DBP
Data For Business Performance

Data Leader Study & Research Results

The Business Impact of Using a Semantic Layer for AI & BI

by 100+ Enterprise Data and Analytics Professionals

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Foreword

A Semantic Layer Helps Enable Actionable Insights for Everyone

This research helps data and analytics professionals discover what may be one of the best-kept secrets for improving AI and BI — that using a Semantic Layer significantly improves the speed, scale, and cost to create actionable insights and analytics for decision-makers.

Having developed and deployed data and analytics capabilities and teams at Paypal, Amazon, Microsoft, T-Mobile, Nike, and Starbucks, what really matters is the ability to deliver actionable insights across the enterprise — where speed and scale drive impact. To drive speed and scale while managing costs, organizations need to move from the traditional “get in line” delivery model, to a “get it when you need it” approach by applying a “hub-and-spoke” delivery model. We do this by embracing modern cloud-based data platforms, tools and processes, and decentralizing insights and analytics creation supported by centralized data management.

The Semantic Layer was created to enable enterprises to develop actionable insights using AI and BI at scale, supporting decentralized insights creation with centralized data governance and data management. The Semantic Layer is a key piece of technology that enables companies to develop and deploy data products (e.g. data models, metrics, and insights) rapidly and effectively at scale. As the research points out, consistent with my experience using a Semantic Layer, the benefits of a Semantic Layer to scale AI and BI are both significant and extensive, including time to insights, scale, and savings in cost.

Speed

- Accelerating time to insights
- Accelerating data preparation time
- Accelerating time to analytics model creation

Scale

- Expanding the number of users for self-service insights creation
- Expanding the number of data sources available
- Enabling metric definition and usage consistency

Cost Savings

- Improving ROI
- Reducing Cost
- Improving Efficiency

I hope that this research helps other data and analytics leaders and practitioners understand and embrace the business benefits of using a Semantic Layer to deliver actionable insights from AI and BI with improved speed, scale, and cost savings. Enjoy!

Introduction

Companies are in the midst of making major investments in modern cloud-based data platforms, which includes applying advanced analytics to improve business speed, scale, and performance. Questions concerning “if" an investment to enable data, insights, and analytics is warranted have been answered with an overwhelming response of “yes” by most organizations. Now, companies are asking “how to scale” the delivery of insights and analytics beyond a few initial use cases.

As a recent **McKinsey** study **Tipping the Scales in AI** indicates, companies that scale insights and analytics deliver about +8%pts more EBIT (3.4x better) than companies who have not achieved scale. This research, based on actual experience from senior enterprise data and analytics participants who have chosen to deploy the use of a Semantic Layer, quantifies the actual benefits of using such a solution to realize the benefits of achieving speed, scale, and greater cost savings to deliver actionable insights from AI and Business Intelligence (BI).

While there are many potential ways to improve the speed, scale, and impact of data and analytics projects, one solution which has been used effectively by enterprises over the past ten years is a Semantic Layer. The Semantic Layer is a proven, trusted software component within the modern cloud data platform technology stack that focuses on improving the speed to actionable insights for BI and AI/ML.

The Semantic Layer enables data analysts and data scientists to more rapidly, effectively, and consistently access and create data products that deliver actionable insights. Although the Semantic Layer has been in the marketplace for over ten years, the current level of awareness of using a Semantic Layer, including accelerating time to insights, scale, and cost savings are not widely understood among many business, IT, and data and analytics professionals.

To address the Semantic Layer business impact awareness gap, this research captures the actual business benefits from using a Semantic Layer as identified and quantified by senior enterprise data and analytics professionals whose organizations have deployed and are currently using a Semantic Layer. Their feedback is presented in this report, including quantifying the actual tangible business benefits of using a Semantic Layer to increase speed to actionable insights, rapidly expand scale, and reduce costs.

Yours Sincerely,
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Semantic Layer Study - Overview

This study focuses on understanding the business impact of scaling the delivery of data, insights, and analytics using a Semantic Layer for AI and BI. A Semantic Layer provides a single, common definition and representation of all data sources, metrics, and models, which enables the rapid creation of consistent insights for AI and BI without any data movement, coding, and waiting.

A Semantic layer creates a way to define data as a product that can be consumed consistently and efficiently across the enterprise, enabling decentralized insights creation supported with centralized data management platforms and governance.

This study summarizes the actual results experienced by over 100 data and analytics professionals who have chosen to use a Semantic Layer to scale their data and analytics capabilities and impacts. DBP Institute, a data and analytics consulting, research, and education organization, launched a research study to assess the value of the Semantic Layer from industry practitioners. The study was fielded online in April 2022 and only data from validated respondents who were data and analytics experts using a Semantic Layer were accepted.

Executive Summary

Using a Semantic Layer Generates 4.2x Improvement with Half the Effort

Overall, companies using a Semantic Layer cite a 4.2x improvement (i.e., a magnitude of 4.2 times improvement over the base level of performance from not using a semantic layer) in performance with less than half the effort required (e.g. savings in both number of resources, hours, project time / duration, and overall cost). This is a significant order-of-magnitude improvement in performance as well as a reduction in effort and cost. It means that a typical project taking 4 months to complete could be done in just 4 weeks using a Semantic Layer!

Performance improvement was significant and consistent across every measure

- 4.4x improvement in Time-to-Insights (e.g., insights & analytics development)
- 4.4x improvement in number of self-service users, data sources, metrics consistency
- 4.2x improvement in Cloud Analytics performance
- 3.7x improvement in cost savings

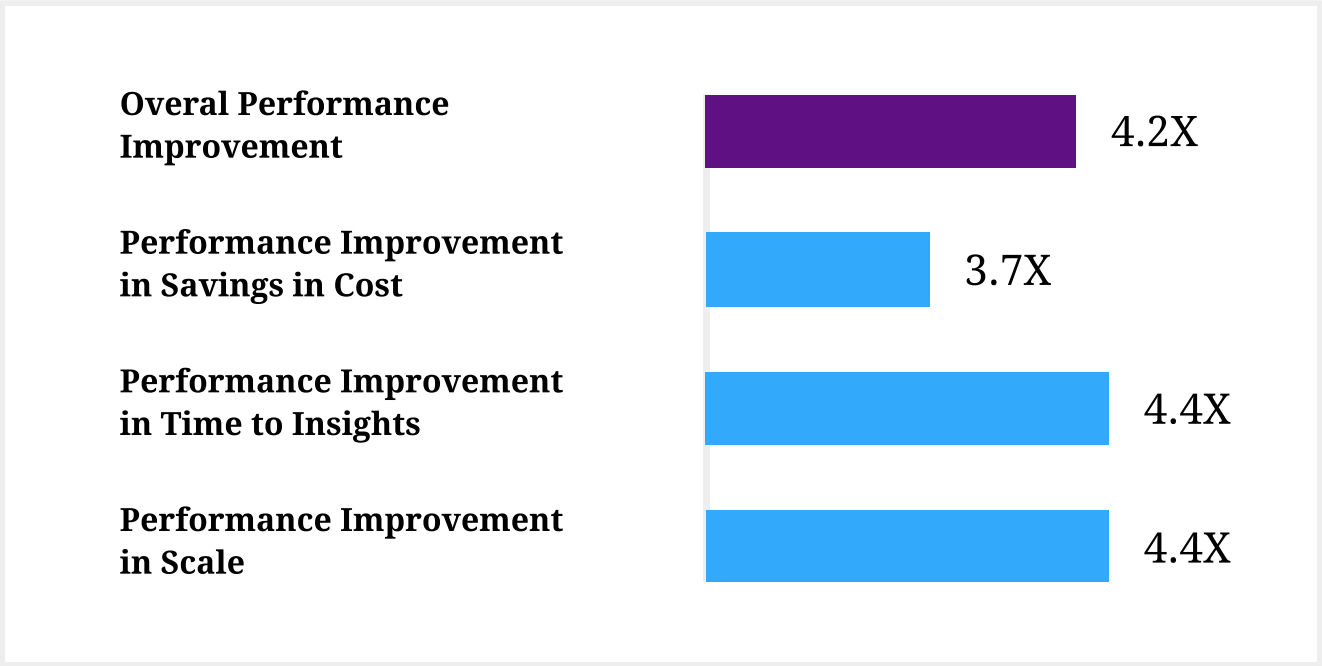


Figure 1: Overall improvement for speed, scale, and cost savings

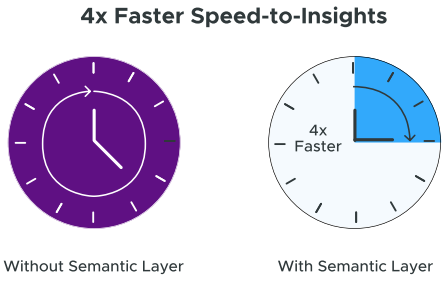
Data and analytics professionals quantified the benefits of using a Semantic Layer based on actual experience for nine (9) individual measures. These nine measures were assigned to one of three major benefit drivers, summarized as follows:

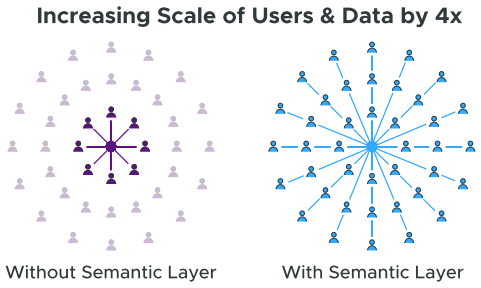
1. **Accelerate Time to Insights** - 4.4x magnitude of improvement in time to insights. This means that using a Semantic Layer significantly accelerates speed to actionable insights. For example, if a project took one month to make insights available without a semantic layer, using a semantic layer would reduce that time from 30 days to just one week, or a quarter of the time required. Time to insights addresses additional measures of performance, including 4.2x improvement in data preparation time, 4.6x improvement in time to analytics creation, and 4.5x improvement in time to insights creation.
2. **Increase Scale** - 4.4x overall improvement in scale. Specifically, companies using a Semantic Layer say that they have increased the number of self-service AI and BI users by 4.5x, increased the number of data sources by 4.8x, and improved data metrics consistency by 4.0x.
3. **Reduce Cost and Resource Effort** - 3.7x magnitude reduction in cost. Additional performance measures impacted by using a Semantic layer include a 3.1x reduction in compute cost, 3.9x improvement in AI and BI project ROI ,and 4.2x improvement in resource efficiency (e.g. productivity). Further, companies cite a 46% reduction in the number of hours required to implement a data and analytics project using a Semantic Layer vs. not using a semantic layer. That means for a typical 1,000 hour project, using a Semantic Layer reduces the number of hours to just 540, or a reduction of 460 hours, which is a very significant reduction in hours of effort and cost of effort.

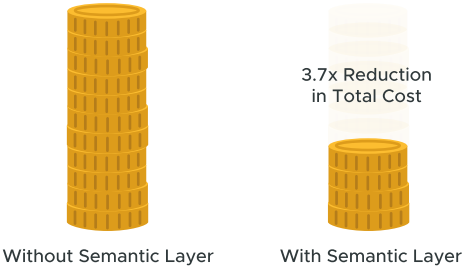
Significant, Rapid Return on Investment (ROI)

The impact of using a Semantic Layer is significant across every performance measure, including each key business driver , such as speed to insights, increased scale, and reduced cost and effort. The benefits of using a Semantic Layer add up quickly — for a typical 1,000 hour project that costs $200/hour for resources (i.e., $200k), the level of effort is reduced by close to half (actual results cited are 46% reduction) using a Semantic Layer. This translates to a cost savings of nearly half, or a cost savings of $92k for the typical 1,000 hour project. For a company implementing just 25 typical 1,000 hour projects a year using a Semantic Layer, the direct, realizable cost savings would be $2.3mm annually. The return on investment using a Semantic Layer is significant and obvious — deploying the use of a Semantic Layer should yield immediate direct savings and pay for itself well within a year.

- 4.4x improvement in Scale
- 4.4x improvement Speed to Insights
- 3.7x Savings in Cost
- 46% reduction in the number of hours required to implement a typical Data and Analytics project







Overview of the Semantic Layer

Turning Data into Actionable Insights for Everyone

The fundamental goal of data and analytics is to provide decision-makers with actionable insights. To deliver actionable insights more effectively, particularly in the context of digital transformation and the digitization of data, companies are investing in modern cloud-based data platforms so that all of their data is available in one centralized location.

Companies realize that this is a critically important starting point, but being able to turn data into actionable insights means being able to structure, transform, and integrate data — often from multiple disparate sources and systems — then publish it for consumption by AI and BI tools, including for analysis or report development and analytics development.

The “Last Mile” of Data, Insights, and Analytics

The process of making data available and turning it into actionable insight and analytics is often referred to as the “last mile” of effort because for many organizations, the last mile process is slow, manual, laborious, and inconsistent. Last mile activities involve as many as seven (7) steps to create and consume structured, integrated data so that it can be queried and analyzed, synthesized, summarized, visualized, presented, and narrated to make it relevant, understandable, and ultimately actionable and impactful.

Companies seeking to increase the speed, efficiency, and reliability of actionable insights creation must find a way to increase the speed and scale of these “last mile” activities. Many companies turn to using a Semantic Layer to increase the speed, efficiency, and reliability of actionable insights creation while also reducing the level of effort and cost.

The Semantic Layer delivers improvement in speed to insights, scale or efficiency, and costs by improving this “last mile” process through simplification, automation, standardization, and optimization. It does so by enabling the self-service creation of data products, including creating and publishing data products for AI and BI consumption, as well as enabling BI query optimization.

Accelerating and Scaling Actionable Insight Creation

Semantic Layer Solution Overview - Components

The Semantic Layer improves the time to insights for AI and BI by simplifying, automating, standardizing, and optimizing how data products are created, consumed, and queried for AI and BI. The Semantic Layer consists of seven (7) components:

1. **Consumption Integration** - Optimizes access to data via the consumption layer for AI and BI using pre-built connections to tools like Excel, PowerBI, Tableau, Looker, and others.
2. **Semantic Modeling** - Provides the ability to create data products rapidly via point-and-click data modeling that can be done through self-service by business users, data scientists, and data engineers easily with no coding.
3. **Data Preparation Virtualization** - Creates an easy approach for defining and reusing data transformations in a way that is transparent, easily modifiable, and operationally consistent with no coding and no data movement.
4. **Multi-Dimensional Calculation Engine** - Provides a built-in capability to rapidly perform massive multi-dimensional calculations at scale across a large number of concurrent BI tools, queries, and users.
5. **Performance Optimization** - Optimizes query performance, enabling savings in cost.
6. **Analytics Governance** - Provides a built-in ability to manage data governance for data access as well as data product creation (data models, metrics), refinement, and publishing (access via BI Tools).
7. **Data Integration** - Enables rapid, automated connection to source data with no data movement required.

Semantic Layer - Position within Modern Data Stack

Semantic Layer - Sits Between Data Source Layer and AI / BI Consumption Layer

The Semantic Layer is a key component of the modern cloud-based data stack. The Semantic Layer sits between the curated data layer — these are data sources that have been reviewed or screened for data quality and accuracy and as such, have been approved and deemed acceptable for enterprise use.

For the data sources deemed ready and available for enterprise use, the Semantic Layer makes all of those sources available for insights and analytics creation (with access and sharing permissions also being managed by the Semantic Layer). The Semantic layer creates and stores the business definition of the data — often called a data product, which consists of the logical data model, data pipeline (virtualized), and metric store. The business definition is essentially a structured, multi-dimensional data set made ready for consumption by the AI and BI layer to be translated into actionable insights and analytics.

