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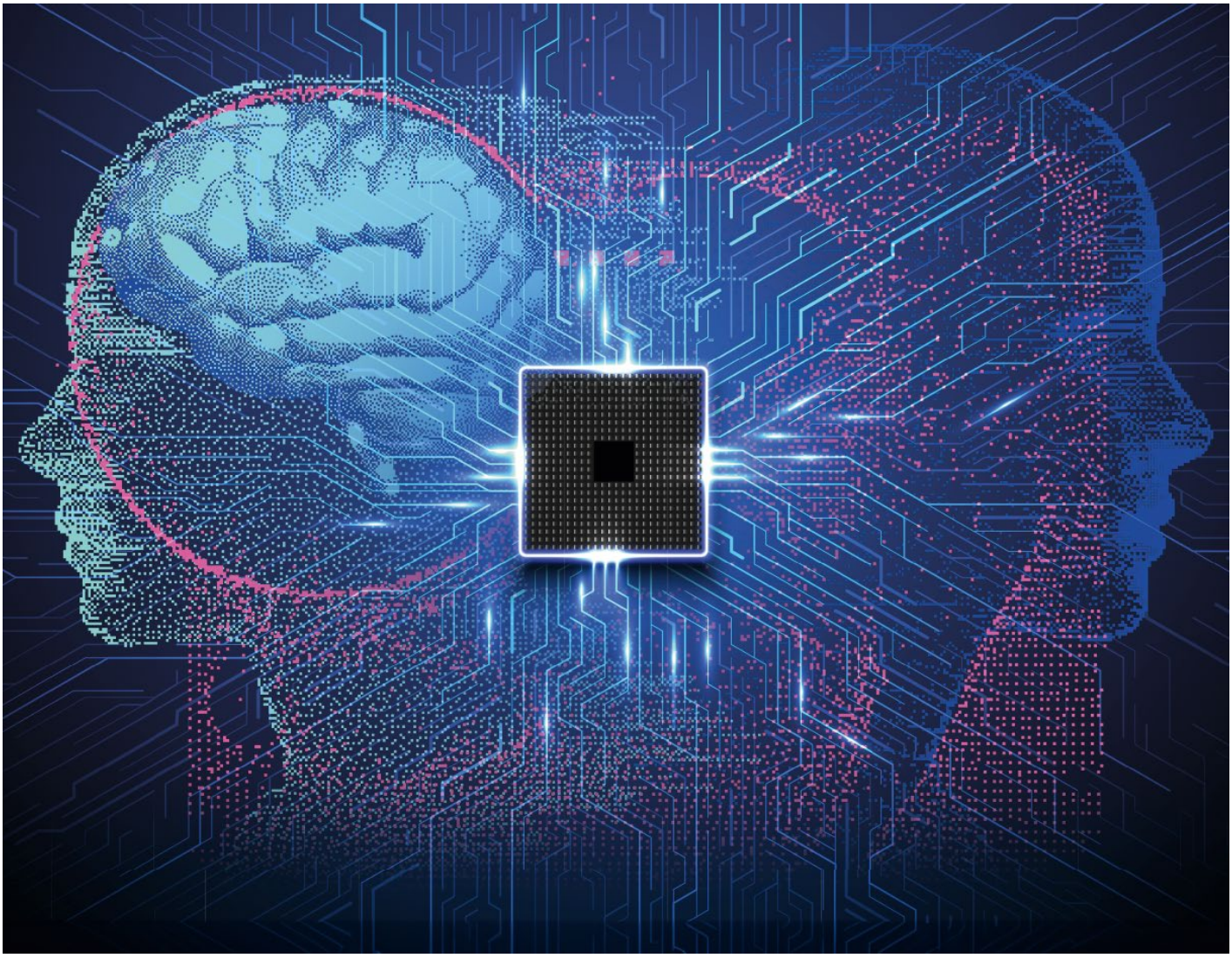

Future visions of enterprise performance in an age of generative models

How data analytics and reporting will be transformed in an age of Generative AI

Introduction

In this post, we will explore the revolutionary potential of generative models in transforming data analytics, business reporting and enterprise performance, specifically within the context of SAP. We will discuss the distinctions between generative and predictive models, as well as future applications, and provide visions of how generative AI can radically change the lifecycle of data from its creation, through value extraction, to its retirement.

