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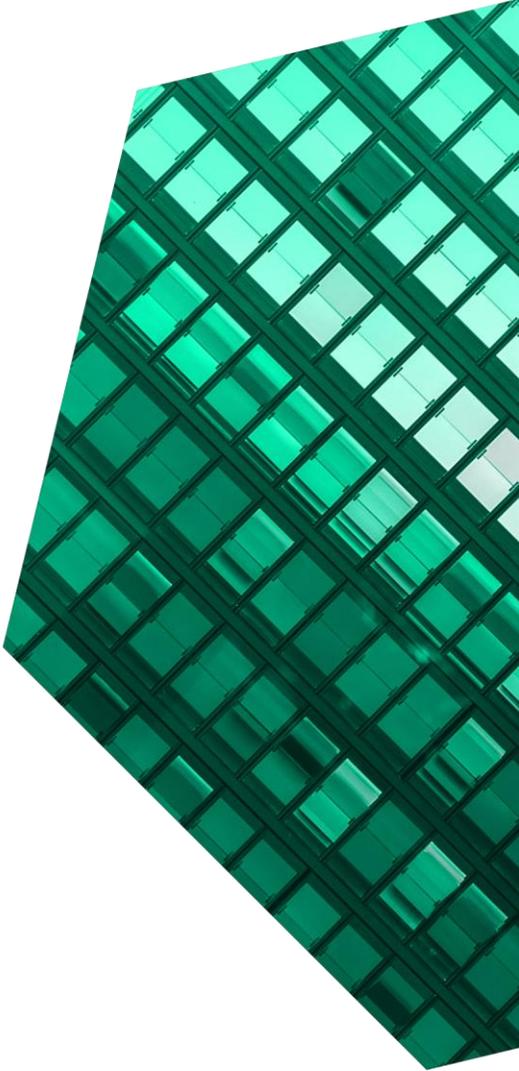
The Total Economic Impact™ Of Vertica

Cost Savings And Business Benefits
Enabled By Vertica

MAY 2021

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ABOUT FORRESTER CONSULTING

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Executive Summary

Due to competitive pressures, the demand on companies' data platforms has grown dramatically to support digital transformation applications that require real-time ingestion of new and existing data, extremely fast response times within large databases and across multiple data stores, and machine-learning insights. Vertica supplies a unified analytical data platform with fast multithread data loads, a query planner that integrates across data stores, and a fast columnar database with built-in machine learning.

At its core, [Vertica](#) — the unified analytical data platform from Micro Focus — is a high-speed columnar database with built-in machine learning (ML) and advanced analytics. It has easy-to-use tools to support rapid data ingestion via parallel threads, faster transformations done within the database, data compression to reduce storage costs, and a query planner that unifies data across data stores. Combined with the platform's stability and its capability to be deployed across public clouds and in enterprise data centers with cloud-native architectures, the tools allow resources to do more value-add work vs. monitoring and maintenance. Flexible and competitive pricing can reduce data platform costs by more than 50% more than competitors.

Micro Focus commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying Vertica. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Vertica on their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed four decision-makers from organizations with experience using Vertica. For the purposes of this study, Forrester aggregated the experiences of the interviewees and combined the results into a single [composite organization](#).

KEY STATISTICS



Return on investment (ROI)

385%



Net present value (NPV)

\$10.14M

Prior to using Vertica, the organizations recognized they were not prepared for digital transformation initiatives. They lacked a standard, effective means to build advanced analytics and machine learning into applications, and their query response times couldn't support such applications from their data warehouses. Worse yet, their environments were too complex to centralize all the data stores they needed for growing analysis demands. This left them with even slower query performance across data stores, if that was possible. They were not able to ingest data quickly enough for real-time or near-real-time analysis and response. Finally, growth in data requirements led to performance issues, maintenance challenges, and rising costs for data warehouse licensing.

After investing in Vertica, the organizations reduced costs while enabling digital transformation. They are creating applications with machine learning built into their core business areas including sales, marketing, and finance. They are seeing increased revenue and

other benefits from these applications that exceed decision-makers' expectations, and they have accelerated the identification of additional use cases to drive more digital transformation, such as product development.

KEY FINDINGS

Quantified benefits. Risk-adjusted present value (PV) quantified benefits include:

- **Elimination of prior data warehouse solutions and reduction of data storage costs, saving \$4,431,352 over three years.** Interviewees said replacing their organizations' data warehouse solutions with Vertica led to cost savings due to the platform's built-in machine learning and its ability to improve query performance, ingestion, and transformation, among other improvements. Interviewees described various ways that their organizations were able to reduce storage costs.
- **Labor savings due to reduction in dedicated database administrators, totaling \$1,016,811 over three years.** Vertica allowed the interviewees' organizations to reassign 50% of their database administrators due to the platform's stability, ease-of-use, and capability to improve technology related to columnar databases.
- **Revenue increase due to ML products and ML-driven productivities, totaling \$2,392,562 over three years.** Interviewees said their organizations' original use cases typically included sales and marketing improvements. After seeing early success, decision-makers identified new use cases in those areas, including driving product improvements and customer satisfaction.
- **Field-service application cost savings of \$2,684,659 over three years.** Each interviewee said their organization had focus projects related to its core competencies. With field service — a

common function within corporations that parallels many customer experience areas — interviewees said their organizations saw considerable application opportunities that transformed their business operations.

- **Value of more decisionable business insights with less effort, leading to benefits of \$2,250,000 over three years.** Interviewees said their organizations retired spreadsheet analyses, automated multistep analyses, and used the saved time to perform additional analyses.

