NUCLEUS RESEARCH

ROI Guidebook: Teradata VantageCloud

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Z71

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Executive Summary

In today's business landscape, organizations face increasing challenges in managing, analyzing, and deriving value from their data assets. The exponential growth of data volumes, coupled with the increasing complexity of analytical workloads, has pushed traditional solutions to their limits. Advanced analytics and data management solutions have emerged to address these challenges as enterprises increasingly require flexible solutions that can handle petabyte-scale data processing while supporting scaling workloads and emerging artificial intelligence (AI) initiatives. Teradata VantageCloud is strongly positioned to address these challenges and provide value to enterprises seeking to modernize their data infrastructure. By utilizing cloud computing, VantageCloud offers requisite scalability and elasticity, enabling organizations to dynamically adjust their resources based on real-time demands. This approach eliminates the need for complex capacity planning and costly hardware refresh cycles, resulting in cost savings and improved operational efficiency. Additionally, Teradata's hybrid architecture gives customers the flexibility to deploy both on-premises and in the cloud, ensuring they derive value from the Teradata platform whether they have fully migrated or are operating in a hybrid environment. Furthermore, VantageCloud's fully managed service model and intelligent automation capabilities free up valuable IT resources. VantageCloud also offers a suite of advanced features, including ClearScape Analytics for in-database machine learning and time series analysis, integrated ModelOps for streamlined AI/ML operationalization, and sophisticated data governance capabilities.

To better understand the benefits and costs associated with an investment in Teradata VantageCloud, Nucleus conducted an in-depth return on investment (ROI) assessment of multiple customers that have been taking advantage of Teradata's scale and smart processing. Organizations realized an average ROI of 427 percent over a three-year period, with an average annual benefit of $7.9M and a payback period of 11 months. On average, customers also referenced 43 percent reduced administrative costs, 25 to 30 percent improved data processing, 51 percent accelerated AI model delivery, 10 to 15 percent improved performance for existing models, and 87 to 90 percent faster backup processes. Qualitative findings highlighted improved data quality and lineage which proved crucial for unlocking emerging AI use cases. This improved data-trust also helped justify further innovation and investment in AI technologies, positioning organizations to better utilize their data assets in the future.

Annual ROI

427%

Payback Period

11 Months

Annual Benefit

$7,917,573

Summarized Benefits

Certain benefits directly translate to financial value, while others need additional steps to impact an organization's financial statements. These quantifiable benefits can be categorized as direct and indirect. The following represent benefits experienced by the companies in this report and comprise the largest share of returns after factoring out the value they have recognized to date with the platform on premise.

Direct Benefits

Direct benefits include cost savings, cost avoidance, and other changes that impact a budget or profit and loss (P&L) statement:

- **Hardware cost savings**
  By transitioning to this cloud-based solution, organizations eliminated costly hardware refresh cycles, which required substantial capital expenditure every few years. Furthermore, as workloads expanded and data volumes grew, companies avoided the expenses associated with scaling on-premises deployments.

- **Administrative cost savings**
  Teradata VantageCloud's fully managed approach streamlined operations, eliminating the need for extensive in-house administration and maintenance. This intelligent automation reduced the time and effort required for manual system management, allowing IT teams to focus on higher-value tasks.

Indirect Benefits

Indirect benefits include time savings from accelerated processes that can be quantified but had an indirect impact on a budget or P&L:

- **Data team time savings**
  With accelerated model development features, data scientists could deploy AI and machine learning models faster. Additionally, the semi-automated data engineering capabilities reduced manual interventions, allowing users to focus on higher-value tasks.

- **Data user time savings**
  Enhanced data processing powered by Teradata VantageCloud led to reduced latency across critical workloads, resulting in improved data accessibility across the organization. This streamlined access to critical information translated into broad productivity gains for data users who found themselves spending less time waiting for queries to execute or searching for datasets.

Annual direct cost savings

$735,000

Improved compute performance

25 - 30%

Faster AI model delivery

26 – 75%

Accelerated backup processes

87 - 90%

Reduced support

43%

Adoption Drivers

Nucleus identified multiple factors that spurred the adoption of Teradata VantageCloud. Some of these adoption drivers were highly consistent, while others depended on the scale of the organization's data operations and the maturity of its data infrastructure.