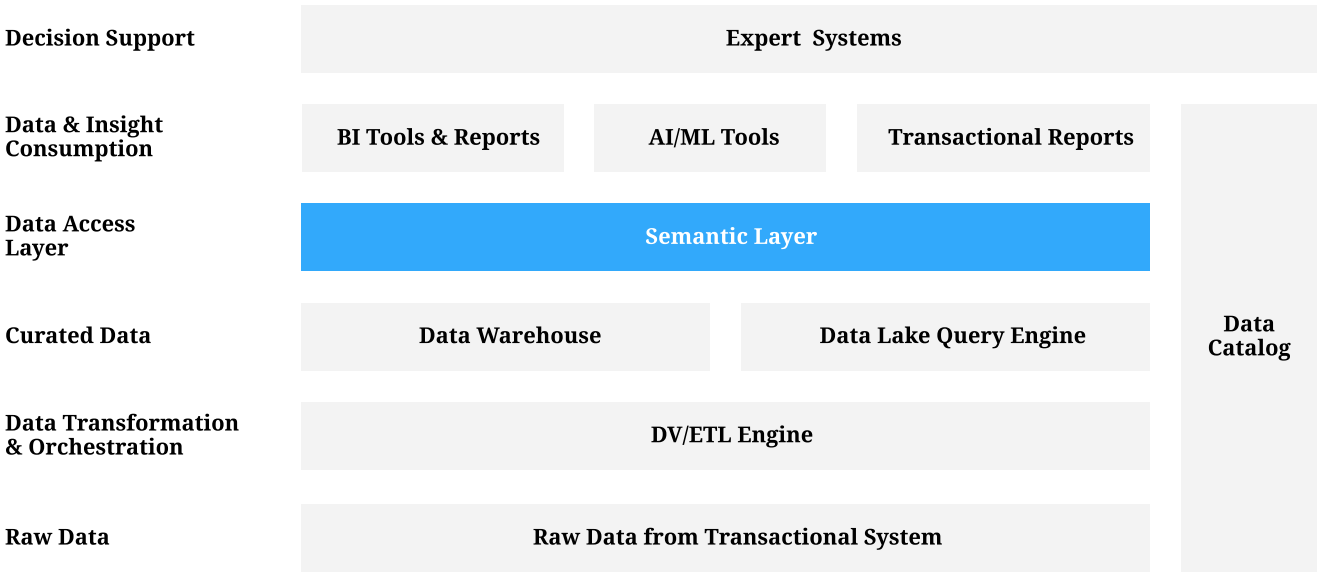


Figure 3: Semantic Layer Position Within Data and Analytics Technology Stack

For more details about the Semantic Layer refer to the article – “Demystifying the Semantic Layer for Smarter, Faster AI and BI” [Southekal, 2022].

Research Study Design

The purpose of this research study is to help the data and analytics community better understand the value of using a Semantic Layer to create and deliver actionable, reliable insights that facilitate making better decisions and taking more effective actions faster with improved focus, clarity, and confidence.

The research focuses on understanding the actual, empirical and quantifiable business impact of using a Semantic Layer to deliver actionable insights that address the “last mile” of data analytics, which makes data available for rapid insights creation and consumption.

The foundation of research is to generate effective questions that are easy to understand — clear, concise and mutually exclusive — and that are directed to a representative, qualified audience that is capable of providing accurate, useful answers. Against this backdrop, the survey questions were designed around three value drivers associated with using a Semantic Layer:

1. **Speed to Actionable Insights** - Reduce time to insights via improvements in efficiency and effectiveness, such as reducing the time to prepare and publish data, insights and analytics.
2. **Scale of Actionable Insights** - Increase the throughput of insights creation, including the number of users, data sources, and consistency of metrics results.
3. **Cost Savings and Reduction** - Reduce costs by eliminating or automating key steps, including reducing the number of and amount of time from resources required to transform data sources into actionable insights for decision makers.

To derive meaningful insights, it was determined that the number of sample respondents should be between 30 (as per the Central Limit Theorem) and 385 (Data Sampling calculation based on 95 percent Confidence Level and 5 percent Margin of Error). In addition, the survey looked for qualified respondents belonging to a select, specialized group of experienced Business Intelligence and Analytics Developers, Data Analysts, Data Scientists, Machine Learning (ML) Engineers, Managers, Directors, Vice President and CDOs (Chief Data Officers), who have used a Semantic Layer for doing AI and BI.

Key Research Study Findings

Profile of Respondents

The study was launched on 10th April, 2022 and 260 people accessed the survey across the globe in a span of 3 weeks. After validating the respondents and their credentials, 108 qualified respondents were validated as being qualified to be included in the research results and detailed analysis. The percentage of respondents being qualified is in line with the expected or desired range of respondents required for deriving meaningful insights from a survey. A summary of the respondent profiles for the 108 qualified respondents across three different dimensions or views (i.e., company size, role, and industry sector) is shown below.

