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Delivering a Trusted Data Foundation to Support Generative AI at Scale

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Abstract: Generative AI has emerged as a transformative force that is revolutionizing organizations and how they use data to create competitive advantages, improve decision-making, and innovate. However, challenges remain around data consolidation, data quality, data trust, and more—all of which need to be addressed to empower organizations to realize the outcomes they desire.

Introduction

Today, significant advancements in artificial intelligence (AI) are transforming nearly every industry. Generative AI, with its capabilities in natural language processing and computer vision, is captivating the imagination of business and technical stakeholders seeking to enhance decision-making, boost productivity, and accelerate innovation. Whether facilitating context-aware customer experiences, streamlining business processes, or simply crafting compelling content, generative AI is becoming table stakes for any organization looking to maintain a competitive advantage. Underscoring the pressure companies face to embed generative AI across the enterprise, recent research by TechTarget's Enterprise Strategy Group showed that 66% of business leaders surveyed agreed that technology investments are easier to justify if they support a generative AI initiative.[1]

As businesses look for creative ways to harness the power of generative AI, they're asking how it can be trusted to deliver accurate, repeatable, and explainable results. And it's increasingly apparent that it comes down to the quality and reliability of the underlying data it's built on. In other words, trustworthy AI requires a foundation of trusted data. And yet many companies still face significant problems with data quality, privacy, governance, and more. In the following sections, we'll explore these issues and how organizations can overcome them to ensure trust in AI-driven outcomes and decision-making.

Market insight

66% of organizations agree that technology investments are easier to justify if they support a generative AI initiative.

Key data challenges

For organizations reckoning with the state of their data ecosystems, data sprawl and poor data quality emerge as the top challenges. Within an organization, three types of generative AI consumers are affected by these challenges:

[1] Source: Enterprise Strategy Group Research Report, *Beyond the GenAI Hype: Real-world Investments, Use Cases, and Concerns*, August 2023.

- The trainers of foundational models that require vast amounts of high-quality data.
- The fine-tuners that require less but even more high-quality data to "adjust" data models.
- The direct consumers that might require data for prompting, which necessitates additional security checks.

Generative AI demands large and relevant datasets, not only to train custom models but also to ensure accurate responses. This requires businesses to overcome data quality concerns, minimize inherent biases, and manage data sprawl efficiently. According to the Enterprise Strategy Group survey, the limited availability of quality data for models is one of the most significant challenges.[2] As organizations focus on ensuring data quality, relevance, and accessibility, they're finding themselves navigating a complex and disparate set of data sources, including first-party, third-party, and publicly available datasets that must be properly integrated, cleansed, and prepared.

The successful adoption of generative AI also requires openness and integration. There are several dimensions of openness to consider, whether that be a technology stack to support scalable data management or the use of a custom and/or public large language model to ensure flexibility. But again, it comes back to the underlying data. Many organizations lack data standardization, which leads to silos of information and the need for proprietary technology, making it difficult to eventually scale generative AI more broadly across the business.

Another challenge pertains to the integration of generative AI with existing tools. This continues to create roadblocks for organizations as they seek cost-effective approaches to generative AI that don't force complete changes to existing data architectures and data pipelines.

Creating trustworthy generative AI requires much more than surmounting technical challenges such as accuracy and performance. According to another Enterprise Strategy Group survey, 75% of the concerns organizations have with generative AI relate to security and privacy risks, difficulty in validating results, legal/regulatory implications, ethical considerations, and lack of transparency—all key aspects of trust.[3]

Market insight

75% of the concerns organizations have with generative AI relate to issues around trust, including security, privacy, and transparency.

There is a lot at stake as organizations make significant investments in generative AI. If results can't be trusted, there's no certainty end users will actually utilize the technology. All it takes is one hallucination or wrong response, and generative AI could be detrimental to the business—and turn customers or end users against the technology altogether.

AI capabilities that matter

As organizations pursue generative AI initiatives, they must invest in key technologies and capabilities that help overcome data challenges to ensure their data can be trusted.

First, organizations must standardize data to effectively manage data growth, eliminate inconsistencies, and reduce data movement. Data standardization can also simplify data preparation and facilitate faster and more accurate data cleaning, which improves the performance of generative AI.

Second, to address the complexities associated with integrating and maintaining complex data pipelines that straddle many will technologies, businesses require a single data and analytics platform that enables consistent, reliable deployment of end-to-end pipelines that support a broad set of generative AI use cases. The ideal platform will include built-in AI functionality to help improve efficiency while supporting the open-source nature of the generative AI technology landscape through seamless integrations. This is critical to ensuring all areas of the business see value in scaling generative AI.

[2] Ibid.
[3] Source: Enterprise Strategy Group Research Report, *Navigating the Evolving AI Infrastructure Landscape*, September 2023.

The right platform will also offer both infrastructure flexibility and a robust analytics engine to ensure cost-effective scale. And, of course, it must also ensure enterprise-level trust and transparency. That means enabling end users to make the right decisions with confidence, knowing the underlying data is applicable, accurate, and trustworthy.

Teradata

Teradata VantageCloud, the complete cloud analytics and data platform for AI, enables organizations to build a trusted data foundation to support their innovative generative AI initiatives. VantageCloud Enterprise and VantageCloud Lake, the next-generation deployment built on a cloud-native architecture, effectively manage data sprawl by eliminating data silos and consolidating data into a single repository to enable harmonized data. VantageCloud provides many benefits in support of generative AI initiatives, including:

- The ability to improve speed, performance, and time to value by minimizing data movement.
- Reduction of costs and maintenance of security by handling data where it lies, while fully integrating all relevant data for higher-quality results.
- Accelerated AI innovation through ClearScape Analytics™, which enables organizations to seamlessly deploy optimized pipelines to support all AI initiatives.
- Fast and contextual data exploration, improved data preparation, and faster feature engineering enabled by optimized in-database analytic functions.
- Freedom of choice when it comes to languages and tools, highlighting the open and connected ecosystem of which Teradata can be the foundation.
- Better results through the operationalization of AI by helping with access, orchestration, and replication via an integrated MLOps approach that accounts for model governance, lifecycle management, and monitoring extensions.

The value of Teradata to Amazon Web Services (AWS) customers

Together, Teradata and AWS are accelerating customer value by delivering continuous data analytics and AI innovation. Organizations can migrate to VantageCloud on AWS quickly and confidently without requiring application rewrites, and Teradata products are deeply integrated with AWS services and tools such as Amazon SageMaker and the generative AI service Amazon Bedrock. The AWS data security and privacy capabilities included in the service give customers an additional layer of data protection. This is all enhanced by the flexibility of purchase options through the AWS marketplace.

Conclusion

As businesses look to adopt generative AI solutions that provide reliable, trustworthy results, this emerging technology is poised to revolutionize how businesses manage data. Teradata and AWS are leading the way, not only with solutions that are available today, but also as thought leaders and innovators, staying ahead of the trends and bringing the innovations back to their clients. This is especially important in a market like generative AI, which is moving at light speed. The partners that organizations choose today may have a big impact on the future.

By leveraging VantageCloud on AWS, organizations can create a trusted data foundation that builds buy-in from stakeholders and end users across the enterprise. This will enable them to not only realize value faster from early generative AI initiatives but also facilitate the eventual scaling of AI solutions with confidence.

About Enterprise Strategy Group
TechTarget's Enterprise Strategy Group provides focused and actionable market intelligence, demand-side research, analyst advisory services, GTM strategy guidance, solution validations, and custom content supporting enterprise technology buying and selling.

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