Unquantified benefits. Benefits that are not quantified for this study include:

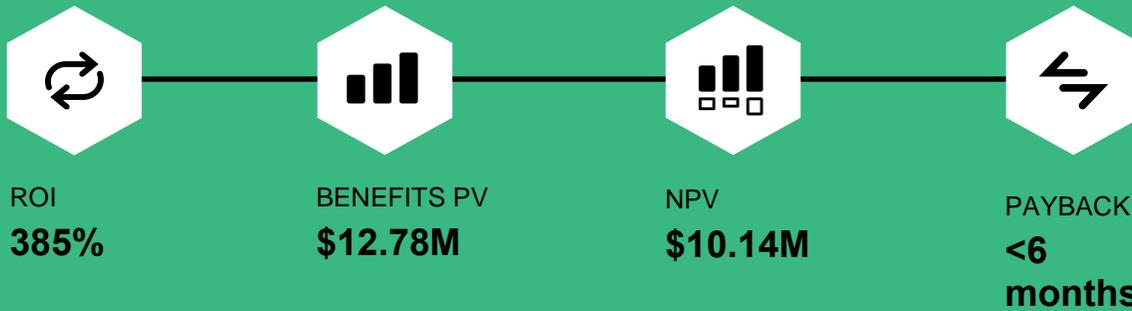
- **Broad level of comfort.** Interviewees spoke about the stability of Vertica and the lack of concern they have about costs, scaling, load times, response times, integration, monitoring, and maintenance.
- **Proof of concept (POC) shows proof of value.** Each of the interviewees' companies had successful POCs. Vertica was able to provide increased scale, ingestion speed, integration, response-time speed, and ease of use as well as meet other company-specific needs.
- **Unified data architecture that does more than provide cost savings.** Vertica's query planner optimizes retrieving data across multiple data stores. When possible, replicating data costs more and requires additional effort, and it also introduces data-validation challenges.
- **Having Vertica as part of the team.** Interviewees referred to Vertica as a partner that provides access to knowledgeable engineers. A lead analytics architect with a manufacturing organization said: "Vertica has been instrumental to our success. We have monthly technical seminars, and [Vertica's] technical people show an interest in our success."

Costs. Risk-adjusted PV costs include:

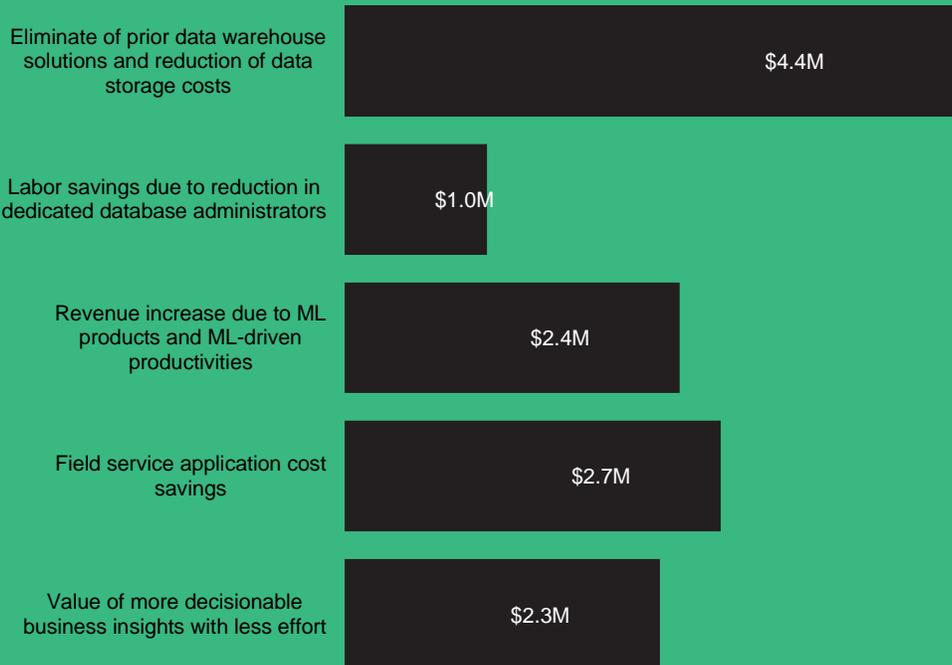
- **Implementation, expansion, and licensing costs of \$2,636,632 over three years.**

Interviewees spoke of very successful implementations, undisruptive expansions, and licensing that worked for their organizations. This saved them money vs. their prior data platforms.

The interviews and financial analysis found that a composite organization experiences benefits of \$12.78 million over three years versus costs of \$2.64 million, adding up to a net present value (NPV) of \$10.14 million and an ROI of 385%.



Benefits (Three-Year)



All four interviewees said their organizations chose Vertica after completing a proof of concept. They said:

“The POC made us feel comfortable that Vertica would scale while providing fast response times.” – *Engineering director of reporting, media*

“We did the world’s largest science experiment with Vertica and four major vendors at the same time. Vertica was the clear winner.” – *IT director, telecommunications*

“We went from multiple vendors to two: Vertica and a major cloud-only vendor. Overall, Vertica’s solution was heads and tails above the other vendors’ solutions.” – *VP of data and analytics, manufacturing*

“We did a three-month assessment comparing Vertica to a major cloud solution. We found that Vertica was far better in terms of performance and technology. Not only does [Vertica’s] query planner optimize the query better, but performance is better at loading data, and it is easier to organize. In addition, we estimated the overall cost to be 30% cheaper. I was one of the skeptics; my concerns were unfounded.” – *Lead analytics architect, manufacturing*

TEI FRAMEWORK AND METHODOLOGY

From the information provided in the interviews, Forrester constructed a Total Economic Impact™ framework for those organizations considering an investment in Vertica.

The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision. Forrester took a multistep approach to evaluate the impact that Vertica can have on an organization.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Micro Focus and delivered by Forrester Consulting. It is not meant to be used as a competitive analysis.

