

ECONOMIC VALIDATION

# Analyzing the Economic Impact of Ascend Data Automation

Ascend Data Pipeline Automation Platform Can Accelerate  
Your Time to Insight, Quality of Insight, and Cost of Insight

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## Introduction

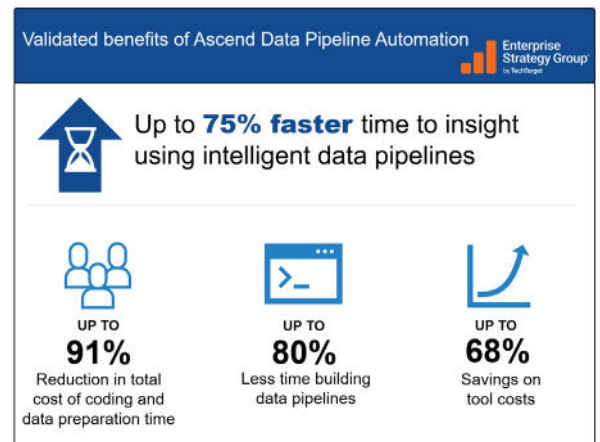
Driven by the business benefits that it delivers, data analytics now ranks as a top-three area for enterprise IT investment.<sup>1</sup> While every organization is asking themselves, “How can I do more with less this year,” organizations that are on a path to digital modernization realize that future revenue and improved overall profitability trends are contained in their stored data. However, many find that the complexity of preparing data for analysis is imposing heavy overhead and severely hampering the effectiveness of analytics teams. This results in business decisions being made based on stale or incomplete data. Too often, these problems are caused by the inflexibility of the mechanisms used to collect and prepare raw data for use as input to analytics tools. As enterprises attempt to increase their use of analytics and face the complex challenge of storing data in a protected but usable state, these challenges will become worse.

TechTarget’s Enterprise Strategy Group (ESG) analyzed the economic benefits of the Ascend Data Pipeline Automation Platform and how the platform can help organize disparate data sources and provide insights on more complete and authoritative data sets. ESG found that the Ascend Data Pipeline Automation Platform delivers multiple economic benefits, including major improvements to the productivity of data analytics teams, as well as reduced overall infrastructure and tool costs and greater pipeline reliability.

This Economic Validation focuses on the quantitative and qualitative benefits organizations can expect from the Ascend Data Pipeline Automation Platform. Insights contained in this analysis were gathered from analyst research, publicly available research and case studies, and the creation of a financial model that was used to project benefits across organizations of multiple sizes and with varying workflows. The benefits included in this analysis are based on a combination of the capabilities of the Ascend Data Pipeline Automation Platform and best practices in storing and querying data.

## Challenges

Enterprise usage of data analytics continues to grow, and the field has become a top area of IT expenditure. Improvement of analytics for business intelligence and customer insight is the third most commonly cited business initiative that respondents expect will drive the most technology spending in their organization in 2023, behind strengthening cybersecurity and improving customer experience.<sup>2</sup> The desire to pull actionable insights from data is clear; however, the process is often beyond the capabilities of many organizations. Enterprise Strategy Group research surveyed 338 respondents and found the top initiatives to improve data usage regardless of location (see Figure 1).<sup>3</sup>



<sup>1</sup> Source: Enterprise Strategy Group Research Report, [2023 Technology Spending Intentions Survey](#), November 2022.

<sup>2</sup> Ibid.

<sup>3</sup> Source: Enterprise Strategy Group Research Report, [Cloud Analytics Trends](#), March 2022.

Figure 1. Areas Where Organizations Are Trying to Improve Data Analytics

**What is your organization doing to improve its usage of data regardless of where it is located? (Percent of respondents, N=338, multiple responses accepted)**



Source: Enterprise Strategy Group, a division of TechTarget, Inc.

The collection and preparation of data used for analytics is achieved by building data pipelines that ingest raw data and transform it in stages before loading it into data warehouses, other repositories, or analytics platforms. The problem in building those pipelines is that data can originate in multiple on-premises or public cloud locations but must be transferred to a single location for analysis. The wide range of types of data sources includes databases, data warehouses, CRM and ERP systems, IoT sensors, and mobile applications. Structured and unstructured data from these sources might need to be merged, and reformatting is a typical step within data transformation. This is costly and time-consuming.