- **Advanced analytics readiness**

  Organizations with improper data and analytics infrastructure increasingly recognize the shortcomings of their technology as adoption of AI, ML, and advanced analytics accelerate. Legacy systems often lack the agility, integration, and processing power required to support modern analytics workloads, leading to bottlenecks and missed opportunities for data-driven insights. Teradata VantageCloud addresses these gaps by providing a unified, scalable platform designed for advanced analytics and AI workloads. With capabilities for data integration, high-performance processing, and built-in support for machine learning, organizations can modernize their analytics capabilities, accelerate innovation, and unlock greater value from their data assets.

- **On-premises costs**

  Organizations with on-premises infrastructure often face escalating costs as their data footprints grow. Maintaining and upgrading hardware becomes increasingly expensive, especially when considering the additional expenses of skilled personnel to manage these resources. This prompts many enterprises to seek alternatives like Teradata VantageCloud, which offers managed solutions. By transitioning to a cloud-based platform, they can benefit from automated scaling capabilities and predictable costs, reducing the financial burden associated with on-premises infrastructure maintenance and expansion.

- **Technical resource constraints**

  Organizations were often constrained by their access to technical resources, especially those with niche skillsets for specialized tools. Teams often found themselves overwhelmed by administrative duties rather than focusing on strategic initiatives. Teradata VantageCloud addresses these challenges by offering automation and centralized management capabilities. This allows organizations to optimize resource utilization, enhance productivity, and redirect efforts toward innovation and business growth.

"By moving to Teradata VantageCloud, we've dramatically reduced data processing times, making real-time decision-making a reality and giving us the agility to respond to market shifts with confidence."

- Healthcare provider

- **Limited scale and elasticity**

  Scale and elasticity presented challenges for organizations relying on traditional data management systems. As data volumes and analytical demands grew, many enterprises struggled to efficiently scale their existing infrastructure to meet new and expanded workloads. On-premises solutions often required significant lead time and capital investment to expand capacity, resulting in periods of over-provisioning or under-utilization. Teradata VantageCloud addressed these pain points by offering cloud scalability and elasticity, allowing businesses to dynamically adjust their resources based on real-time requirements. This cloud-based approach eliminated the need for complex capacity planning and enabled organizations to rapidly respond to fluctuating workloads, ensuring optimal performance and cost-efficiency.

"We rely on Teradata to help us analyze data and set competitive commercial rates that drive business growth, improve profitability, and deliver greater value to our customers"

- Insurance Provider

Analysis of Benefits

Nucleus found that companies deploying Teradata VantageCloud experienced a range of benefits which were largely dependent on the size and complexity of their deployment and the rate of technology adoption. The best technology business cases focus on a select number of key benefits that can guide deployment and adoption efforts. To guide organizations in building their business cases, Nucleus has presented the benefits most commonly experienced by Teradata VantageCloud customers with guidance ranges based on what customers typically experience.

Maintenance and Upgrade Cycle Savings

Organizations who adopted Teradata VantageCloud observed significant cost savings previously associated with maintaining, administering, and upgrading on-premises environments. Teradata's Cloud environment eliminated the prior cost and complexity involved in maintaining and upgrading physical hardware while its fully managed approach reduced ongoing administrative effort. On average, by adopting Teradata VantageCloud, organizations saved $735,000 per year across a range from $156,250 to $1.8 million dependent on the scale and complexity of their prior on-premises infrastructure. Organizations also referenced a 43 percent reduction in annual administrative costs by moving to Teradata VantageCloud. This decrease in administrative overhead was primarily due to the elimination of tasks such as hardware maintenance, software updates, and system monitoring which are now handled by Teradata.

Enhanced Compute Performance

Organizations that adopted Teradata VantageCloud experienced a 25 to 30 percent improvement in data processing efficiency. This boost in performance was attributed to Teradata VantageCloud's advanced query optimization techniques and intelligent scaling capabilities which were well suited to support complex analytical workloads. This flexibility ensured that businesses could quickly respond to sudden spikes in demand or handle resource-intensive workloads without compromising on performance.

"Teradata's AI-powered fraud detection models have given us a critical edge, helping us react faster, reduce risk, and protect millions in potential losses."