Forrester makes no assumptions as to the potential ROI that other organizations will receive. Forrester strongly advises that readers use their own estimates within the framework provided in the study to determine the appropriateness of an investment in Vertica.

Micro Focus reviewed and provided feedback to Forrester, but Forrester maintains editorial control over the study and its findings and does not accept changes to the study that contradict Forrester's findings or obscure the meaning of the study.

Micro Focus provided the customer names for the interviews but did not participate in the interviews.



DUE DILIGENCE

Interviewed Micro Focus stakeholders and Forrester analysts to gather data relative to Vertica.



CUSTOMER INTERVIEWS

Interviewed four decision-makers at organizations using Vertica to obtain data with respect to costs, benefits, and risks.



COMPOSITE ORGANIZATION

Designed a composite organization based on characteristics of the interviewed organizations.



FINANCIAL MODEL FRAMEWORK

Constructed a financial model representative of the interviews using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the interviewed organizations.



CASE STUDY

Employed four fundamental elements of TEI in modeling the investment impact: benefits, costs, flexibility, and risks. Given the increasing sophistication of ROI analyses related to IT investments, Forrester's TEI methodology provides a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

The Micro Focus Vertica Customer Journey

■ Drivers leading to the Vertica investment

| Interviewed Organizations | | | |
|---------------------------|--------|--|---------------|
| Industry | Region | Interviewee | Revenue |
| Media | Global | Engineering director of reporting | \$120 million |
| Manufacturing | Global | VP of data and analytics (data analysis division) | \$10 billion |
| Telecommunications | Global | IT director | \$20 billion |
| Manufacturing | Global | Lead analytics architect (field services division) | \$10 billion |

KEY CHALLENGES

Each of the interviewees' organizations had different reasons for looking for a new data platform solution. Some were having data explosion challenges while others were experiencing performance issues.

Decision-makers from all four organizations wanted a data platform with built-in machine learning to support critical corporate digital transformation initiatives. Data integration challenges, the need to more quickly ingest more data, and cost escalation were also major factors.

The interviewees said their organizations struggled with common challenges, including:

- **Lack of integrated data and associated insights.** Interviewees said their companies had blends of scattered data, cloud and on-premises databases, and relational and unstructured data. Decision-makers were unable to see unified views to truly understand their businesses and to make better decisions.
- **Scale with slow response times.** Two of the organizations use more than a petabyte (PB) of data, while decision-makers from another expected to see 10 times of data growth due to a new use case. Each of the interviewees noted that query response times limited their organization's solution opportunities.

- **High solution costs.** Three interviewees spoke about licensing costs that had grown significantly in recent years. Using alternatives to achieve faster response times would have led to even higher costs.
- **No standardized analytical platform.** Interviewees said their organizations have more demand for advanced analytics and machine-learning capabilities in their applications, but they didn't have easy and standard means to effectively build them into applications.

SOLUTION REQUIREMENTS

The interviewees' organizations searched for a solution that could:

- **Scale.** Data requirements for the interviewees' companies continue to grow due to internet of things (IoT), social media data, etc.
- **Increase response speed.** Interviewees said their organizations required consistent and fast response times for the solutions they already had to meet the requirements of business-critical solutions they were planning.
- **Increase ingestion speed.** The organizations needed a solution capable of rapid data ingestion due to a rise in data sources, the need for

streaming data, and applications requiring real-time information.

- **Improve integration.** Each of the interviewees' companies had a goal of centralizing most of its data logically on one data platform and integrating data between cloud and on-premises, across regions, and even across different data structures (e.g., columnar, relational, unstructured).
- **Lower maintenance and solution development efforts.** Decision-makers were aware that their organizations' data platforms were maturing to provide simplified data ingestion, lower maintenance costs, and built-in query optimization capabilities.
- **Lower costs.** Decision-makers felt they could find a better data platform solution at a lower cost.
- **Provide business analytics as a competitive advantage.** Interviewees said that building machine learning into their organizations' data platforms was very important to them in accomplishing digital-transformation requirements and staying ahead of competitors in significant areas.

COMPOSITE ORGANIZATION

Based on the interviews, Forrester constructed a TEI framework, a composite company, and an ROI analysis that illustrates the areas financially affected. The composite organization is representative of the interviewees' organizations, and it is used to present the aggregate financial analysis in the next section. The composite organization has the following characteristics:

Description of composite. The composite organization is a global corporation with a primary and relatively current data platform with more than 20% of key data sources yet to be integrated into the

data platform. Decision-makers plan to conduct a major initiative that depends on having a stronger data platform than its previous solution. The platform needs to: combine data (physically and logically) from multiple data sources with speed and scalability; have strong, built-in analytics; provide faster data ingestion; and lower maintenance and development labor requirements.

Deployment characteristics. The composite organization uses approximately 1.5 PBs of data in its current data platform, and decision-makers expect to expand the new data platform by 20% per year due to a combination of natural growth and integration of new data sources. The major initiative will include global data in the cloud and on-premises, in the main data platform, in relational databases, and in unstructured databases.