Keywords: Generative models - Artificial intelligence - Data analytics - Enterprise performance

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Generative Models

Generative models are a type of artificial intelligence (AI) that are designed to create new data based on patterns learned from existing data. Unlike traditional predictive models that are used to make forecasts about future outcomes, generative models can be used to create entirely new data that has never been seen before.

To give an example, imagine that you have a dataset of customer orders from an online store. A predictive model might be used to analyze the data and predict which products are likely to be popular in the future, whereas a generative model could be used to create entirely new products based on the patterns learned from the data.

Generative models can be applied to a wide range of data types, including images, text, and even music. They are particularly useful in situations where there is a large amount of data available for patterns to be learned. Examples of generative models in use today include DALL-E, Midjourney, ChatGPT, LaMDA, AIVA, and Amper, among others. These models have shown impressive capabilities in creating realistic images and generating insightful and persuasive text. But how has this technology intersected with enterprise data and analytics?

Overall, generative models have the potential to revolutionize the way businesses approach data analysis and decision-making, and SAP is in a key position to bring this AI revolution to businesses. But how can we leverage these models for business applications? What does the future hold for enterprise performance in an age of generative models?

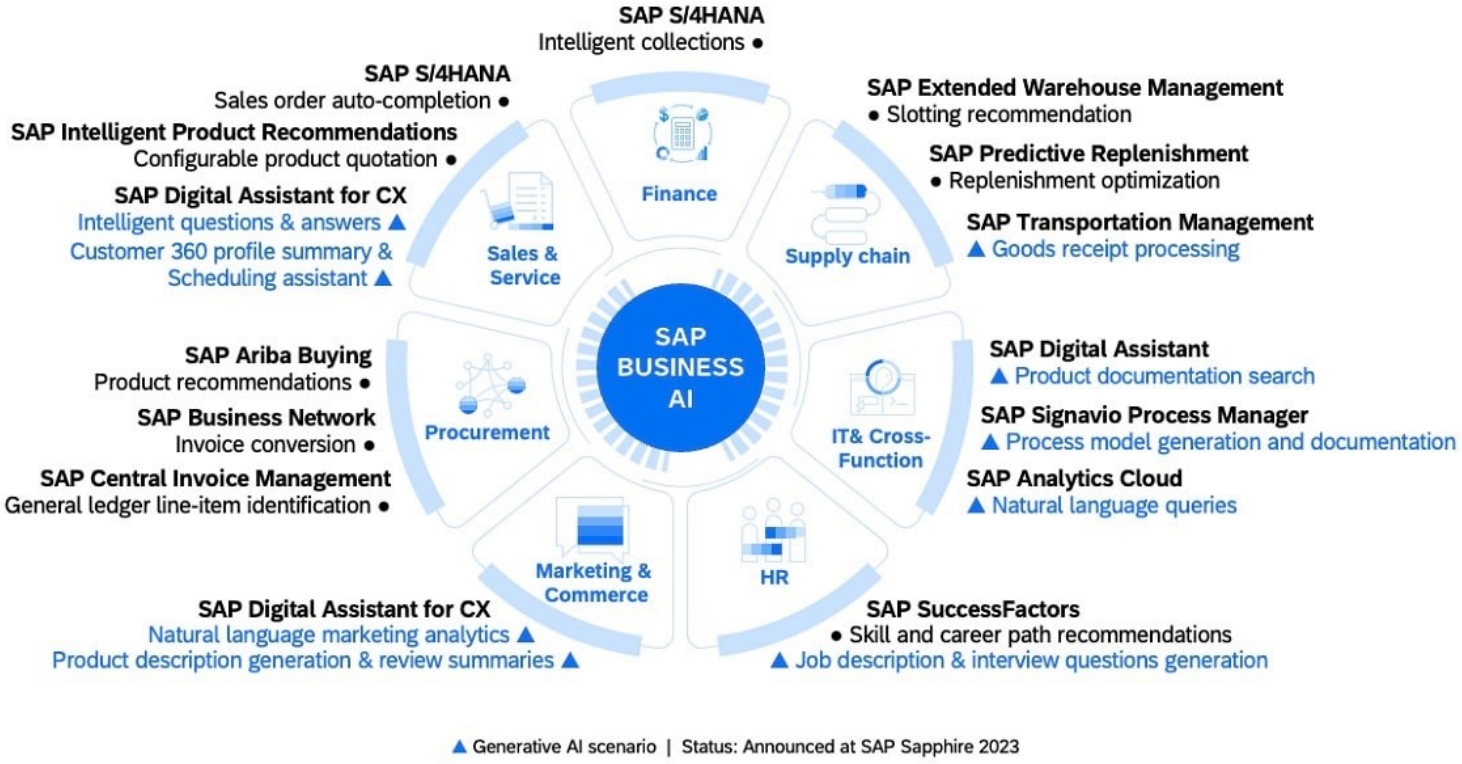
Enterprise Performance and the Future of Data