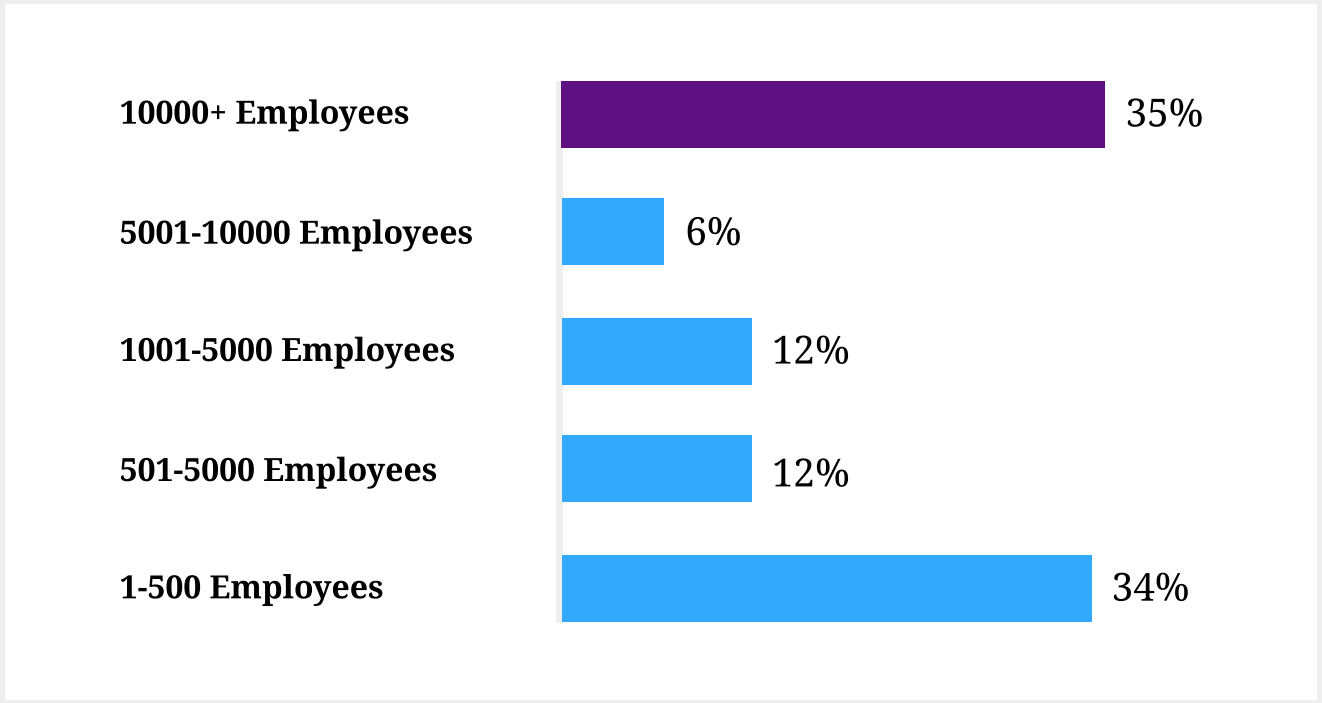


Figure 4: Survey Respondents by Company Size

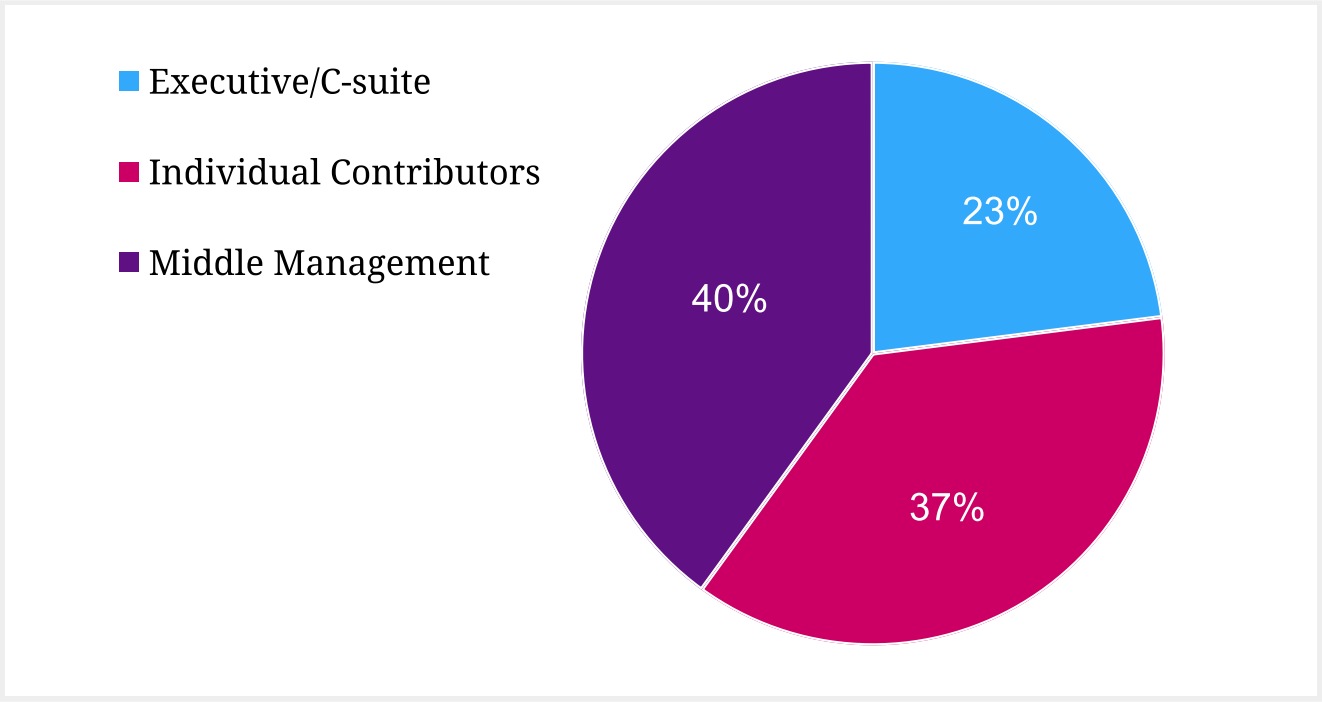


Figure 5: Survey Respondents by Role

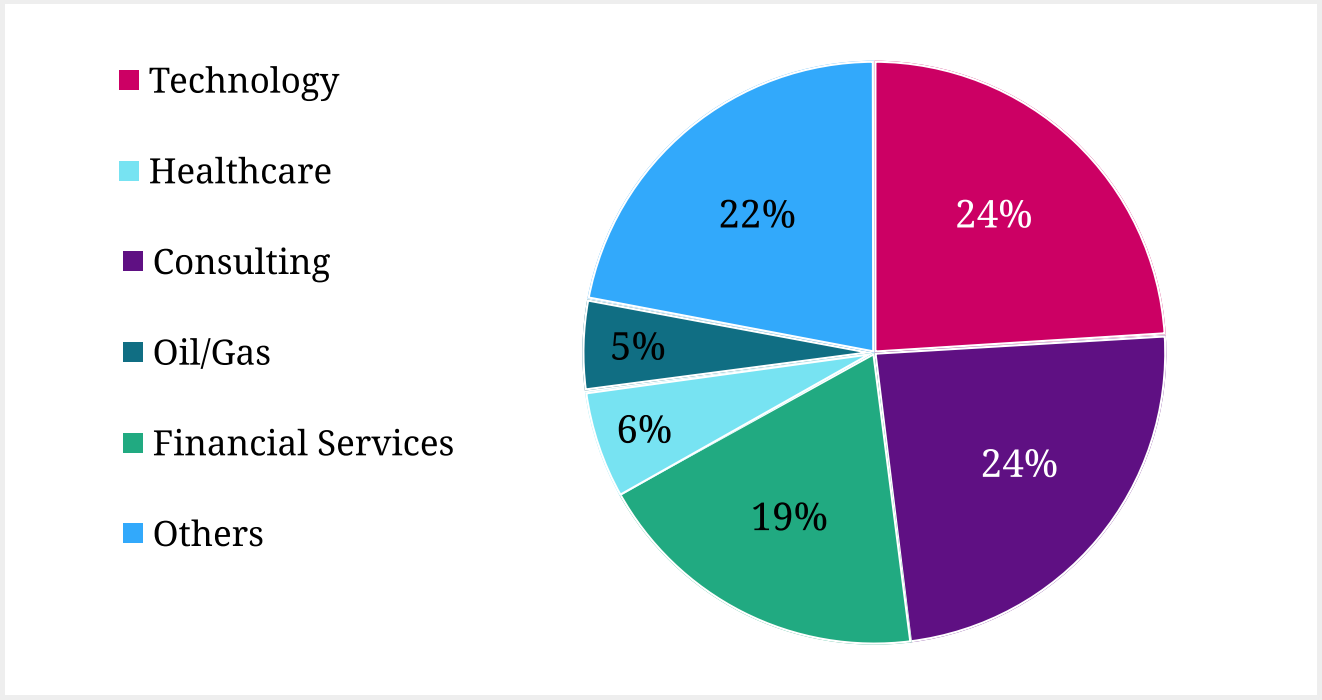


Figure 6: Survey Respondents by Industry Sector

The survey response data was then analyzed to synthesize and present the resulting quantified results in a way that is easy to understand, enabling effective reader cognition, inference, and conclusions concerning the value of using a Semantic Layer. Specifically, the survey questions addressed three (3) performance areas:

1. Impact of using a Semantic Layer on business performance across a variety of measures.
2. Difference in performance using a Semantic Layer versus not using a Semantic Layer.
3. The level of Data and analytics project implementation effort using a Semantic Layer.

"The Semantic Layer provides business users with an easy way to understand the data."

Director, Data and Analytics, Standard Chartered Bank

"A Semantic Layer simplifies data preparation and feature creation with no/ low code feature design."

Chief Data Scientist, Siemens

"A Semantic Layer drastically reduces the time to market analytics, insights, visualizations etc. to the business users."

Senior Manager, MIS, Market Access

"This research helps data and analytics professionals discover what may be one of the best-kept secrets for improving AI and BI — that using a Semantic Layer significantly improves the speed, scale, and cost to create actionable insights and analytics for decision-makers."

Chief Data and Analytics Officer, Paypal

"Including a Semantic Layer in your data democratization platforms translates quant information into business meaning. Instead of teams using faulty tribal knowledge or wading through many pages of technical documentation, those definitions are connected directly to the data and analytics."

Director of the Global Center of Excellence for Analytics and Data Science, Starbucks

"I recommend having a Semantic Layer be part of your Data and Analytics architecture to achieve better business performance"

Systems Performance Architecture, Meta (formerly Facebook)

"A Semantic Layer plays a crucial role to provide an abstract layer which can harmonize the taxonomies and provide a central hub which is aligned with data governance and data catalog."

