Strategy ₿

The Rise of Trusted AI

Discover how AI is transforming the BI
landscape and shaping the future of analytics

Strategy ₿

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Introduction

The rise of Artificial Intelligence (AI) is transforming the business intelligence landscape, reshaping how organizations gather, analyze, and act on their data. For decades, Business Intelligence (BI) has enabled data-driven decision-making, powering operational improvements, enhancing product quality, and increasing efficiency across sectors. But with the advent of generative AI, a new era has begun—one where advanced AI models extend the power of BI by bringing deeper insights, creativity, and adaptability to the forefront of business strategy.

At the heart of this transformation is Strategy One, a cloud-native platform designed to seamlessly integrate AI and BI, turning data into a trusted resource for innovation all on a single unified platform. By leveraging AI's natural language capabilities and sophisticated analytics, Strategy is pushing the boundaries of what's possible—helping organizations streamline operations, deliver richer insights, and scale smarter solutions.

This whitepaper explores the challenges and opportunities of merging AI with BI and demonstrates how Strategy's cutting-edge technology is empowering organizations to drive actionable intelligence across their enterprise. In the following sections, we will explore how the Strategy One platform can help your organization harness AI to deliver trusted, pervasive, actionable real-time data experiences, enhance decision-making processes, and propel innovation in a rapidly evolving digital landscape.

Challenges with AI and Data Analytics

By integrating AI seamlessly into your data experiences, you can supercharge insights across any application. However, AI by itself is not a complete analytics solution. AI relies on the quality of data being fed into it. Data inconsistencies and misinterpretations decrease the output quality, resulting in less effective AI models or worse, inaccurate results that do more harm than good.

Challenge 1: AI Does not Fix Data Quality and Data Silo Problems

Even the most sophisticated AI can only query and understand the data it interacts with. Inconsistent or poor-quality data will return flawed results. This is particularly evident in organizations where data analysis happens via spreadsheets or point-solution BI. The absence of a Single Version of the Truth (SVOT) leads to non-standardized definitions and conflicting interpretations. Such discrepancies lead to disagreements over the results which undermine trust in the data and the decisions derived from them.
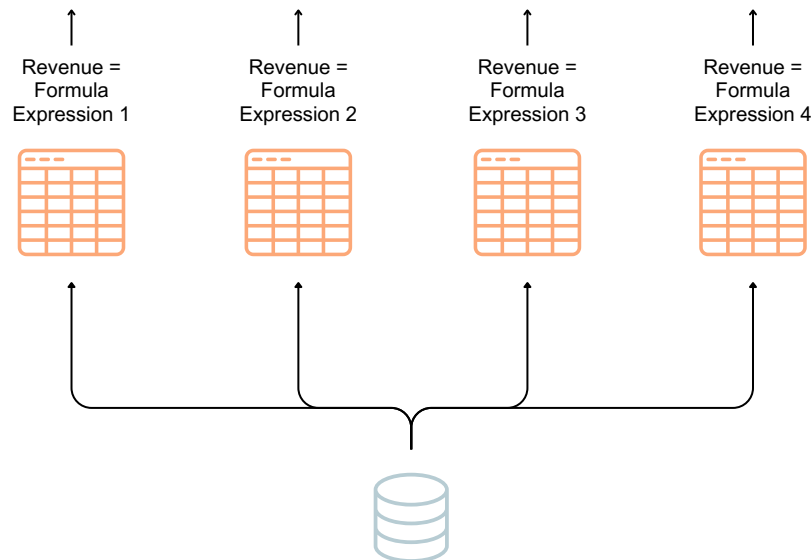
When data lacks a unified reference point it exists in silos. Implementing AI on top of data silos exacerbates the problem of data inconsistencies. There is no unified data source that AI is accessing and analyzing.

The solution to this is robust data management and alignment. Data preparation accounts for a significant portion of the effort involved in crafting AI solutions. Industry experts suggest that over 80% of the work dedicated to AI solutions is invested in data integration tasks. Without proper attention to data quality and standardization, even cutting-edge AI-driven solutions will fall short. Quality data is crucial for effective AI systems.

Challenge 2: AI and the Problem of Inaccurate Data Interpretation

Current AI Large Language Models (LLMs), such as those offered by OpenAI, are engineered to generate human-like text. They understand context and perform a wide variety of natural language processing tasks. However, these models are not specifically designed for reliable data calculations. They are trained on textual datasets, so their ability to perform numerical operations depends on how well math is described in the data. This limitation can lead to LLM hallucinations, resulting in inaccuracies when making precise mathematical computations. In other words, while OpenAI's LLMs shine in linguistic tasks, their ability to handle numerical calculations is not their core strength.

Consider the following illustrative example where we provided GPT with a straightforward dataset in CSV format, consisting of Subcategory, Quarter, Revenue, and Profit (50 rows total). We then asked the AI model to give us the total Profit for each Subcategory, a task requiring a simple Sum aggregation. The response GPT returned did not match the expected results.

