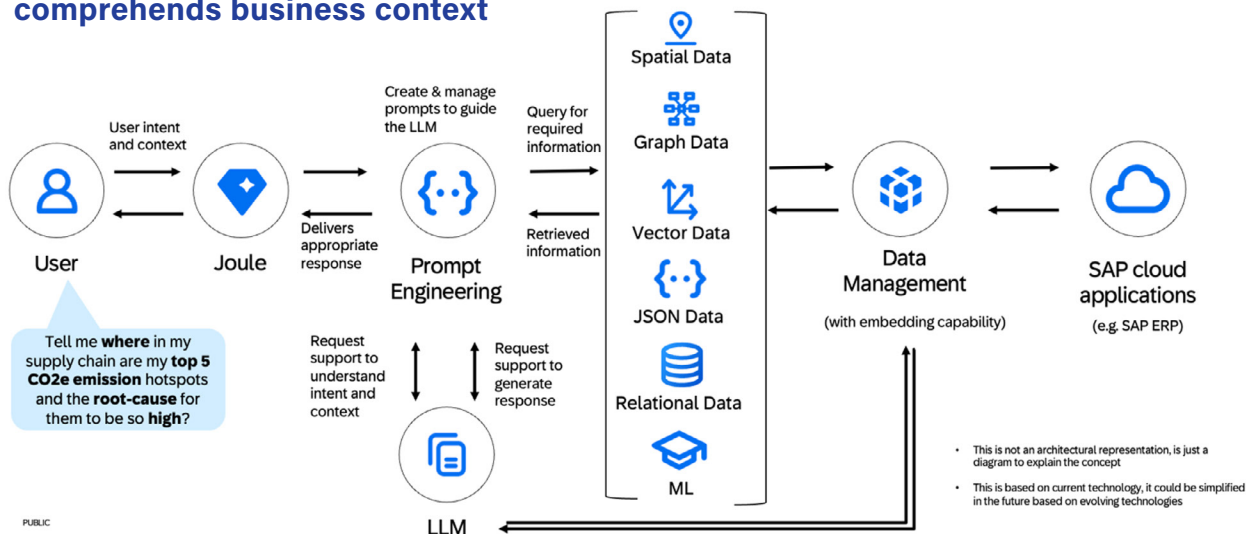
SOURCE: SAP AI

A secured approach to accessing enterprise data

In a typical AI scenario, the user journey starts when a user asks a question through a digital assistant or a comparable interface. This question or a query starts a prompt engine that traverses the complexities of the ERP system guided by an advanced data management layer to analyze data while accessing it in a secure manner to answer the query.

However, instead of directly interfacing with the ERP system, the trained LLM interacts with data within SAP Datasphere and HANA Cloud. Data management protocols specify the ERP data segments accessible to each user, based on their security clearance, ensuring data privacy and strengthening AI's efficacy in delivering relevant responses. Supported by HANA vector engine, the model goes beyond the standard analytical capabilities, interprets data relationships, and manages complex queries.

Terry Penner, Marketing and Solutions, Business Technology Platform at SAP, emphasizes, "The prompt engine connects the question to the right data. However, since the LLM is trained in the cloud, security concerns will prevent it from directly accessing the ERP system. This is where the data management layer, supported by SAP BTP, is essential. With tools like Datasphere and HANA Cloud, SAP manages data access by building a model from raw transactional data, which the LLM can then use for training. Additionally, the vector engine, part of SAP HANA, identifies and interprets relationships between different data points. In essence, this layered approach combines secure data management, advanced processing, and intelligent modeling to deliver the insights users are looking for—all while ensuring efficient and controlled access to enterprise data."

An example that demonstrates this relates to payroll queries. If an employee needs to know the details about deductions on the pay slip, the LLM can securely retrieve specific data from the payroll system, tailored to the individual's access rights.

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For more intricate queries, such as analyzing deductions over time, the vector engine's similarity search feature can generate swift and accurate responses. The framework even allows for specific comparisons, such as asking how deductions differ from January to now. Since the data is vectorized, similarity searches occur within the vector engine and data management layer, without exhausting ERP resources.

This also allows for integrating enterprise policy documents within the data management layer on the vector engine. For instance, if a user asks about their vacation days, the system retrieves that information from cloud ERP or SAP SuccessFactors. However, if they ask about vacation policies, which are not typically stored in ERP systems, the retrieval-augmented generation (RAG) capability within SAP BTP vectorizes policy documents and sends the relevant information to the user with a link for further exploration.

Using the HANA vector engine, **RAG capabilities**, and generative AI, transforms LLMs into enterprise-focused tools and enhances their ability to handle business-specific queries in ways that were previously not possible in the LLM landscape.

AI is still evolving

SAP is continually innovating its AI capabilities within SAP BTP, delivering sophisticated, context-aware, and actionable insights, fueled by technologies such as the vector engine, knowledge graphs, and seamless integration with cloud-based ERP systems. Now, users can also extend SAP S/4HANA and other business applications by using Joule's generative AI capabilities and build business custom apps and processes efficiently, all without compromising on security and governance.

For SAP, AI is not only a tool that supports decision-making, but it is embedded into the fabric of business operations. Leveraging natural language processing, intelligent data management and secure access to AI models in SAP BTP allows companies to use the full extent of what can be done with AI. This enables the AI implementations to be not only personalized and secure, but also incredibly efficient — ultimately changing how we interact with these systems in our business processes and decision-making frameworks.

Discover how SAP BTP enriches user interactions with AI and automation **here**.