Key assumptions

- **40 clusters (1.5 PBs)**
- **20% annual data growth**
- **One primary data platform and multiple other sources**
- **Major initiative (field service example)**

Analysis Of Benefits

■ Quantified benefit data as applied to the composite

| Total Benefits | | | | | | |
|----------------|--|-------------|-------------|-------------|--------------|---------------|
| Ref. | Benefit | Year 1 | Year 2 | Year 3 | Total | Present Value |
| Atr | Elimination of prior data warehouse solution and reduction of data storage costs | \$1,485,675 | \$1,782,810 | \$2,139,372 | \$5,407,857 | \$4,431,352 |
| Btr | Labor savings due to reduction in dedicated database administrators | \$337,500 | \$450,000 | \$450,000 | \$1,237,500 | \$1,016,811 |
| Ctr | Revenue increase due to ML products and ML-driven productivities | \$450,000 | \$1,200,000 | \$1,320,000 | \$2,970,000 | \$2,392,562 |
| Dtr | Field-service application cost savings | \$421,875 | \$1,392,188 | \$1,531,406 | \$3,345,469 | \$2,684,659 |
| Etr | Value of more decisionable business insights with less effort | \$309,375 | \$850,781 | \$1,684,547 | \$2,844,704 | \$2,250,000 |
| | Total benefits (risk-adjusted) | \$3,004,425 | \$5,675,779 | \$7,125,326 | \$15,805,529 | \$12,775,384 |

ELIMINATION OF PRIOR DATA WAREHOUSE SOLUTION AND REDUCTION OF DATA STORAGE COSTS

Evidence and data. Interviewees shared information about how the prospect of saving in areas like licensing and data storage costs helped drive their organizations' move to Vertica.

After investing in Vertica, their organizations saved on licensing compared to the cost of their prior data warehouse. Vertica provided:

- Pricing flexibility based on TBs or nodes.
- The ability to query across multiple data stores with high performance, which sometimes eliminated the need for data duplication at a reduced licensing cost.
- Free backup data and some duplicate clusters for concurrency.
- Free development and testing databases.

“We take advantage of Vertica’s external table capabilities, allowing us to query across multiple data stores. We have a multiple-PB table that resides on [an open-source software framework] that would be extremely expensive to duplicate to accomplish joins for fast analysis. In addition to database costs and additional licensing, there would be additional labor involved and a challenge to constantly validate the data.”

IT director, telecommunications

The organizations also saved on storage costs because Vertica provided:

- Data compression averaging 2.5 times within Vertica’s columnar database.

- The ability to query across multiple data stores with high performance, which reduced the need for data duplication.
- Optional node pricing with unlimited data size.

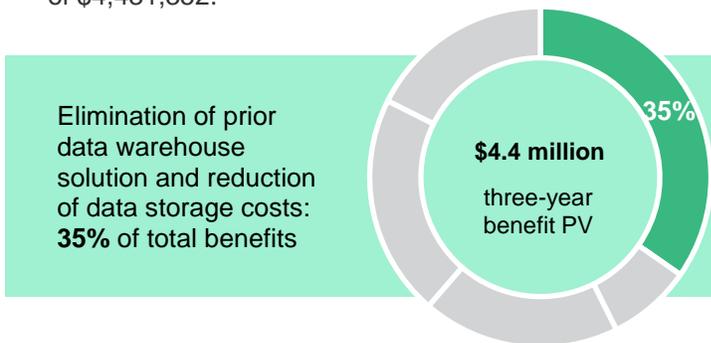
Modeling and assumptions. Forrester assumes the following about the composite organization:

- Prior data warehouse (DW) licensing is based upon TBs.
- The production data starts at 1.5 PBs and grows 20% per year. This equates to 40 clusters with a fully loaded storage cost of \$1,500 per month per cluster.
- Forrester applied a 25% increase in additional licensing costs for the organization's prior data warehouse because Vertica does not charge for test and development databases, backup and recovery databases, and up to three clusters of concurrent storage.

Risks. Forrester identified the following risks associated with savings associated with eliminating the prior DW and reductions on data storage costs:

- Actual licensing agreements with prior data warehouse vendors and negotiated terms with Vertica.
- Differences in storage costs.
- Differences in use of test, development, backup and recovery, and concurrent data.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$4,431,352.



| Elimination Of Prior Data Warehouse Solution And Reduction Of Data Storage Costs | | | | | |
|--|--|--|--|-------------|-------------|
| Ref. | Metric | Calculation | Year 1 | Year 2 | Year 3 |
| A1 | Prior cost of production data warehouse licensing for 1.5Pb of storage | Year 1: Composite Years 2 and 3: A1 _{PY} +20% growth | \$975,000 | \$1,170,000 | \$1,404,000 |
| A2 | Prior cost for 1.5Pb of data storage (starting with 40 clusters at a cost of \$1,500 per month per cluster) | Year 1: 40*\$1,500*12 Years 2 and 3: A2 _{PY} +20% growth | \$720,000 | \$864,000 | \$1,036,800 |
| A3 | Current cost with 2.5x compression | A2/2.5 | \$288,000 | \$345,600 | \$414,720 |
| A4 | Data storage cost savings with Vertica due to data compression | A2-A3 | \$432,000 | \$518,400 | \$622,080 |
| A5 | License savings due no charge for test/development, backup/recovery, and concurrency (limit 3 clusters) storage (estimated at 25% of production licensing) | Assumption | \$243,750 | \$292,500 | \$351,000 |
| At | Elimination of prior data warehouse solution and reduction of data storage costs | A1+A4+A5 | \$1,650,750 | \$1,980,900 | \$2,377,080 |
| | Risk adjustment | ↓10% | | | |
| Atr | Elimination of prior data warehouse solution and reduction of data storage costs (risk-adjusted) | | \$1,485,675 | \$1,782,810 | \$2,139,372 |
| Three-year total: \$5,407,857 | | | Three-year present value: \$4,431,352 | | |

LABOR SAVINGS DUE TO REDUCTION IN DEDICATED DATABASE ADMINISTRATORS

Evidence and data. Interviewees shared numerous ways that Vertica reduced labor demands. They said Vertica is more stable compared to their organizations’ prior data warehouses and it reduced monitoring and maintenance costs.

The IT director at the telecommunications company said: “We felt that our biggest risk with Vertica was likely the stability of the Vertica platform. We have had no issues with Vertica in the last two years, while our other data stores have about an outage each quarter.”

Interviewees also said Vertica has easy-to-use tools that support all components of data warehouse development and administration. They spoke about the ease of integration, the ease of performing parallel data loads, the easier operability of extract, transform, and load (ETL) tools, and the ease of using Vertica in Eon mode that employs a separation of compute from storage architecture.