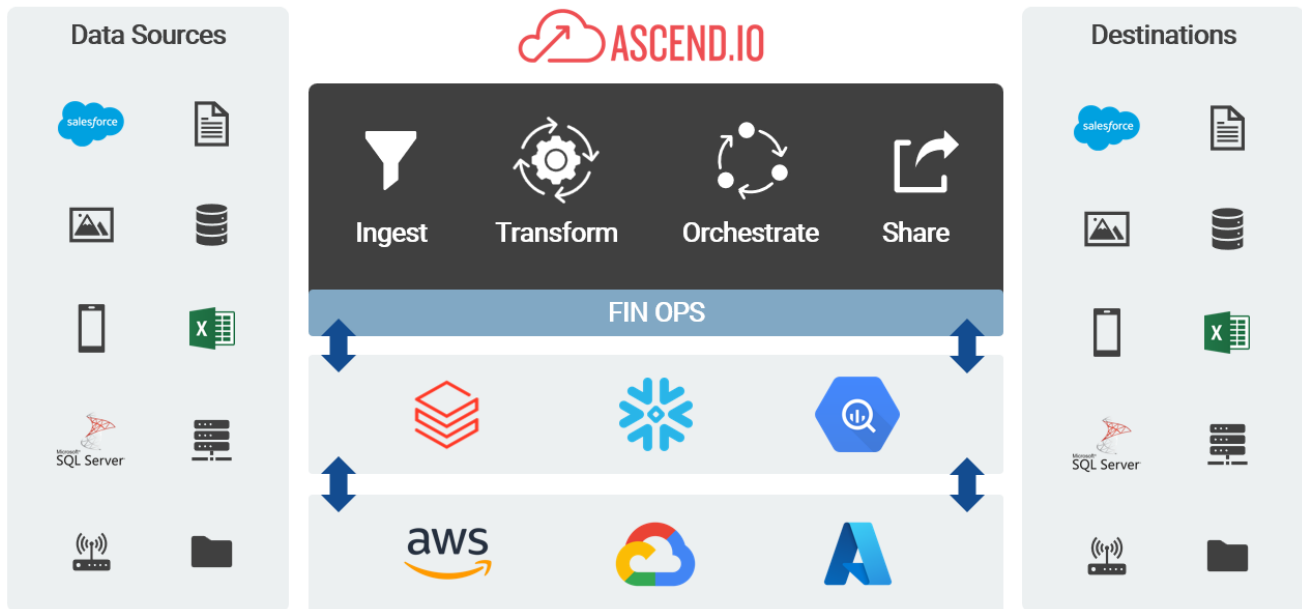
Other data transformation steps include normalization and deduplication, anonymization or other changes required to meet data privacy regulations, and validation or detection of anomalous data. To fulfill all these tasks and achieve sufficient data throughput, multiple pipelines must operate in parallel and feed each other via scheduled links. As a result, pipelines are complex entities that until now have required specialist skills to create and maintain.

The complexity of pipelines can also make them prone to failure when new data sources or changes to transformation steps are introduced. When data pipelines fail, analytics processes stop, reports are delayed, and unhappy business users are forced to make decisions on stale or incomplete data analyses. However, an even greater negative impact of pipeline complexity is that data engineering teams are frequently unable to keep pace with the demands of analytics teams regarding changes to transformation steps, access to data from new sources, or new combinations of data from existing sources. Analytics teams could have to wait weeks or months for the data they have requested or spend time themselves assisting in the modification of pipelines.

## The Solution: The Ascend Data Pipeline Automation Platform

The Ascend Data Pipeline Automation Platform is a highly extensive software platform designed to automate all aspects of data engineering across environments or ecosystems that can span multiple on-premises and public cloud data sources and end delivery points.

**Figure 2.** The Ascend Data Pipeline Automation Platform



Source: Ascend and Enterprise Strategy Group, a division of TechTarget, Inc.