- Insurance provider

Improved Model Development & Performance

Organizations that transitioned to Teradata VantageCloud experienced substantial improvements in model development and performance translating into direct time savings for data scientists. By leveraging Teradata VantageCloud's capabilities to automate infrastructure management and model deployment, organizations achieved 26 to 75 percent faster AI project delivery. For select organizations, this brought timelines down from one month to just one week. Additionally, existing models saw 10 to 15 percent improved performance with Teradata's cloud offering, which provided additional capacity to support large scale model deployments. Although targeted applications differed across organizations interviewed, these improvements allowed organizations to build and iterate at a faster rate yielded substantial top and bottom line dollar growth.

Improved Backup

The implementation of VantageCloud's Data Protection feature accelerated backup operations, achieving 87 to 90 percent faster backups compared to traditional manual processes. This reduction was made possible by VantageCloud Lake's use of Data Stream Architecture (DSA) for backups and restores, which efficiently reads and packages data blocks from the database file system. Furthermore, the introduction of in-place backup for Object File System (OFS) tables eliminated the need to read and back up actual object data from external storage, further streamlining the process. The automated nature of these backups also removed the necessity for constant monitoring, freeing up valuable IT resources and reducing the potential for human error. As part of Teradata's fully managed approach, the company handles patches, upgrades, and backups, allowing organizations to redirect their focus from routine maintenance to more strategic initiatives.

Analysis of Costs

Nucleus analyzed the initial and ongoing costs of software, hardware, personnel, consulting, and training over a three-year period to quantify the return on investment that Teradata Vantage Cloud delivered to its customers.

Cost Category	Cost Factors	Cost Range
Annual Software Subscription	Resource commitments and scale of resource consumption	$288,752–$5,175,600
Consulting	Complexity of the modernization initiative, internal team skill levels	$0–$500,000
Initial Personnel	Internal team skill levels, complexity of environment, consulting spend	$72,384–$240,000
Ongoing Personnel	Internal team skill levels, complexity of environment maintained	$67,600–$919,230

Nucleus found that annual software subscription costs made up the most significant area of investment for customers, although it is worth noting that this investment was in line with other enterprise software investments supporting cloud data warehousing. Initial cost mostly varied based on the size of the organization at the time of deployment and complexity of the modernization initiative.

"Bringing together structured and unstructured data used to be a challenge, but with Teradata, we've unlocked a new level of AI-driven insights that are shaping our business strategies."

- Retailer

Financial Summary

Nucleus found that the average return on investment (ROI) of evaluated Teradata VantageCloud deployments was 427 percent, with a high of 1143 percent and a low of 102 percent. ROI was calculated over a three-year time horizon, projecting costs and benefits forward on a straight-line basis for organizations that had not yet reached three years of deployment.

Key Financial Metrics

The payback period observed for a Teradata VantageCloud deployment ranged from 1.2 months to 2.2 years, with an average of 11 months. The net present value (NPV) of a Teradata VantageCloud deployment ranged from $1.81 million to $12.6 million, with an average of $3.68 million.

Metrics	Low	High
ROI	102%	1,143%
Payback (months)	1.2	26.4
Annual Benefit	$4,396,710	$11,375,400
Benefit to Cost Ratio	1.5	12.5
Present Value	$1,806,947	$12,595,489
Internal Rate of Return	50%	1,119%

"Interoperability across Teradata, Snowflake, and Databricks has allowed us to break down data silos and create a more connected, AI-ready enterprise."

- Insurance provider

Customer Profiles

Audited Organizations

For the development of this ROI Guidebook, Nucleus spoke to multiple Teradata VantageCloud customers and completed in-depth ROI assessments of four organizations to evaluate their returns.

Industry	Interviewees	Employees
Health Insurance	Chief Analytics Officer	5,000
Commercial Insurance	Director, Data Analytics	26,000
Telecommunications	Director, Data Engineering	45,000
Healthcare	VP, Digital Development and Innovation	24,000

"By integrating Teradata's advanced analytics into our retention strategies, we're not just predicting customer churn—we're preventing it.

After transitioning to Teradata's ClearScape Analytics, our AI-driven churn modeling saw a 10-15% lift in accuracy."