GPT Prompt Request

Can you help analyze the data below, list out the total profit for each subcategory:

"Category","Subcategory","Quarter","Profit","Cost"
"Electronics","Audio Equipment","2024 Q4","24557","136934"
"Electronics","Audio Equipment","2024 Q3","6539","32785"
"Electronics","Audio Equipment","2024 Q1","6440","27290"
"Electronics","Audio Equipment","2023 Q4","6412","41322"
"Electronics","Audio Equipment","2024 Q2","5522","27144"
"Electronics","Audio Equipment","2023 Q3","3899","20094"
"Electronics","Audio Equipment","2023 Q1","1481","6359"
'Electronics","Audio Equipment","2023 Q2","1477"," 6143"
'Electronics","Audio Equipment","2022 Q4","872","6674"
"Electronics","Cameras","2024 Q4","61506","326765"
"Electronics","Cameras","2024 Q3","33718","158769"
"Electronics","Cameras","2024 Q2","29184","144870"
"Electronics","Cameras","2023 Q3","15855","72713"

Expected Results

Category	Subcategory	Profit
Electronics	Audio Equipment	$57,199.00
	Cameras	$198,290.00
	Computers	$146,670.00
	Electronics	$664,858.00
	TV'S	$44,557.00
	Video Equipment	$218,152.00

Incorrect Response from GPT-4

Category	Subcategory	Profit
Electronics	Audio Equipment	$56,719.00
	Cameras	$186,826.00
	Electronics	$123,370.00
	TV'S	$44,557.00
	Video Equipment	$187,530.00

The implications of these limitations are significant in the field of analytics where accuracy of results is crucial. For example, in the preparation and analysis of financial statements, every decimal point matters, and even the smallest miscalculation can have huge consequences.

Bridging the Divide: A Semantic Graph to Solve AI's Data Challenges

Data silos and the associated data inconsistencies, as well as limitations of AI in data analysis, can be solved with a Semantic Graph, a technology layer that provides centralized and reusable data structure.

> **A Semantic Graph acts as an interpretive layer, translating source data into meaningful and unified business concepts and relationships. It standardizes an organization's business logic and definitions, forming data relationships that provide an enterprise-wide single version of the truth.**

Not only does it help to bolster data integrity, but it also serves as a vital component for AI integration, guiding the AI in its understanding and interpretation of the data.

## The Role of Prompt Engineering and Semantic Graph

Using AI to directly interpret and aggregate data can be unreliable. However, employing AI prompt engineering with a Semantic Graph resolves this issue. Prompt engineering fine-tunes the AI's language abilities to translate specific queries into actionable commands for the Semantic Graph. In this setup, the AI excels at translation rather than computation. It interprets the user's request through prompt engineering and maps it to components the Semantic Graph comprehends. The Semantic Graph, with its robust grasp of data relationships and standardized business logic, handles the computational task for accurate and reliable results.

The illustration below details this intricate process, showing how both prompt engineering and the Semantic Graph act together as a crucial bridge in AI-BI integration. By linking AI's natural language interpretation with the Semantic Graph's deep comprehension of data relationships, they ensure accurate and reliable analytics.
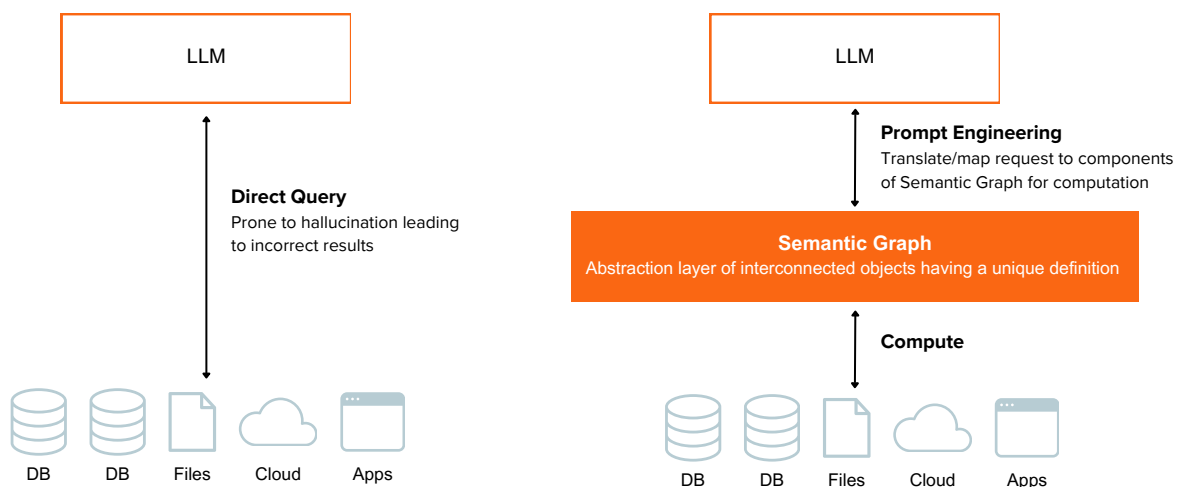
Depth and Breadth of Semantic Graph Matters