The Ascend Data Pipeline Automation Platform provides automated services encompassing the end-to-end creation and running of intelligent data pipelines from ingestion through data transformation, orchestration, and delivery, with real-time operational monitoring or observability and reporting. The platform enables data engineers to design intelligent pipelines using either a visual interface or code-based command line interface to the Ascend orchestration engine that reduces coding overheads by using a declarative framework. Data transformations can be defined using SQL or Python languages, eliminating the need for specialist skills. Automated orchestration functions can include prioritizing workloads to maximize throughput and efficient use of cloud resources, and all data processing is performed via pushdown into the customer’s cloud data platform of choice.

**“The value that Ascend unlocks is stuff that couldn’t be done before. The iteration and speed at which the analysts can take on projects was impossible before Ascend.”**

Data ingestion from a wide range of sources and formats is completed using multiple pre-built connectors—or custom connectors, if required—and the platform can create multi-cloud data pipelines. Many of the services provided by the platform are multifeatured, and, as an example, the cross-cloud pipelines can be optimized to reduce resource usage and data ingress/egress costs. Operational observability includes visual navigation of pipelines and error alerting. Output to analytics tools is via materialized tables in the cloud data platform and an Ascend API/SDK. In addition, the platform can perform reverse-ETL via replicating data to multiple endpoints, including operational databases. Access controls can be used to regulate which analytics teams or members can access specific dataflows within Ascend.

# Enterprise Strategy Group Economic Validation

Enterprise Strategy Group (ESG) completed a quantitative economic analysis to understand the impact that the Ascend Data Pipeline Automation Platform can have on the ability of a business to better meet its business and IT goals. ESG's Economic Validation process is a proven method for understanding, validating, quantifying, and modeling the economic value propositions of a product or solution. The process leverages ESG's core competencies in market and industry analysis, forward-looking research, and technical/economic validation.

## Ascend Data Pipeline Automation Platform Economic Overview

Enterprise Strategy Group's economic analysis revealed that the Ascend Data Pipeline Automation Platform provides significant savings and benefits in the following categories:

- **Faster time to insight:** Organizations are able to make decisions faster and on more complete data than before Ascend.
- **Consolidation of tool spend and cost containment:** The end-to-end nature of the platform enables teams to reduce the hard costs of data software and the lost productivity due to manual integrations between various parts of the stack.
- **Improved team productivity:** Reduction of both labor and skills requirements within the data engineering team lowers costs and increases agility.

### Faster Time to Insight

The Ascend Data Pipeline Automation Platform improves business agility and time to value from data insights by dramatically accelerating the creation of data pipelines, while also delivering pipelines that can be modified far faster than those created manually, providing significantly greater data throughput.

- **Faster building of pipelines:** Ascend users report major reductions in pipeline build times. Some have declared 80% reductions, while others have said processes that previously took hours to complete are accomplished in minutes using the platform.
- **Greater analytics productivity:** The Ascend platform increases the productivity of analytics teams by giving them faster access to data and support from their data engineering counterparts. An online retailer said the Ascend Data Pipeline Automation Platform enabled analytics projects to be completed at speeds that were previously impossible.
- **Faster data processing:** As well as allowing intelligent data pipelines to be rapidly built and modified, the Ascend platform also accelerates data analysis by creating pipelines that achieve high rates of throughput. One user reported a tenfold increase in the rate of data ingestion and transformation, and all customers interviewed shared how parallelization has positively impacted their operations. As stated in an interview, **"It is a fundamentally different world when you can run the same pipeline for all customers in 3 hours instead of running them in series for 8 hours per customer. Ascend has changed our business."**

**"We wanted to avoid having to pipeline manually by date, chain the workflows together, and build the mappings. We thought we had the right skills to make it happen but found that with the right tool (Ascend) we could make this happen in two months instead of the five it would have taken us internally."**

### Consolidation of Tool Spending and Cost Containment:

The Ascend platform replaces up to 4 distinct tools that are often required to build comprehensive data pipelines: data ingestion, data transformation, data orchestration, and data sharing (also known as Reverse ETL). Customers interviewed for this analysis reported cost containment factors, including:

- **Reduction in tool spend:** Multiple examples studied for this analysis have shown that the radically reduced time to build or modify intelligent pipelines directly improved analytics output. One analytics team leader said the Ascend platform enabled his staff to complete many short-term projects because they are no longer waiting for responses to data requests, while another stated the quality of their analytics went up substantially because of the ability to generate insights while the question was still fresh. In the past, questions often became stale while waiting for the ability to query data sets. In Enterprise Strategy Group's financial model, our sample company was able to **eliminate \$156K** in annual costs for tools.
- **Reduction in manual integration work:** Though some level of integration often exists between various third-party vendors of these functions, the connections tend to be tenuous at best. Our interviews found that an average of 25% of engineering time was spent on building and maintaining these integrations over time.