- Telecoms provider

Health Insurance Provider

This health insurance provider manages a 40 TB data platform, serving over three million members across multiple states. The company's primary focus is on partner and internal enablement, aiming to improve access to care and enhance care quality through analytics and data modeling. Previously limited by its on-premise data warehouse which involved multiple data stores and additional costs for data hopping, the organization embarked on a data modernization journey, migrating to Teradata VantageCloud in late 2022. The health insurance provider implemented the Teradata VantageCloud over the following year in which the organization progressively moved legacy pipelines into Teradata and ran a pilot to validate the results of claims processes within the new cloud environment.

The migration has already shown significant benefits, including a 25 to 30 percent improvement in data processing timeframes, 23 to 30 percent faster AI project delivery, and substantial time savings in User Acceptance Testing (UAT) processes. Additionally, the new infrastructure provides more economical storage solutions and flexible computing capacity, enabling the organization to scale both efficiently. This migration is also expected to yield annual savings of $6 million by 2026 through the retirement of legacy systems. This saving

alone justifies the cost of Teradata VantageCloud which serves as the organization's new central data hub, integrating various data sources to support reporting, predictive modeling, and data exchange with other providers.

"We now process a day's worth of financial transactions in just 10 minutes, a breakthrough in real-time analytics with Teradata."

- Insurance provider

Commercial Insurer

This commercial insurance provider offers various property and casualty insurance plans to members nationally. The organization specializes in rate-making based on loss propensity, customer analytics for targeted campaigns, and policy holder information analysis including sentiment analysis. With a focus on data-driven processes, the insurer leverages advanced analytics platforms to optimize pricing, improve customer acquisition, and enhance policyholder retention.

In 2020, the organization engaged in digital transformation, moving its on-premises enterprise data warehouse to Vantage Cloud on AWS. This migration, completed over a three to four month period, involved moving three systems totaling 200TB of data to the cloud with minimal disruption to business users. The cloud migration has yielded substantial benefits, including improved cost predictability, reduced maintenance and administrative overhead, and faster backup processes. The organization now enjoys greater flexibility in resource allocation, with the ability to swap instance types in the cloud and leverage managed services for system monitoring and OS patching.

"AI is only as powerful as the data behind it, and with Teradata, we've built a foundation that fuels smarter, faster machine learning models that drive real business impact."

- Telecoms provider

The move to the cloud has unlocked new use cases, particularly in handling unstructured data through object storage and improved interoperability between platforms such as Snowflake and Databricks. The organization has also seen productivity increases due to additional CPU capacity and easier implementation of new use cases. Notable improvements include the reduction of backup process times from 30 hours to 3-4 hours and the ability to run more frequent ETL processes. In the following years, this cloud migration has also enabled the insurer to adapt more quickly to market changes, as evidenced by their agile response to pricing challenges during the COVID-19 pandemic and the rollout of telemetric data for more accurate rate-making across all states.

Telecommunications Company

This telecommunications company offers a comprehensive range of products including mobile, internet, television, and home phone services. The organization's data includes detailed customer profiles, network performance metrics, usage patterns, and transactional

histories spanning its services. With over 50 years of accumulated data representing millions of customer records, the company leverages Teradata to drive strategic decision-making, optimize network performance, and develop personalized customer experiences.

In early 2022, the organization faced a looming and expensive refresh cycle for its hardware systems and began exploring cloud modernization strategies as an alternative. After evaluating several options, including Google BigQuery, and Snowflake, the company opted to migrate its data environment to a Teradata VantageCloud. This decision aimed to minimize risks and overhead associated with traditional hardware refresh cycles and to leverage advanced analytics capabilities delivered with VantageCloud to unlock new use-cases. The migration process was meticulously planned, involving direct connections between its data centers and the cloud provider, ensuring a smooth transition while maintaining operational continuity.

The adoption of Teradata VantageCloud has yielded significant benefits for the telecommunications company. By avoiding a hardware refresh cycle, the company saved over $350,000 in annual costs associated with a 7-year upgrade. Additionally, the migration to cloud-based analytics has accelerated AI model delivery times, reducing the process from over a month to just one week with the same personnel. This efficiency boost has enabled the company to implement more sophisticated AI/ML models and iterate faster, resulting in a broad 10-15 percent improvement in performance for existing models. Notably, personalized advertising campaigns powered by these new AI/ML capabilities have shown a 25 percent increase in sales for targeted customer interactions, translating to significant revenue gains. Additionally, the cloud migration has freed up capacity during peak hours, allowing for more complex analyses that were previously constrained by on-premises limitations.