What is in the SAP pipeline?

As recently announced at SAP Sapphire 2023, SAP will be heavily investing in AI capabilities across different business functions. It is starting by introducing generative AI capabilities in SAP SuccessFactors Recruiting and intelligent slotting in SAP Extended Warehouse Management. AI is also utilized in procurement with intelligent invoice conversion in SAP Business Network and guided buying capabilities in SAP Ariba Buying. Intelligent collections in SAP S/4HANA also promise to transform finance operations, while SAP Digital Assistant will provide tailored AI-enabled assistance. These features, depicted in Figure 1, have the potential to enhance productivity throughout a business.

Where are we heading?
In this subsection, we'll explore two potential applications of generative AI in the enterprise world: generative analytics and data shepherding. These represent visions of what we at Deloitte believe can radically transform how the industry will approach enterprise steering in an age of generative AI.

Fig. 1 – AI features announced in SAP Sapphire 2023
(extracted from news.sap.com/2023/05/sap-sapphire-business-ai/ in June 2023)



Vision 1 | Generative Analytics

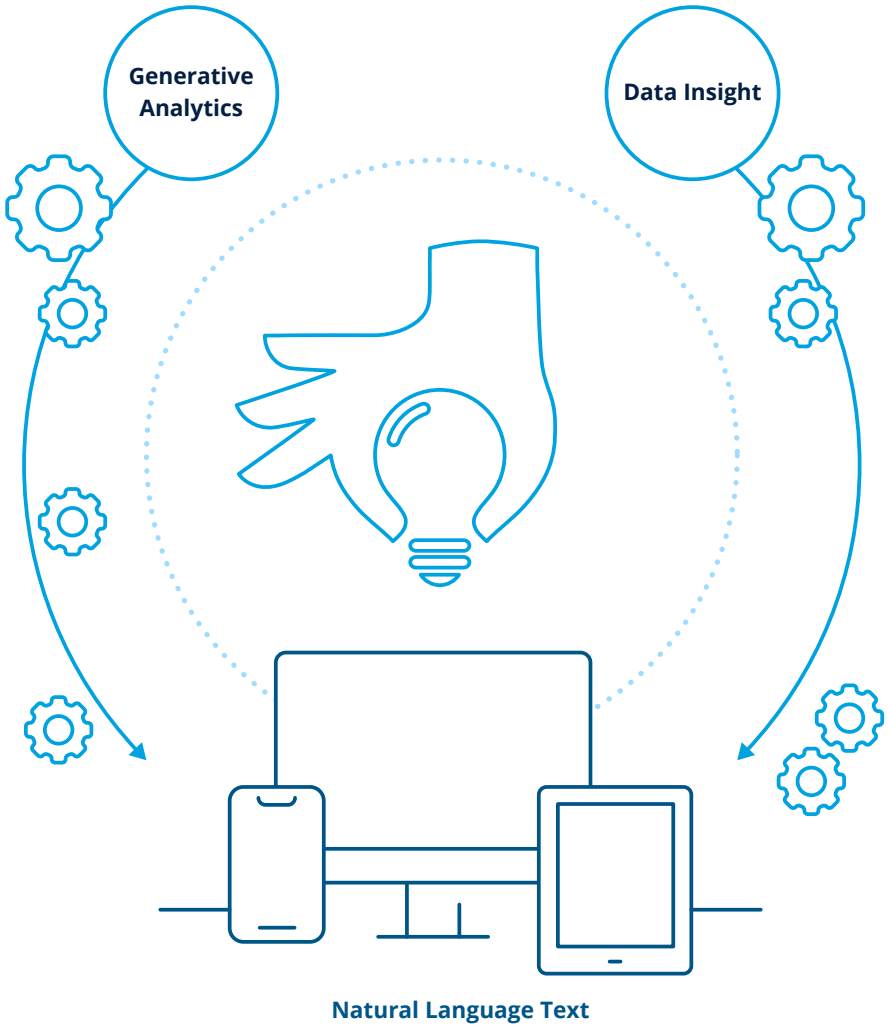
From Text to Insight

Imagine a report presentation in a boardroom. Instead of clicking through a pre-designed dashboard, the presenter simply gives voice commands to generate and navigate data analysis in real time. With generative AI techniques, this kind of interactive reporting will be the new way boardrooms function in the future. Not only will navigating through the reports be voice-enabled (which was already possible with previous generations of AI tools), but the analysis, advanced intelligence, and other sophisticated insights will be generated on the fly. The reports will not be pre-built, but rather tailor-made in real time based on the user's needs. Even the prompts and commands themselves can be recommended and generated by AI models with the potential of revealing patterns where they exist and offering insights that traditional methods might have otherwise missed. This approach will enable businesses to gain deeper insights from their data in shorter timeframes, helping them to make better decisions and gain a competitive advantage in the industry.

Within the context of enterprise performance, SAP is an enabler for data to insight-driven businesses, and is currently shaping the direction of some of the largest and most diverse collections of business datasets. At Deloitte Germany we see burgeoning potential in this intersection of enterprise data and generative models. And we have had the privilege to see some of the first experiments connecting one of the most revolutionary technologies of our times – ChatGPT - with one of SAP's key data environments for enterprise performance: SAP Analytics Cloud. More specifically, the Just Ask feature recently announced by SAP promises to be its next big step in this direction, as it promises to enable natural language inputs to instruct the construction of analytics dashboards on SAC. While this affords glimpses of what the future may hold, we envision SAP native solutions providing tailored intelligence that will dramatically change not only how we approach reporting but also how we guide and steer businesses.

Overall, the vision of generative analytics and AI-enabled interactive reporting represents a significant shift in the way that management will consume data for decision-making.

Fig. 2 – Generative Analytics: From Text to Insight.