## Improved Team Productivity

The demand for data analytics to achieve business insights is increasing rapidly. Enterprises that do not automate their data pipelines are seeing costs rise sharply because of the consequent increases in the variety and number of data sources, as well as the volume of data that must be processed—some of which could require real-time processing rather than simpler batch processing.

Enterprise Strategy Group (ESG) has confirmed that the Ascend Data Pipeline Automation Platform can help control these costs, enabling more resources to be dedicated to business-enhancing activities, such as data analytics itself.

**“With Ascend, issues that used to take us half an hour to figure out are now down to 5 minutes. We are able to increase the output of our engineers exponentially because of Ascend and provide more insights for our business units.”**

- **Reduced coding and complexity during pipeline building:** Alongside the increasing diversity of data sources, the growing number of data pipelines required to ingest data is driving an exponential increase in the complexity of the relationships between those pipelines. Customers report that the Ascend platform can reduce time spent building pipelines by up to 80%.
- **Skill shift in maintenance and development:** While the platform substantially reduces the coding effort required to create pipelines, it also simplifies day-to-day operations and development tasks. One user said that because Ascend has made its pipeline architecture transparent, **“everybody on the team is now comfortable with doing the vast majority of transforms we need.”** Another IT organization said the simplicity of the platform has enabled staff to explore more modern alternatives to its currently deployed data warehouses and shared, **“We couldn't hire fast enough to cover our growth. Now, with Ascend, one engineer can do the work that used to take five people.”**
- **Improvement in engineer efficiency:** By consolidating the functionality into a single interface, Ascend is able to dramatically improve the speed at which engineers can build new pipelines and diagnose problems in existing ones. Rather than having to switch between multiple tools to understand the full context of a pipeline, engineers get a complete picture and are able to quickly explore the effect of their changes on the entire system. This efficiency increases the number of pipelines a data engineer can build and support. ESG interviews found *improvements in engineer efficiency between 500-700%*. Additionally, ESG found that the ramp-up period for new engineers was accelerated from an average of 6 months down to just weeks.
- **Shift to above-the-line work:** ESG found that Ascend customers are able to virtually eliminate much of the low-level work associated with data infrastructure. One customer put it perfectly, saying, **“We used to have to be infrastructure experts. We had armies of traditional engineers. Now, Ascend takes care of a lot of the mundane tasks while allowing us to focus up the stack to solve business problems.”**

## Enterprise Strategy Group Analysis

Enterprise Strategy Group (ESG) leveraged the information collected through vendor-provided material, public and industry knowledge of economics and technologies, and the results of customer interviews to create a TCO/ROI model that compares the costs and benefits of Ascend against a more traditional scenario that required solutions for data ingestion, transformation, orchestration, and sharing. Details for the modeled scenario are shown in Table 1.

**Table 1.** Modeled Scenario Assumptions

Item	Value (annual cost)
Data loader	\$80,000
Data transformation	\$48,000
Data orchestration	\$4,000
Data sharing (reverse ETL)	\$24,000
Ascend licensing	\$50,400