Director, Data Architecture & Data Engineering, Loblaw Companies

Business Impact of the Semantic Layer

Measuring the actual business impact of using a Semantic Layer is addressed by nine (9) metrics which were assigned to one of three main benefit driver groups: speed, scale, and savings in costs. The nine metrics are listed below according to grouping:

Improve Time to Actionable Insights (reduction in time required)

1. Time required to create actionable insights
2. Time required to prepare data for analysis
3. Time required to develop and deploy new analytics models

Increase Scale of Insights and Analytics Creation and Deployment

4. Number of users able to perform self-service data prep, insights and analytics
5. Number of data sources available for creating actionable insights and analytics
6. Improvement in metric consistency and efficiency (create once and reuse)

Reduce Costs to Create and Deploy Actionable Insights and Analytics

7. Savings in cost to create and deploy data and analytics projects
8. Efficient use of resources to create and deploy data and analytics projects
9. Improve ROI for data and analytics projects created using a Semantic Layer

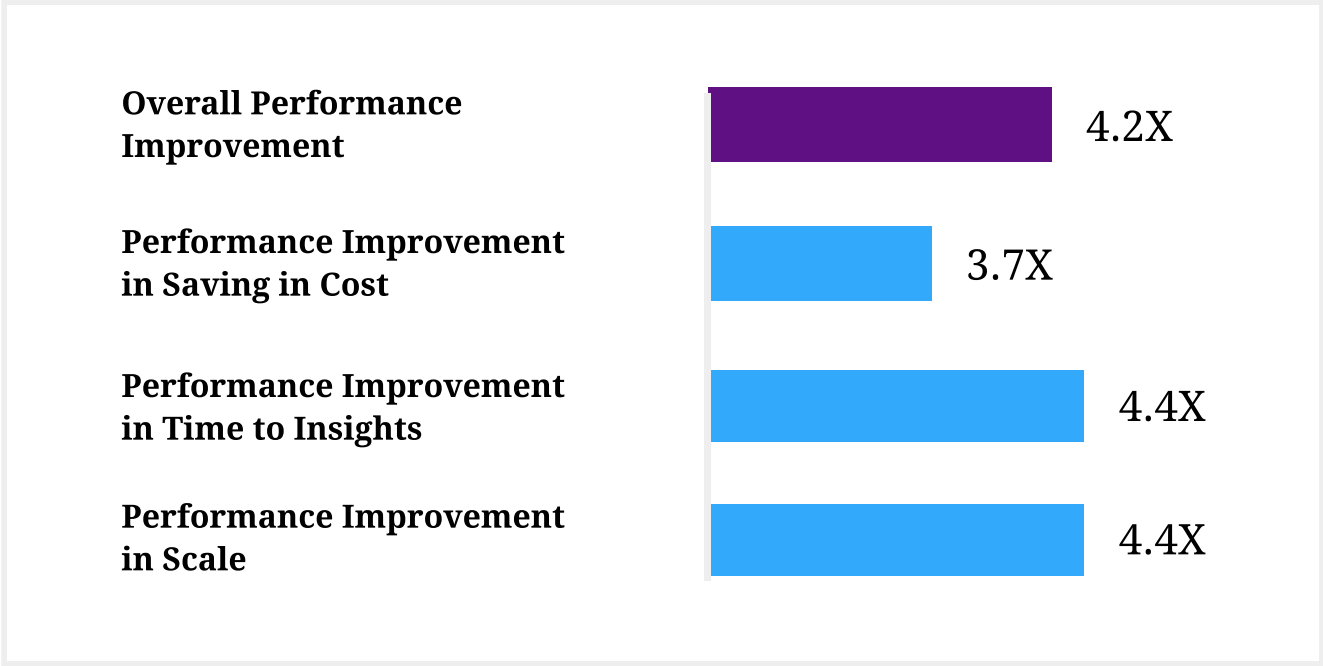


Figure 7: Overall Improvement for Speed, Scale and Savings in Cost

Improve Time to Insights

Time to actionable insights performance is a measure of how fast an enterprise can prepare and deploy actionable data and analytics using a Semantic Layer. In this regard, the survey responses demonstrate a **4.4x improvement in time to actionable insights** using a Semantic Layer to create actionable insights and analytics. Speed to insights was measured across three (3) key measures, including data preparation time, analytics deployment time, and time to generate actionable insights as shown below:

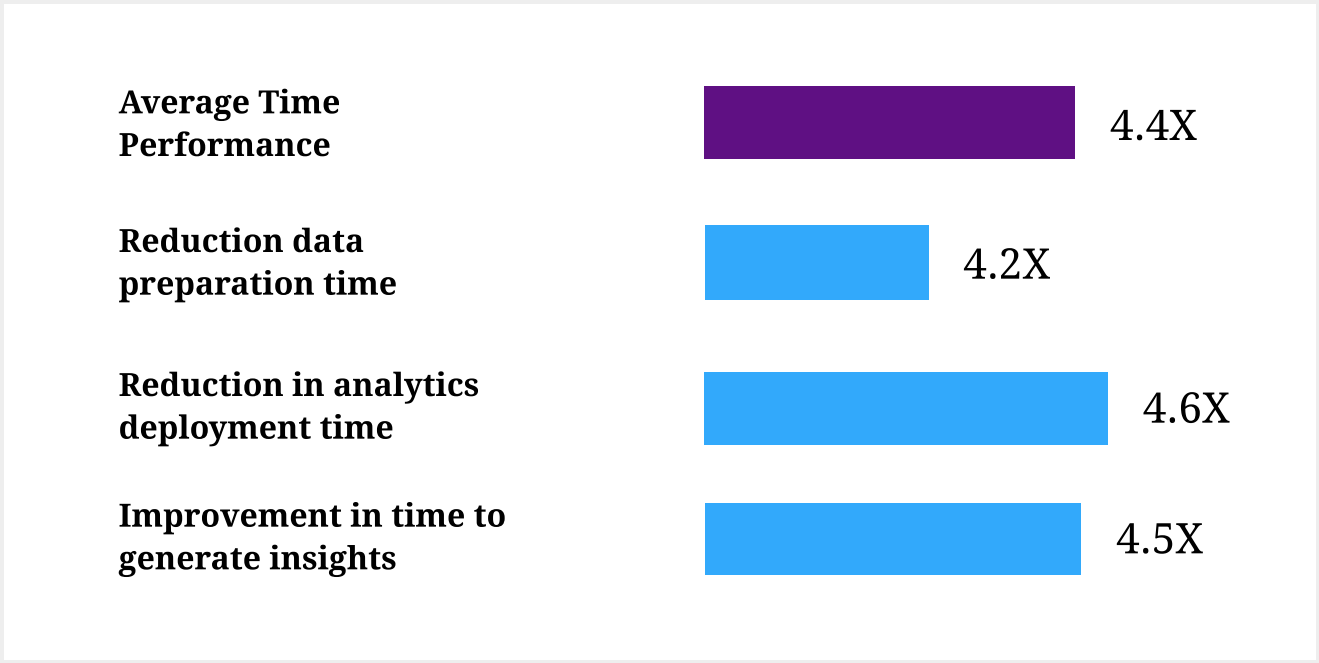


Figure 8: Speed to Actionable Insights Using a Semantic Layer

Increase Scale of Insights and Analytics Creation and Deployment

Scale is a measure of how much more capacity a Semantic Layer can generate in terms of users, data sources, and metrics, including metric creation and reuse. In this regard, survey respondents realized a **4.4x increase in scale** using a Semantic Layer to create and deliver actionable insights and analytics. Scale was measured across three (3) key measures, including improvement in metric consistency, increase in the number of data sources, and increase in the number of self-service users as shown below:

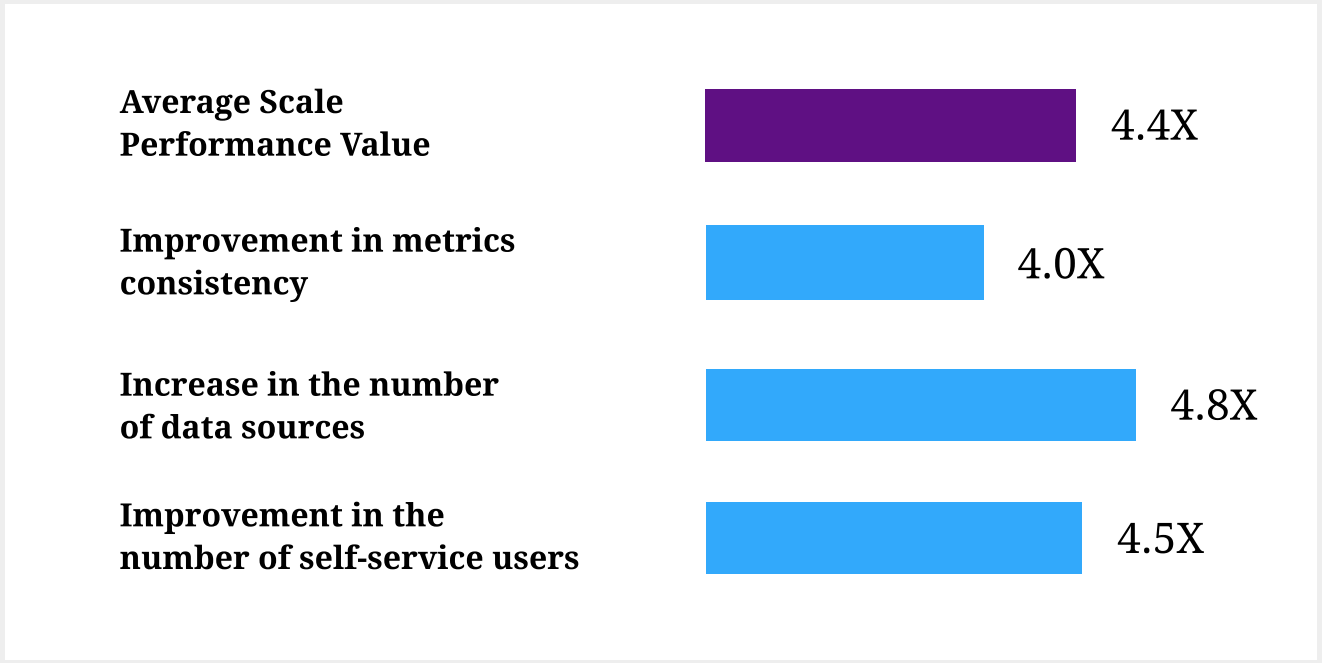


Figure 9: Scale Expansion Impacts Using a Semantic Layer

Reduce Costs

Cost reduction is a measure of how much an enterprise can save by using a Semantic Layer. In this regard, survey respondents identified a **3.7x reduction in costs (cost savings)** when using the Semantic Layer to create actionable insights and analytics. Cost reduction was measured across three (3) key measures, including resource efficiency, direct cost savings, and improved ROI as shown below:

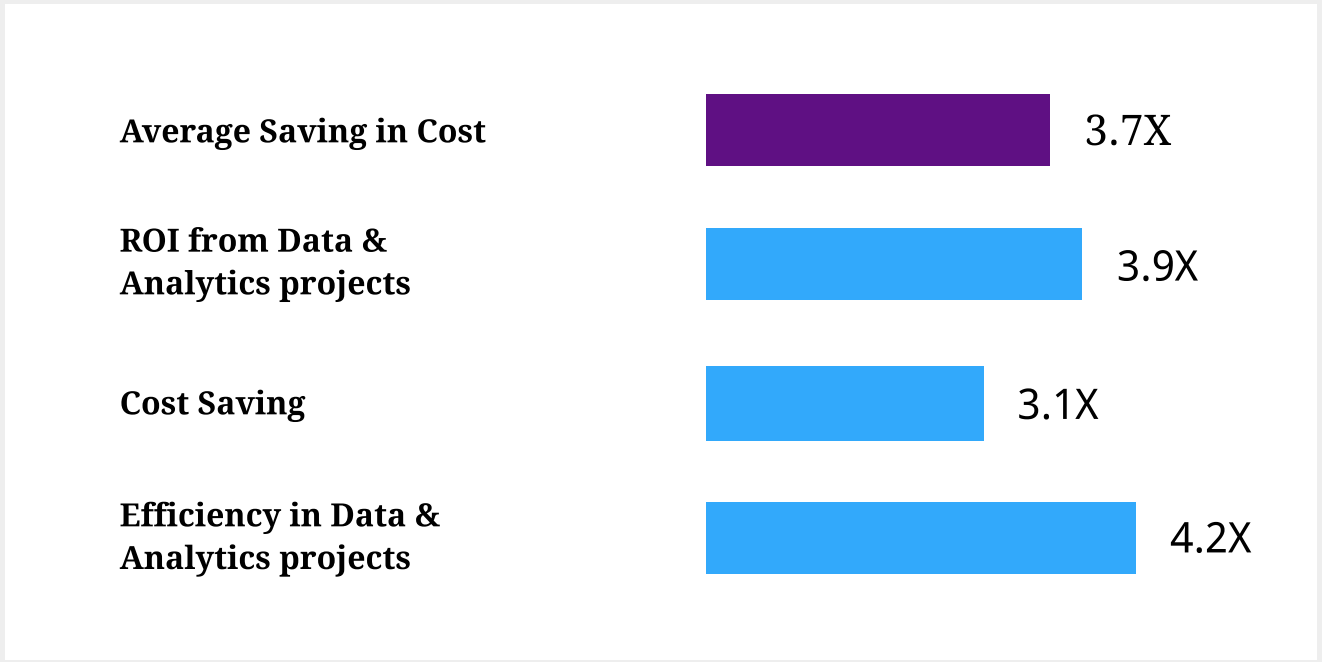


Figure 10: Cost Effectiveness

Impact from Using a Semantic Layer

Research study results demonstrate an overall 4.2x improvement in business impact from using a semantic layer as identified and quantified by data and analytics professionals. The chart below shows the value of each variable for comparison. The results show that the level of improvement from using a Semantic Layer is consistently above a magnitude of 4x. For cost savings, the magnitude is also significant, above 3x. Further, the level of improvement demonstrates that the impact of using a semantic layer is significant and consistent across each measure.