“One of the features that I had underestimated is the fully parallel load. It is not only extremely fast, but it is also very easy to do. For other databases, we have to use complex tools and go through a lot of effort to prepare the data.”

IT director, telecommunications

Modeling and assumptions. Forrester assumes the following about the composite organization:

- The Vertica implementation halves the organization’s need for database administrators (DBAs). This allows decision-makers to reallocate labor resources.

“I find the ease of integration and the natural speed to be particularly valuable. In fact, [Vertica] is a highly efficient data platform. We don’t need to do very much optimizing. Vertica’s self-sufficiency makes it possible for us to spend our time and resources on activities that provide business value.”

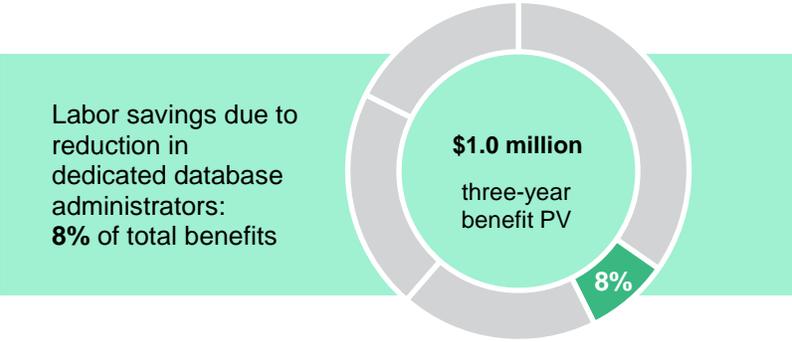
Lead analytics architect, manufacturing

- The organization initially used six DBAs with its prior data warehouse and added one DBA each year in parallel with the 20% data growth.

Risks. Forrester identified the following risks associated with reducing the labor cost of having dedicated database administrators.

- The organization’s reliance on database administrators.

Results. To account for this risk, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$1,016,811.



“Vertica’s stability and automation capabilities allow us to not have dedicated DBAs or infrastructure folks. We originally had concerns about the extent that we would have to manage the deployment in the cloud. It turned out that we have automated all operational aspects that we were concerned about.”

VP of data and analytics, manufacturing

Labor Savings Due To Reduction In Dedicated Database Administrators

| Ref. | Metric | Calculation | Year 1 | Year 2 | Year 3 |
|--------------------------------------|---|-------------|--|-----------|-----------|
| B1 | Database administrators required with previous data warehouse solution | Composite | 6 | 7 | 8 |
| B2 | Database administrators required with Vertica | Interviews | 3 | 3 | 4 |
| B3 | Reduced number of database administrators | B1-B2 | 3 | 4 | 4 |
| B4 | Annual cost | Payscale | \$125,000 | \$125,000 | \$125,000 |
| Bt | Labor savings due to reduction in dedicated database administrators | B3*B4 | \$375,000 | \$500,000 | \$500,000 |
| | Risk adjustment | ↓10% | | | |
| Btr | Labor savings due to reduction in dedicated database administrators (risk-adjusted) | | \$337,500 | \$450,000 | \$450,000 |
| Three-year total: \$1,237,500 | | | Three-year present value: \$1,016,811 | | |

REVENUE INCREASE DUE TO ML PRODUCTS AND ML-DRIVEN PRODUCTIVITIES

Evidence and data. Interviewees spoke about the value of having advanced analytics and ML built into Vertica and the ease of use it provides. Decision-makers have identified new revenue-generating use cases due to this success.

“Originally, our top priority in using Vertica was field-service efficiency. That quickly morphed into maximizing customer value. We are now expanding to manufacturing as well as research and development. Integrating field-service data with existing data is leading to better products. We now have specialized multifunctional teams that focus on use cases to create ML models.”

Lead analytics architect, manufacturing

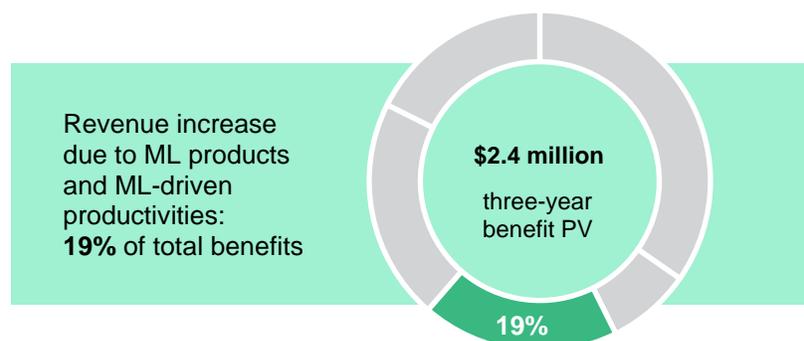
Modeling and assumptions. Forrester assumes the following about the composite organization:

- Revenue growth accounts for 7.5% of the year-over-year (YoY) revenue increases.

Risks. Forrester identified the following risks associated with revenue and productivity improvements due to Vertica’s machine learning:

- The opportunities for and magnitude of potential machine learning benefits.
- Potential corporate cultural challenges to engage multiple organizations to identify use cases and to develop solutions.