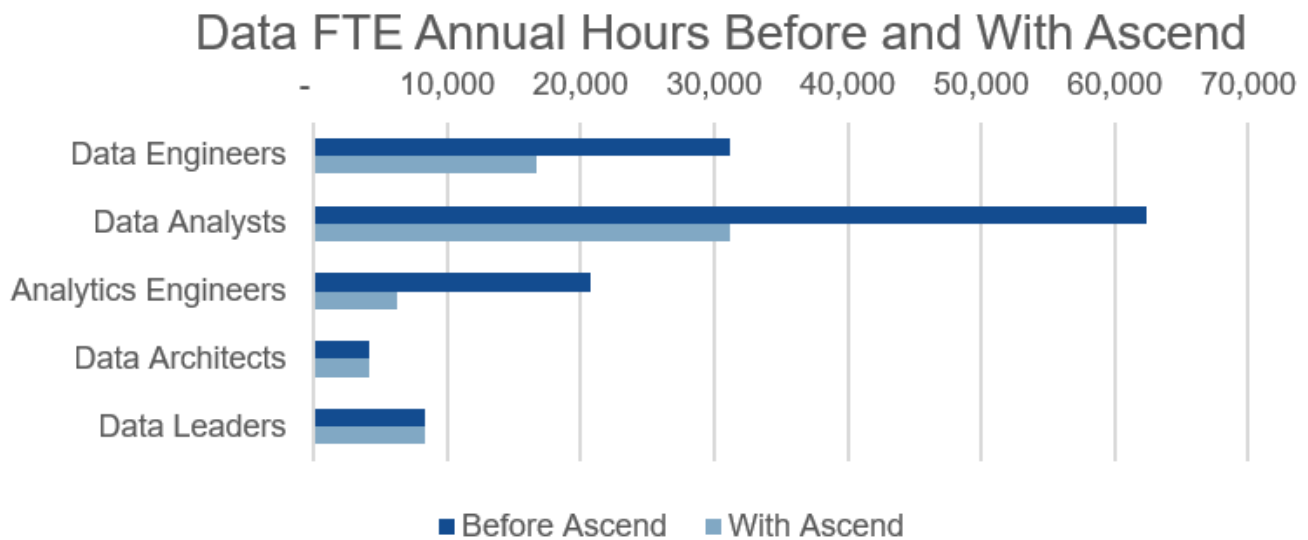
*Source: Enterprise Strategy Group, a division of TechTarget, Inc.*

The alleviated tool costs alone make an extremely compelling case for switching to Ascend. However, the efficiencies gained for engineers and analysts with Ascend make the business justification even clearer. In addition to the productivity improvements that cut the FTEs needed to support the data engineering and analytics team from 61 heads down to 32 (as shown in Figure 3), ESG found that, with Ascend, these FTEs were working closer with business units and were able to amplify the impact that data operations can have on the business as a whole.

This modeled organization realized a **68% savings** in tool costs, a **30% savings** in warehouse consumption, and a **39% savings** in FTE work processes. Overall, our examined modeled scenario averaged between a **305% and 2,781% ROI**, with the numbers scaling higher as the size of the team dedicated to the data organization grew. While results may vary depending on individual circumstance, in each scenario studied, ESG found a positive ROI and a substantial positive impact to the consumer of the data insights. While ESG believes that this improvement in insight speed and clarity will result in improved revenue, we did not include it in our financial model because it was very specific to each interviewed organization.



Figure 3. FTE Numbers Before Ascend and With Ascend



Source: Enterprise Strategy Group, a division of TechTarget, Inc.

## Conclusion

As enterprises increase their use of data analytics to achieve insights that improve their profitability and competitiveness, they often struggle as the challenges of building and operating data pipelines increase exponentially. Greater volumes of input data will require larger numbers of pipelines, while the need to combine data comprising different formats from an increasing variety of sources will result in more complex interactions between pipelines. As companies progress down their digital transformation journey, they find that their requirements for data insights are rapidly increasing, as the potential to increase profitability on current business and uncover new trends and opportunities lies in stored data. However, the complexity and cost of accessing that data create barriers that hinder realizing that value.

The solution to this problem is the automation of data pipeline creation and operation. Enterprises can attempt to achieve this by creating their own automation platforms, assembled from various point solutions, open source projects, and tools developed in-house. If they do so, however, they risk such efforts suffering from technical sprawl and operational inflexibility. Enterprise Strategy Group (ESG) studied the Ascend Data Pipeline Automation Platform and found that customers who adopted it could accelerate their time to insight, increase the depth of their insights, rapidly expand the datasets available for analysis, and improve the quality of business decisions being made.

ESG interviewed Ascend customers and found the most impactful benefit of the platform is that it unshackles data analytics teams from an inability to access data completely or in a timely manner. ESG also found a shift in effort from data organization and preparation to a focus on analytics that helped answer business questions. ESG recommends that organizations working to pull more actionable insights from their data explore the benefits that the Ascend Data Pipeline Automation Platform can provide.

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