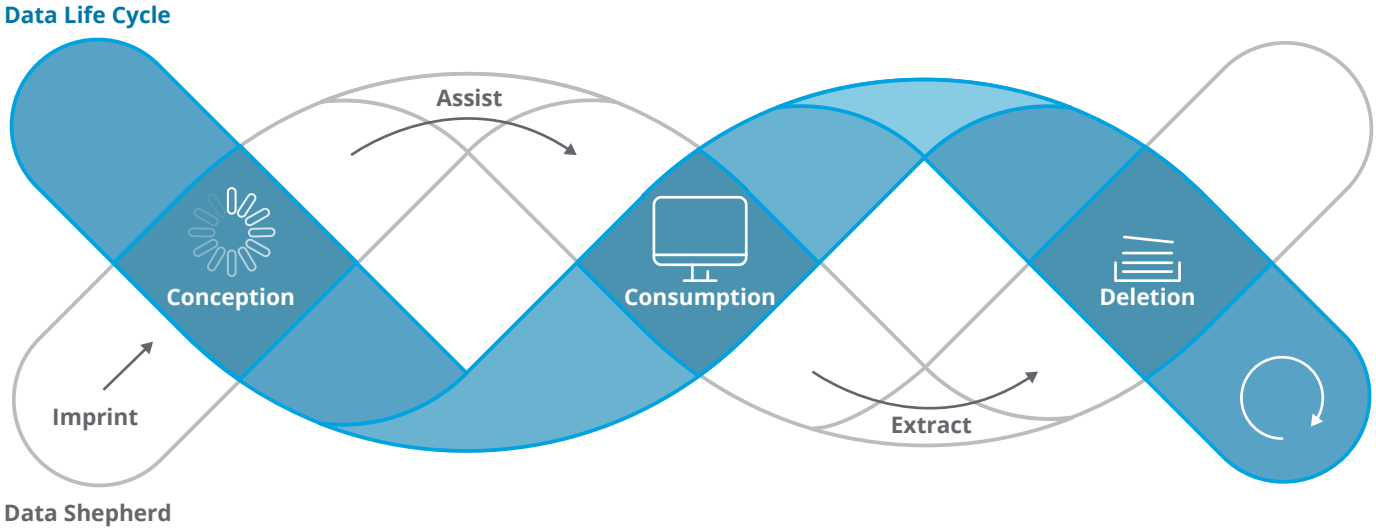
Vision 2 | Data shepherding

Towards self-accountable data

One of the biggest challenges in data analysis is understanding the source data and its features. Developers are often bottlenecked by the fact that only a limited number of people can interpret what the data means. Reporting cycles are stretched every time technical experts (data scientists, machine learning practitioners, etc.) require access to the people collecting and tending to the data. In the future, generative AI techniques will play the role of "data shepherds" helping developers and users to understand datasets by providing context, identifying relationships between columns, and discovering correlations. This advancement will enhance data comprehension and accelerate development cycles.

The focus here is on the management of data and its lifecycle. The sheer volume of data being generated and collected by organizations is increasing at an unprecedented rate. Consequently, effective data management is crucial for deriving valuable insights, especially within the context of enterprise data, i.e., the core mission of SAP services. Relying on human data shepherds to transfer crucial data interpretations to technical teams is frequently a challenging bottleneck. This issue can be addressed through AI-enabled data shepherding.

Fig. 3 – The data shepherd imprints the data at conception with quality, security and value extraction information, assists during consumption to identify trends and business insights, and extracts value to train future data shepherds.