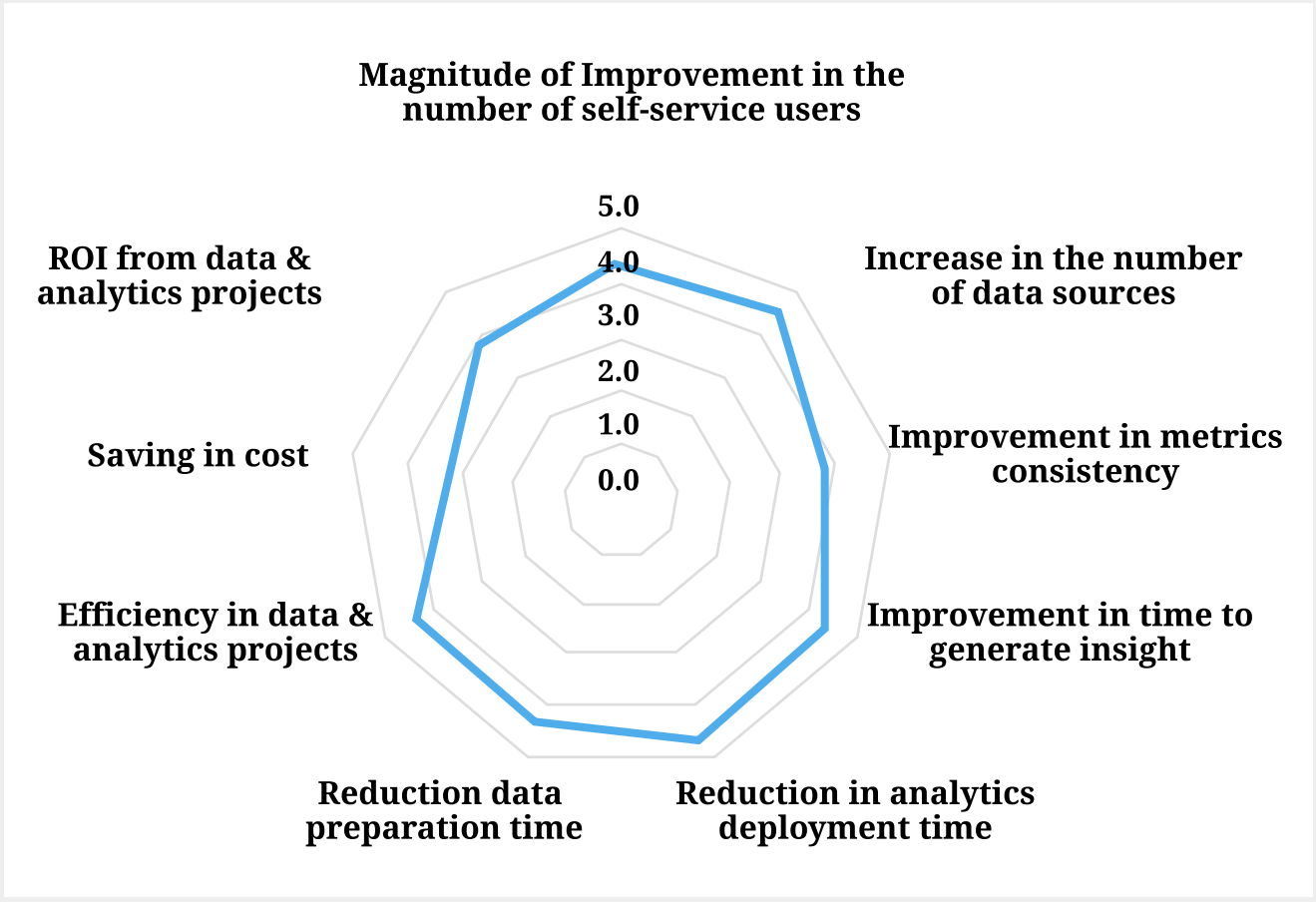


Figure 11: Business Impact of Using a Semantic Layer by Measure - Magnitude

Reduction in Effort When Using a Semantic Layer

Whether analyzing retail sales data by product category, predicting the failure of a critical oil and gas asset, or helping insurers identify potential markets, it takes careful planning and execution to derive actionable insights from data and analytics using the Semantic Layer. The benefit is that using a Semantic Layer correctly can significantly shorten the cycle time and reduce the effort to create and deploy data and analytics projects.

To gauge the level of effort, including the number of hours required to prepare data and derive insights when using vs not using a Semantic Layer, the survey asked the respondents the average time it takes to implement a typical data and analytics project across five (5) phases. The results showed that there is a **46% decrease in the number of hours required to create actionable insights using a Semantic Layer** vs not using a Semantic Layer. \

Research respondents note that a “typical” project not using a Semantic Layer would require approximately 903 hours, while doing the same “typical” project using a Semantic Layer would take only 484 hours, a reduction of 419 hours or a reduction in effort of 46%. This means that the effort would be almost half as much! For example, if a company implements 200 data and analytics projects in a year, the direct annual savings in resource effort from using the Semantic Layer would be $8.38 million (83,800 hours of effort saved) assuming a typical hourly blended labor rate in the US is $100.

The reduction in resource effort in hours with and without the Semantic Layer across a typical data and analytics project is as shown below. The results suggest that projects not using a Semantic Layer take 46% more hours of resource effort to complete compared with a project that uses a Semantic Layer.

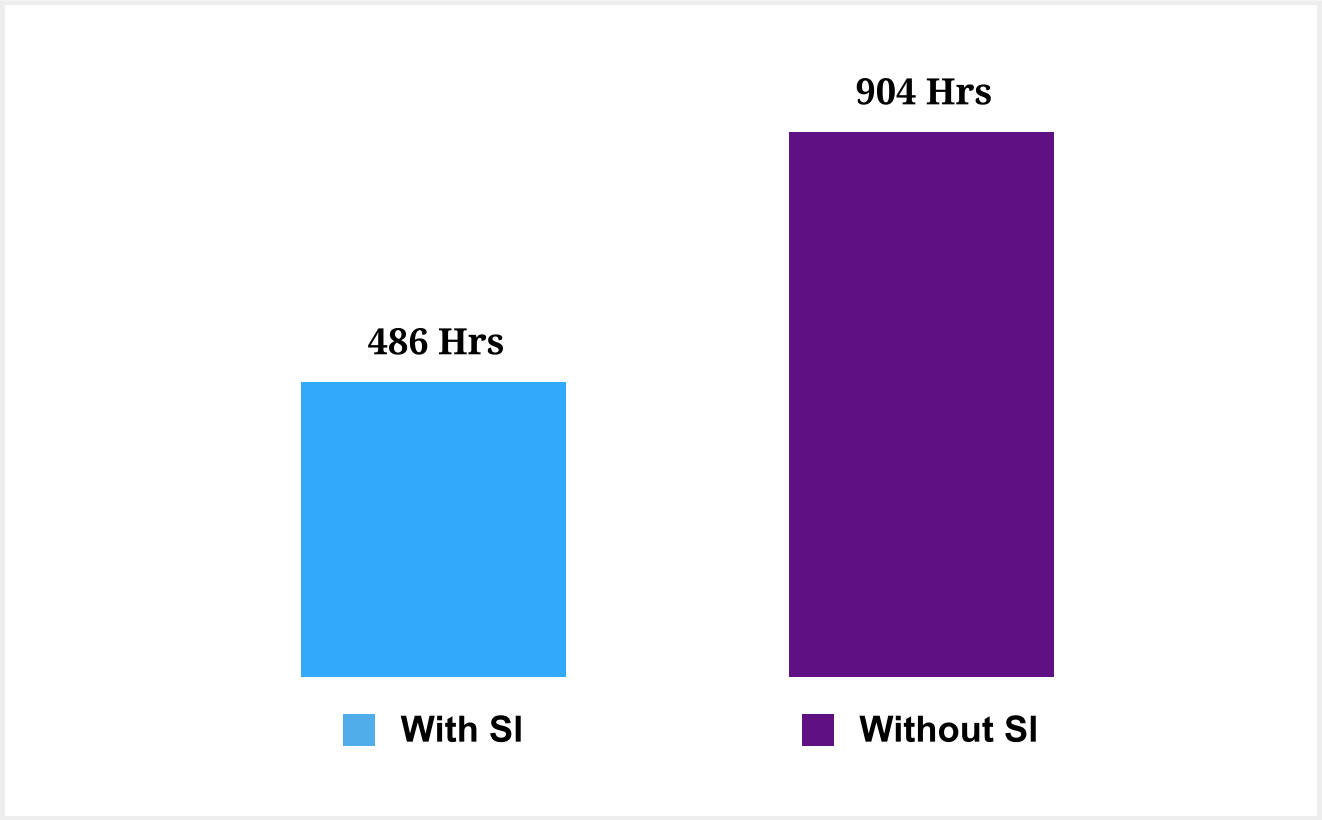


Figure 12: Data and Analytics Typical Project Hours With & Without Using a Semantic Layer

In addition, the reduction in resource effort in hours with and without the Semantic Layer across a typical set of five data and analytics project phases is as shown below.