Results. To account for these risks, Forrester adjusted this benefit downward by 20%, yielding a three-year, risk-adjusted total PV of \$2,392,562.



| Revenue Increase Due To ML Products And ML-Driven Productivities | | | | | |
|--|--|-------------|--|-----------------|-----------------|
| Ref. | Metric | Calculation | Year 1 | Year 2 | Year 3 |
| C1 | Annual revenue | Composite | \$1,000,000,000 | \$1,100,000,000 | \$1,210,000,000 |
| C2 | Revenue growth (YoY) | Composite | \$75,000,000 | \$100,000,000 | \$110,000,000 |
| C3 | Revenue growth associated with ML-enabled by Vertica (percentage) | Assumption | 7.50% | 15.00% | 15.00% |
| C4 | Revenue growth associated with ML-enabled by Vertica (dollars) | C2*C3 | \$5,625,000 | \$15,000,000 | \$16,500,000 |
| C5 | Net margin | Assumption | 10% | 10% | 10% |
| Ct | Revenue increase due to ML products and ML-driven productivities | C4*C5 | \$562,500 | \$1,500,000 | \$1,650,000 |
| | Risk adjustment | ↓20% | | | |
| Ctr | Revenue increase due to ML products and ML-driven productivities (risk-adjusted) | | \$450,000 | \$1,200,000 | \$1,320,000 |
| Three-year total: \$2,970,000 | | | Three-year present value: \$2,392,562 | | |

FIELD-SERVICE APPLICATION COST SAVINGS

Evidence and data. Each of the interviewees noted that their organization’s decision-makers wanted to use Vertica for use cases that would give them a competitive advantage in their particular industry. Each spoke about their organization’s success with its primary use case and its expanded use of Vertica to provide other business benefits.

- One interviewee said Vertica transformed their organization’s customer services from being 5% proactive to 30% proactive with predictive maintenance enhancements.
- Remote monitoring increased more than 20 times due to improved ingestion and the speed of Vertica’s ML.
- First-visit fixes or remote fixes improved from approximately 50% to more than 80% due to ML providing more accuracy in identifying problems, providing recommended solutions, making assignments based on required skills, and ensuring the proper parts are supplied to the service tech.

- Vertica allowed decision-makers to identify training needs for service techs and clients so they could properly use equipment. Client training leads to actions to improve business outcomes and to reduce future issues.

“For enterprise devices, when a customer calls our service desk, there is an automatic transfer of data from all customer devices to Vertica. A frontline diagnostic dashboard is automatically populated for our service engineer to help them understand the problem and to quickly take the right action, such as quickly getting the right field-service engineer assigned to go on-site with the right parts.”

Lead analytics architect, manufacturer

Modeling and assumptions. Forrester selected a field-service use case due to commonality across the interviewees' organizations and the general appropriateness to many customer-focused roles.

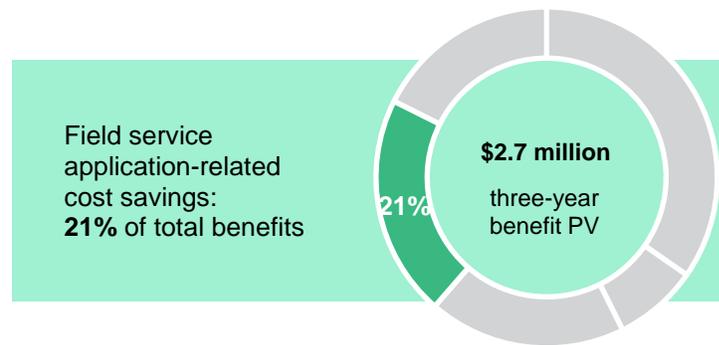
Forrester assumes the following about the composite organization:

- The focus-use (field service) case cost is estimated to comprise 7.5% of the organization's revenue.
- The net cost savings is estimated to be 7.5% of the organization's cost.
- With design, development, and implementation all essential to success toward delivering a quality solution, Forrester attributes 25% of the value of this benefit to Vertica due to its fast ingestion, embedded ML, speed, and scale.

Risks. Forrester identified the following risks associated with the field service application cost savings.

- The size and value of major ML applications will vary.
- Planning, design, development, and implementation are essential to success.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$2,684,659.



| Field-Service Application Cost Savings | | | | | |
|--|--|-------------|--|-----------------|-----------------|
| Ref. | Metric | Calculation | Year 1 | Year 2 | Year 3 |
| D1 | Annual revenue | Composite | \$1,000,000,000 | \$1,100,000,000 | \$1,210,000,000 |
| D2 | Cost of field service (percentage of revenue) | Assumption | 7.5% | 7.5% | 7.5% |
| D3 | Cost of field-service organization | D1*D2 | \$75,000,000 | \$82,500,000 | \$90,750,000 |
| D4 | Savings from cost-reduction initiative | Interviews | 2.5% | 7.5% | 7.5% |
| D5 | Savings attributed to Vertica parallel load, embedded ML, speed, and scale | Assumption | 25% | 25% | 25% |
| Dt | Field-service application cost savings | D3*D4*D5 | \$468,750 | \$1,546,875 | \$1,701,563 |
| | Risk adjustment | ↓10% | | | |
| Dtr | Field-service application cost savings (risk-adjusted) | | \$421,875 | \$1,392,188 | \$1,531,406 |
| Three-year total: \$3,345,469 | | | Three-year present value: \$2,684,659 | | |

VALUE OF MORE DECISIONABLE BUSINESS INSIGHTS WITH LESS EFFORT

Evidence and data. Interviewees said their organizations benefit from the ease with which Vertica integrates data, its internal ML capabilities, and its speed to improve on prior data insights capabilities and to create new ones.

“We have large, monitored processes that used to take 10 minutes, and now they take less than 2 minutes. It makes our people more effective, and it has allowed us to expand our use cases.”

Engineering director of reporting, media

Modeling and assumptions. Forrester assumes the following about the composite organization:

- The areas of opportunities include all costs excluding the field-service costs presented earlier.
- Vertica-credited improvements are cumulative. They start at .05% in the Year 1 and grow to .225% by Year 3.

Risks. Forrester identified the following risks associated with the value of more decisionable business insights with less effort:

- The level of data integration, analysis capabilities, and business intelligence (BI) focus prior to using Vertica.
- The priority for change within the organization.