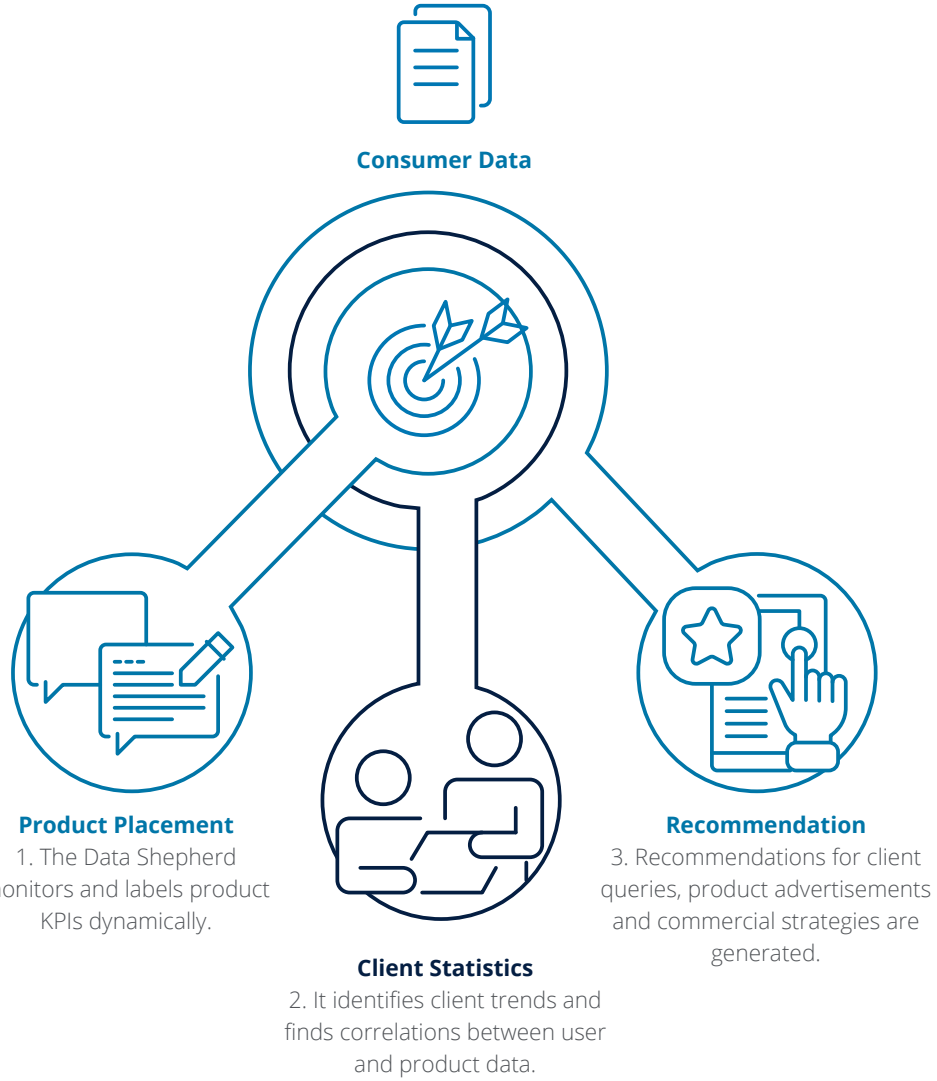


SAP is strategically positioned to make this vision a reality because it hosts some of the largest enterprise data management environments. The existing data lifecycles within SAP already provide an ideal framework for this vision, the future embodiment of which is potentially only a few iterations away.

To illustrate how we at Deloitte envision this coming to life, consider a dataset lifecycle from creation to deletion. At its conception, machine learning algorithms can be used to automatically identify and tag data with information concerning its source, quality, potential security issues and relevance to applications. Thus, data can be imprinted at creation with a data shepherd containing the information necessary for its processing and consumption. During consumption, the data shepherd can assist developers and users in shortcutting the process of identifying trends and generating insights for decision making. Finally, at deletion, data shepherds can feed larger models with the insights and value the data has provided throughout its cycle in order to enhance the quality of future data shepherds.

In summary, the goal of data shepherding is to ensure that data becomes self-accountable and is managed as a valuable organizational asset.

Fig. 4 – Data Shepherding of Product and Consumer Data – an Example:



Challenges and Ethical Considerations

Generative AI is a powerful tool that has the potential to revolutionize enterprise performance analytics, specifically within the context of SAP, however it also presents several significant challenges that need to be addressed. These challenges include privacy and security concerns, fairness and bias issues, ownership and accountability, and unintended consequences.

Privacy and security concerns arise in generative models due to the potential risk that synthetically generated data could inadvertently reveal sensitive information. This could lead to severe data breaches and exposure of critical data, resulting in financial and reputational damage. Therefore, it is essential to have robust data privacy and security protocols in place when implementing generative AI in the SAP environment. The same is true of fairness and bias in synthetically generated