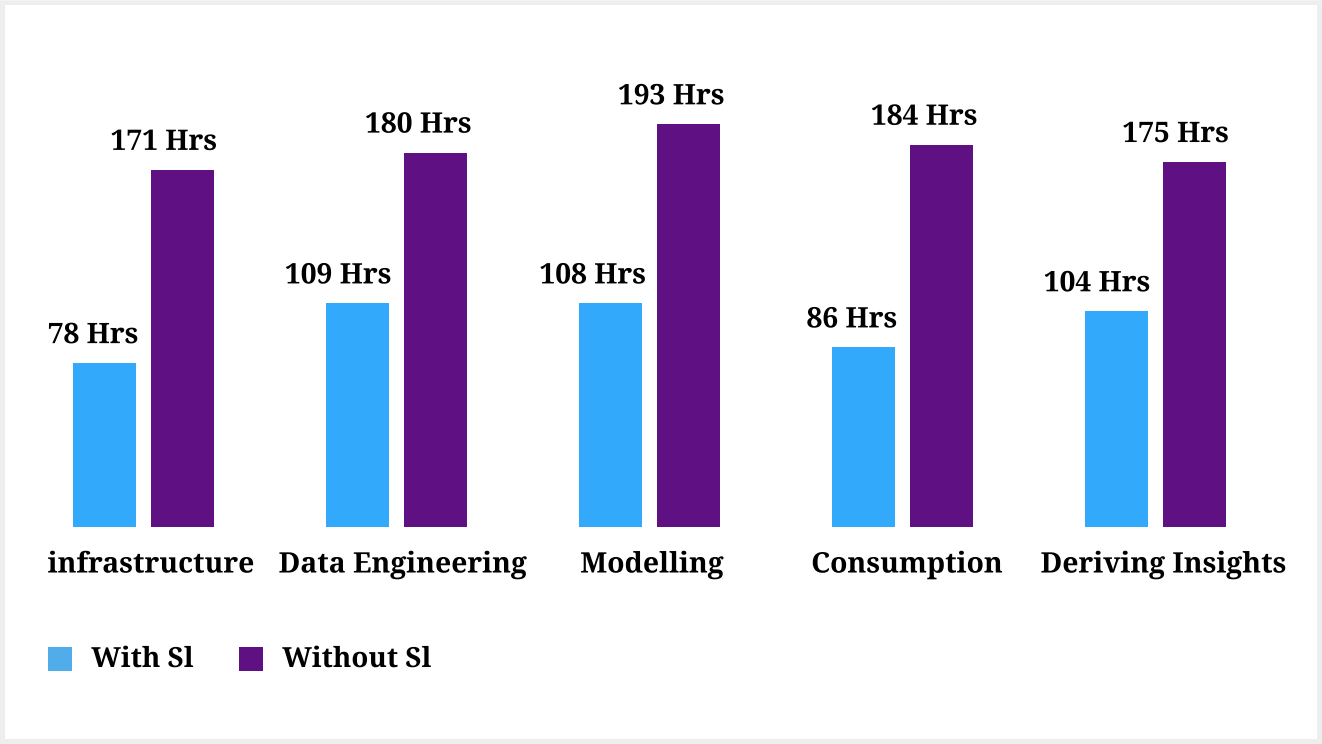


Figure 13: Typical Data & Analytics Hours by Activity With & Without Using a Semantic Layer

The table below shows the level of effort in hours for a typical project by activity, representing the five typical activities involved and the corresponding predictions in effort.

Data & Analytics Project Phases	Without SL	With SL	% Reduction
Infrastructure	**171**	**78**	**54%**
Data Engineering	**180**	**109**	**40%**
Modelling	**193**	**108**	**44%**
Consumption	**184**	**86**	**53%**
Deriving Insight	**175**	**105**	**40%**
TOTAL	**904**	**486**	**46%**

Total Cost Savings From Using a Semantic Layer

The survey also asked respondents to identify the total cost savings from using a Semantic Layer or a typical data and analytics project. The results show again that using a Semantic Layer reduces costs across each and every activity involving data and analytics. For example, the study shows that using a Semantic Layer reduces data preparation cost by 18%, reducing a typical 350 hour data preparation activity effort to just 287 hours.

The survey also asked respondents to identify the total cost savings from using a Semantic Layer or a typical data and analytics project. The results show again that using a Semantic Layer reduces costs across each and every activity involving data and analytics. For example, the study shows that using a Semantic Layer reduces data preparation cost by 18%, reducing a typical 350 hour data preparation activity effort to just 287 hours.

Respondent Comments - Using a Semantic Layer

There were a total of 18 questions in the survey. 17 of the 18 questions were directed and utilized numeric or Likert scale responses. One open ended question was included, which asked the respondent to explain their experience using a Semantic Layer in a descriptive way. Below are some of the actual responses from respondents who are also industry experts.

“For a data scientist, a Semantic Layer simplifies data preparation and feature creation with no/low code feature design. This enables the governed exploration of model generated insights, thereby accelerating the time to value for common and critical business processes in the enterprise.”

Chief Data Scientist, Siemens

“Having a Semantic Layer drastically reduces the time to market analytics, insights, visualizations etc. to the business users. Building a Semantic Layer is time consuming, but well worth the effort in the longer run.”

Senior Manager, MIS, Market Access

“As organizations have started to concentrate on data literacy, they are planning to follow more mature models like data mesh, data fabric, or hub & spoke model. And for these models to be successful organization-wide, Semantic Layer plays a crucial role to provide an abstract layer which can harmonize the taxonomies and provide a central hub which is aligned with data governance and data catalog.”

Director, Data Architecture & Data Engineering, Loblaw Companies

“A data consumer needs to be able to easily discover, understand, and utilize the data. The Semantic Layer provides business users with an easy way to understand the data.

Director, Data and Analytics, Standard Chartered Bank

“It takes time to build the Semantic Layer and familiarity with the business is highly required. But the ROI is 10x worth it.”

Data Architect, Hyphen Group

“I would definitely recommend to have the Semantic Layer in your Data and Analytics architecture for overall better business performance”

Systems Performance Analyst, Meta (formerly Facebook)

Megan Brown
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Conclusion

A Semantic Layer Helps Data and Analytics Speak the Language of your Business

Organizations need to scale business impact from their investments to modernize how they create and use data and analytics. The next step towards showing value is to make it as simple as possible for business leaders to apply insights from data to their efforts. This requires us to look in two directions: to making data our democratization platforms speak business language and to supporting our leaders' data literacy growth.

Including a Semantic Layer in your data democratization platforms translates quant information into business meaning. Instead of teams using faulty tribal knowledge or wading through many pages of technical documentation, those definitions are connected directly to the data and analytics. This also shrinks the level of effort leaders must put into becoming ever more data literate.

At Starbucks, being able to read, write & speak with data is a top priority. We want our data to speak the language of our business, and our business to understand and act upon insights we receive from our customers and partners. In fact, these are necessary for us to meet the standards we've set for ourselves in our mission and values. In particular, we must use data to Deliver our very best in all we do and hold ourselves accountable for results.

The closer we connect data and insights to a semantic layer, the more actionable our findings become. Ultimately, data literacy and the semantic layer are how we embed analytics in our business and create value from our data and analytics practices.

Some of the benefits we've realized include the following:

- Expanding data and insights access so that support partners receive better feedback from our stores
- Improving consistency in how we use self-service data and metrics
- Increasing the productivity of insights and analytics creators through shared definitions, code, and data
- Solidifying our data governance practice so we responsibly acquire, share, and consume data
- Creating push and pull momentum for the application of actionable insights from data.

Data have become the fuel for our business strategies and decisions. Creating connections between data and a Semantic Layer and data literate leaders makes us more nimble and competitive. The business value is never in the data itself, instead it comes from building meaningful and impactful insights that are quickly and easily acted on by our business leaders. It is necessary to build a Semantic layer and invest in data literacy to achieve the returns on data investments to which we all aspire.

The Research Analyst

This research report was designed, analyzed, and prepared by **Dr. Prashanth Southekal**, Founder and Managing Principal of DBP Institute and Adjunct Professor of Data and Analytics at IE Business School, Spain.

Dr. Southekal has worked and consulted for over 80 organizations including P&G, GE, Shell, Apple, and SAP. He is the inventor of the DEAR Model, a systematic and structured approach for data-driven decision-making. Dr. Southekal is the author of two books — "Data for Business Performance" and "Analytics Best Practices" — and writes regularly on Data, Analytics, and Machine Learning in Forbes and CFO.University. His book “Analytics Best Practices" is ranked #1 in the list of 100 best analytics books of all time by BookAuthority.Org.

Apart from his consulting pursuits, he has trained over 3,000 professionals worldwide in data and analytics. He is also an Adjunct Professor of Data and Analytics at IE Business School (Madrid, Spain) and CDO Magazine included him in the top 75 global academic data leaders of 2022. He holds a Ph.D. from ESC Lille (FR) and an MBA from Kellogg School of Management (U.S.). Dr. Southekal lives in Calgary, Canada with his wife, two children, and a high-energy Goldendoodle dog. Outside work, he loves juggling and cricket. Dr. Southekal can be reached at psouthekal@dbp-institute.com.

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Appendix 1: Acronyms

- AI - Artificial Intelligence
- BI – Business Intelligence
- CDO - Chief Data Officer
- CDW - Cloud Data Warehouses
- CDS – Citizen Data Scientists
- CRM – Customer Relationship Management
- D&A – Data and Analytics
- DLC - Data Lifecycle
- CLT – Central Limit Theorem
- DV – Data Virtualization
- ERP – Enterprise Resource Planning
- IT – Information Technology
- KPI - Key Performance Indicator
- ML - Machine Learning
- PLM – Product Lifecycle Management
- ROI - Return on Investment
- SL – Semantic Layer
- SoR - System of Record
- SSA – Self Serve Analytics
- TCO - Total Cost of Ownership
- VUCA - Volatile, Uncertain, Complex and Ambiguous

DBP (Data for Business Performance) Institute is a Consulting, Research and Education firm, that helps organizations leverage Digital technologies, Data and Analytics for business results. For more information, visit https://www.dbp-institute.com.