"The ability to process a full day's worth of financial transactions in just 10 minutes has transformed the way we operate—decisions that once lagged behind are now made in real-time."

- Insurance provider

Healthcare Provider

This healthcare provider offers value-based care services to its patient population, serving over three million people within its jurisdiction. The organization is at the forefront of leveraging data for automated solutions and differentiated user experiences, focusing on connecting with patients in their preferred manner and reducing clinician burnout. To inform these initiatives, the organization maintains an enterprise data warehouse of five to six terabytes; a repository which has quadrupled in size every year.

In 2021, shortly after the COVID-19 pandemic, the organization embarked on a cloud migration journey, moving from an on-premises production environment to a cloud-based solution. The implementation, which began in 2022, was carried out over a six to eight month period by a small team of three people. As early adopters of Teradata's cloud solution, they faced some internal connectivity challenges. However, Teradata provided swift resolution to address these issues. After the cloud environment was set up, there was a one-month transition period before the on-premises system was shut down, to make sure that processes were accurate and consistent.

"Moving to Teradata cloud eliminated the need for a 7-year hardware refresh cycle, saving us $350K annually in infrastructure costs."

- Telecoms provider

From a cost perspective, the shift to a fully managed service has eliminated the need for regular upgrades and reduced the burden on IT teams. Previously, the organization required a team of 25 people to manage the data center, with update cycles every three years causing operational disruptions. Now, with only a part-time senior engineer and admin they've significantly reduced administrative costs. Teradata VantageCloud has also facilitated the merging of data types, including genomics and medical imaging with 67 percent reduced integration timelines. Currently the organization has brought together five previously siloed systems, and more system integrations are planned in the near future. Time savings across the organization's analytics users have been notable, with savings per user of at least 15-30 minutes per day. This enhanced efficiency has allowed the data team to handle exponential data growth without team expansion. With an emphasis on AI-driven healthcare, the provider has since implemented a digital-first strategy with Teradata VantageCloud that includes proactive patient identification, collaboration with community centers, and enhanced remote patient monitoring.

Conclusion

Customers have coalesced to Teradata in an effort to extend immediate returns and invest alongside a clear roadmap for future gains. Teradata's proven platform delivers strong current value through reliable, high-performance analytics, while its cloud offerings and integrated AI tools create new opportunities to unlock advanced use cases. This dual promise—near-term operational benefits plus the flexibility to adopt next-generation capabilities—has made Teradata a particularly compelling option for enterprises that demand both rapid ROI and a future-proof data strategy. As Teradata continues to innovate, customers gain confidence that their investment will not only maintain value but also enable new levels of insight and efficiency.

Guidebook Methodology

Based on the ROI assessments developed through in-depth interviews with Teradata VantageCloud customers, Nucleus has developed an ROI framework for organizations that are considering a Teradata investment. The framework can be used by potential and existing customers to understand the cost, benefit, and deployment factors that impact their potential return on investment. The Nucleus ROI Guidebook development process includes:

"In just one initiative, we retired legacy infrastructure, reduced operational costs by millions, and accelerated analytics performance, delivering a clear and compelling return on investment that continues to compound over time.

- Insurance provider

Technology Review

Nucleus interviewed Teradata product managers and subject matter experts, participated in product demonstrations, and conducted a full review of technical documents and data sheets to gather data on Teradata VantageCloud.

Customer Interviews

Nucleus analysts conducted in-depth interviews with four organizations that were using Teradata VantageCloud to understand their business challenges, strategy, deployment processes, costs incurred, benefits achieved, and best practices learned from their deployments.

ROI Assessments

Based on the data collected from customers, Nucleus completed an ROI assessment of each customer's deployment and validated that ROI audit with each customer's project team leadership.

Construction of Aggregate ROI Framework and Analysis

Nucleus constructed a financial model based on its NASBA-registered ROI methodology, using the data from Nucleus's ROI business case assessments of the customers detailed. All financial metrics presented in this report are calculated based on standard NASBA accounting principles commonly used by certified finance professionals.

Benefits Guidance

Based on the variability and clustering of benefits in the aggregate, Nucleus provides appropriate averages, ranges, and estimation factors to guide other customers in using the framework to develop their own ROI projections.