Results. To account for these risks, Forrester adjusted this benefit downward by 25%, yielding a three-year, risk-adjusted total PV of \$2,250,000.



| Value Of More Decisionable Business Insights With Less Effort | | | | | |
|---|---|-----------------|--|-----------------|-----------------|
| Ref. | Metric | Calculation | Year 1 | Year 2 | Year 3 |
| E1 | Annual revenue | Composite | \$1,000,000,000 | \$1,100,000,000 | \$1,210,000,000 |
| E2 | Net margin plus cost of field service (percentage) | Assumption | 17.5% | 17.5% | 17.5% |
| E3 | Additional areas with potential improvement | $E1 * (1 - E2)$ | \$825,000,000 | \$907,500,000 | \$998,250,000 |
| E4 | Gross improvement estimates translated to percentages (cumulative) | Assumption | 0.050% | 0.125% | 0.225% |
| Et | Value of more decisionable business insights with less effort | $E3 * E4$ | \$412,500 | \$1,134,375 | \$2,246,063 |
| | Risk adjustment | ↓25% | | | |
| Etr | Value of more decisionable business insights with less effort (risk-adjusted) | | \$309,375 | \$850,781 | \$1,684,547 |
| Three-year total: \$2,844,704 | | | Three-year present value: \$2,250,000 | | |

“Vertica is a major part of our best practices strategy for analytics. We have been able to automate 80% of our business analysis, allowing us to focus on providing additional insights.”

VP of data and analytics, manufacturing

UNQUANTIFIED BENEFITS

Interviewees said their organizations experienced additional benefits that they were not able to quantify. These include:

- **Broad level of comfort.** Interviewees said their organizations’ decision-makers were able to focus on providing value rather than worrying about costs, scaling issues, response-time issues, integration challenges, ingestion speeds, or monitoring. They have been able to focus on immediate business value needs and plan for future projects.
- **Proof of concept shows proof of value.** Each of the interviewees’ companies had successful POCs. Vertica was able to provide scale, ingestion speed, integration, response-time speed, and ease of use as well as meet other company-specific needs.
- **Unified data architecture that does more than provide cost savings.** The lead analytics architect in the manufacturing industry said: “A unified analytical platform is crucial to us. We have the complexity of being a very large company that has grown by a lot of acquisitions. The ability to unify our data in Vertica and solving the disparate data problem is a game changer.”
- **Having Vertica as part of the team.** Interviewees referred to Vertica as a partner that provides access to knowledgeable engineers. The IT director in the telecommunications industry said: “I really enjoy working with Vertica. [Vertica] gives us access to our engineers. It has been a really great partnership. [Vertica representatives] are my partners.”

FLEXIBILITY

The value of flexibility is unique to each organization. There are multiple scenarios in which an organization might implement Vertica and later realize additional uses and business opportunities, including:

- **Vertica’s licensing is flexible.** Vertica’s pricing is based on TBs or nodes. Vertica doesn’t charge based on where the data is.

“Vertica is the most flexible software company that I have ever worked with. For example, my license is totally portable. I can run it anywhere. I am licensed to run something in the cloud, in a US data center, in a European data center, or wherever.”

IT director, telecommunications

- **The ease-of-use provides additional benefits.** Interviewees said Vertica allows their organizations to do things they weren’t able to do before, and that includes trying things out easily and cost effectively.

“We are able to spin up clusters, shut down clusters, or move data between clusters at a high speed. This is very beneficial for development and testing.”

VP of data and analytics, manufacturing

Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in [Appendix A](#)).

Analysis Of Costs

■ Quantified cost data as applied to the composite

| Total Costs | | | | | | | |
|-------------|--|----------|-----------|-------------|-------------|-------------|---------------|
| Ref. | Cost | Initial | Year 1 | Year 2 | Year 3 | Total | Present Value |
| Ftr | Implementation, expansion, and licensing | \$82,500 | \$880,000 | \$1,017,500 | \$1,215,500 | \$3,195,500 | \$2,636,632 |
| | Total costs (risk-adjusted) | \$82,500 | \$880,000 | \$1,017,500 | \$1,215,500 | \$3,195,500 | \$2,636,632 |

IMPLEMENTATION, EXPANSION, AND LICENSING

Evidence and data. Interviewees described smooth implementations without surprises, expansions that went beyond what they expected, and licensing that supported building out data analytics platforms that exceeded what they had before — all while reducing costs.

- Regarding implementation, interviewees referred to the ease of ingesting with multiple threads and ELT (extraction, load, transformation) — which they described as having the ability to quickly load data into Vertica and then do the transformations quickly.
- Speaking about the built-in ML, the VP of data and analytics in the manufacturing industry said: “Vertica is further along than anyone else in terms of building low-level functions to do machine learning right in the database. This allows us to push more and more load to Vertica.”
- Each of the interviewees said Vertica quickly added value and that their pivot to using Vertica for additional use cases is driving growth based value-add projects.
- Each of the interviewees’ organizations reduced licensing costs for its starting data volumes with Vertica. Some had major requirements for

backup and recovery, key workload concurrency, and major data use in their test and development environments, and all came at no cost with Vertica licensing. Most of the organizations benefitted by not having different licensing based on where its Vertica data resides. Vertica’s unified data architecture allowed the organizations to reduce the cost of licensing (among other savings) while providing integration with other data stores.

Modeling and assumptions. Forrester assumes the following about the composite organization:

- The original implementation and ongoing expansion include a combination of internal labor costs and some Vertica consulting costs.
- Licensing is based on 1.5 PBs of uncompressed data and 40 nodes.
- Data volume grows by 20% in Years 2 and 3.

Risks. Forrester identified the following risks associated with the implementation, expansion, and licensing costs.

- The cost of the implementation will vary based on complexity, the skill of internal employees, etc.
- Expansion costs will vary based on requirements.
- Licensing costs will vary based on various storage and usage requirements.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$2,636,632.