data, as AI models can replicate and often amplify biases present in the training data, resulting in unfair and discriminatory outcomes. It is important to ensure that generative AI models are trained on diverse and unbiased datasets to minimize these risks. Furthermore, ongoing monitoring and evaluation are required to detect and correct any biases that may emerge in the future.

Ownership and accountability are also crucial considerations when deploying generative AI in SAP. The output generated by these models may be used to make critical business decisions, and it is essential to have a governance model in place that defines and designates people responsible for the decisions made on an automated basis or otherwise. Finally, using generative AI may have unintended consequences that may not be immediately apparent, including generating results that are not in line with business objectives, are harmful in downstream applications or are even exploitative of users' experiences. To minimize this risk, we at Deloitte are ready to build robust systems integrated with SAP solutions to detect and address any such unexpected outcomes.

Conclusion

In conclusion, generative models hold significant potential for improving enterprise performance by revolutionizing data analytics. As businesses adopt these models, they must also carefully consider the challenges and ethical implications to ensure a secure and responsible future for generative AI in the enterprise.

At Deloitte Germany, we understand the importance of data management and offer a range of services to help our clients benefit from the exciting advances in AI with both responsibility and success. Our team of experts can assist you with implementing cutting-edge data management strategies, such as employing advanced analytics tools in SAP Analytics Cloud and SAP Datasphere to help your business make the most of its data assets.

Whether you're looking to improve data quality, optimize data processes, or build a data-driven culture within your organization, we at Deloitte Germany have the expertise and experience to help you succeed. Contact us to learn more about our SAP Analytics services and how we can help you achieve your business goals.

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