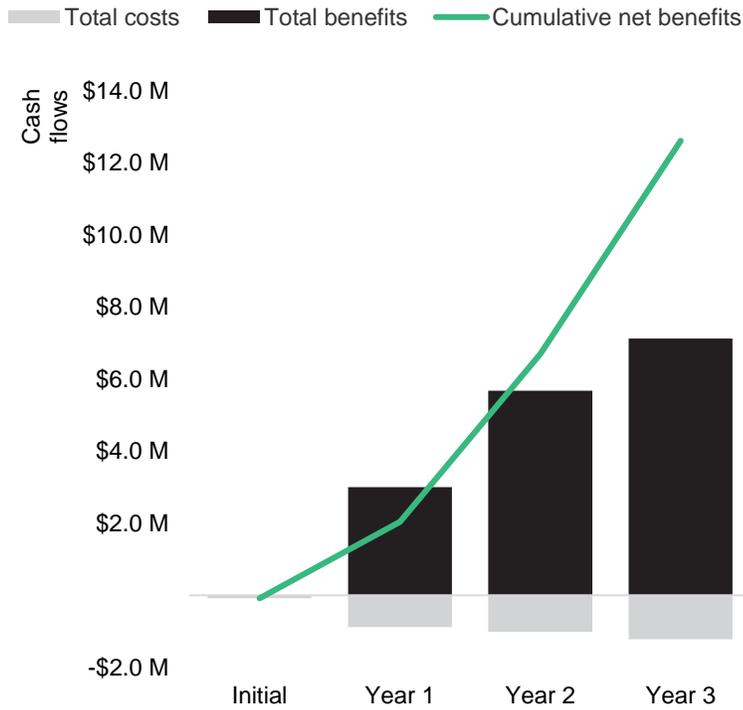
Implementation, Expansion, And Licensing

| Ref. | Metric | Calculation | Initial | Year 1 | Year 2 | Year 3 |
|--------------------------------------|--|-------------|--|-----------|-------------|-------------|
| F1 | Implementation and expansion cost | Composite | \$75,000 | \$50,000 | \$25,000 | \$25,000 |
| F2 | Licensing with 20% YoY growth | Composite | \$0 | \$750,000 | \$900,000 | \$1,080,000 |
| Ft | Implementation, expansion, and licensing | F1+F2 | \$75,000 | \$800,000 | \$925,000 | \$1,105,000 |
| | Risk adjustment | ↑10% | □ | | | |
| Ftr | Implementation, expansion, and licensing (risk-adjusted) | | \$82,500 | \$880,000 | \$1,017,500 | \$1,215,500 |
| Three-year total: \$3,195,500 | | | Three-year present value: \$2,636,632 | | | |

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

Cash Flow Chart (Risk-Adjusted)



The financial results calculated in the Benefits and Costs sections can be used to determine the ROI, NPV, and payback period for the composite organization's investment. Forrester assumes a yearly discount rate of 10% for this analysis.

These risk-adjusted ROI, NPV, and payback period values are determined by applying risk-adjustment factors to the unadjusted results in each Benefit and Cost section.

Cash Flow Analysis (Risk-Adjusted Estimates)

| | Initial | Year 1 | Year 2 | Year 3 | Total | Present Value |
|-------------------------|------------|-------------|---------------|---------------|---------------|---------------|
| Total costs | (\$82,500) | (\$880,000) | (\$1,017,500) | (\$1,215,500) | (\$3,195,500) | (\$2,636,632) |
| Total benefits | \$0 | \$3,004,425 | \$5,675,779 | \$7,125,326 | \$15,805,529 | \$12,775,384 |
| Net benefits | (\$82,500) | \$2,124,425 | \$4,658,279 | \$5,909,826 | \$12,610,029 | \$10,138,752 |
| ROI | | | | | | 385% |
| Payback period (months) | | | | | | <6 months |

Appendix A: Total Economic Impact

Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

TOTAL ECONOMIC IMPACT APPROACH

Benefits represent the value delivered to the business by the product. The TEI methodology places equal weight on the measure of benefits and the measure of costs, allowing for a full examination of the effect of the technology on the entire organization.

Costs consider all expenses necessary to deliver the proposed value, or benefits, of the product. The cost category within TEI captures incremental costs over the existing environment for ongoing costs associated with the solution.

Flexibility represents the strategic value that can be obtained for some future additional investment building on top of the initial investment already made. Having the ability to capture that benefit has a PV that can be estimated.

Risks measure the uncertainty of benefit and cost estimates given: 1) the likelihood that estimates will meet original projections and 2) the likelihood that estimates will be tracked over time. TEI risk factors are based on "triangular distribution."

The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1 that are not discounted. All other cash flows are discounted using the discount rate at the end of the year. PV calculations are calculated for each total cost and benefit estimate. NPV calculations in the summary tables are the sum of the initial investment and the discounted cash flows in each year. Sums and present value calculations of the Total Benefits, Total Costs, and Cash Flow tables may not exactly add up, as some rounding may occur.



PRESENT VALUE (PV)

The present or current value of (discounted) cost and benefit estimates given at an interest rate (the discount rate). The PV of costs and benefits feed into the total NPV of cash flows.



NET PRESENT VALUE (NPV)

The present or current value of (discounted) future net cash flows given an interest rate (the discount rate). A positive project NPV normally indicates that the investment should be made, unless other projects have higher NPVs.



RETURN ON INVESTMENT (ROI)

A project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits less costs) by costs.



DISCOUNT RATE

The interest rate used in cash flow analysis to take into account the time value of money. Organizations typically use discount rates between 8% and 16%.



PAYBACK PERIOD

The breakeven point for an investment. This is the point in time at which net benefits (benefits minus costs) equal initial investment or cost.

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