The Semantic Graph in BI is often expressed in the context of various downstream data tools and applications. The design and sophistication of the Semantic Graph can vary widely, reflecting the specific needs and capabilities of the tools and platforms in use, as shown below:
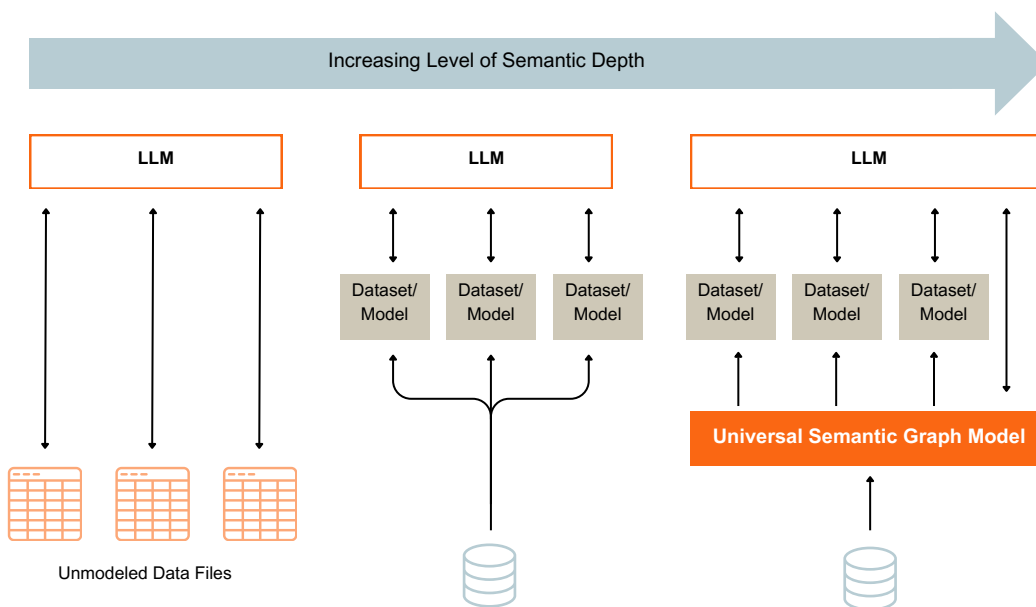
From a data abstraction perspective, basic productivity tools like Microsoft Excel often lack a semantic layer/model altogether, whereas point-solution BI tools usually confine semantic definitions within individual datasets. In contrast, more robust BI platforms utilize a foundational Semantic Graph that resides below the dataset level, serving as a base to create various upstream objects, including datasets.

A Semantic Graph that's embedded deeper into a platform can offer more possibilities for more comprehensive AI integration. These capabilities can include, but are not limited to, those listed in the illustration below:
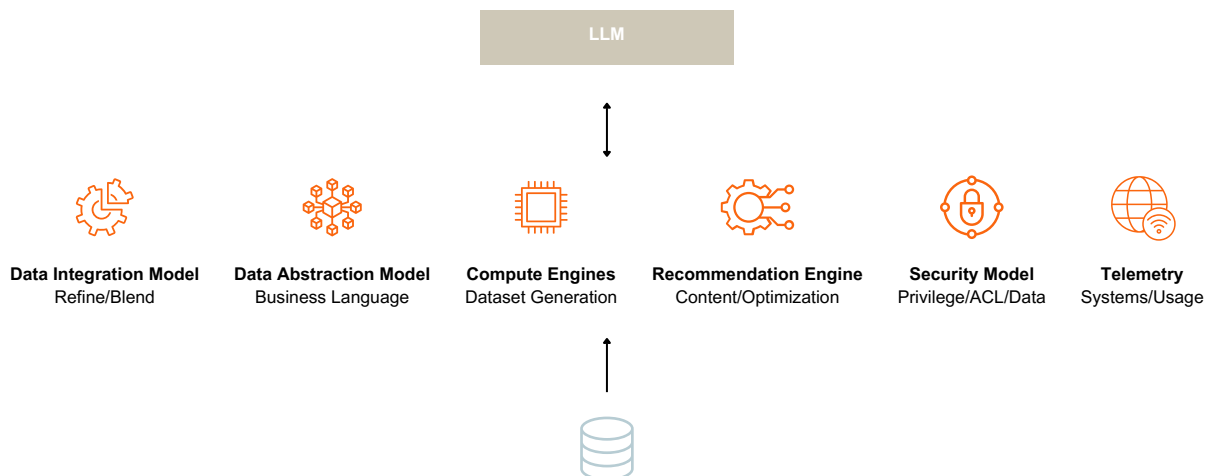
Together, a Semantic Graph and an AI model enable prompt engineering to tap into additional elements of the graph. For example, the security model in the Semantic Graph can actively evaluate access permissions or data restrictions against a dataset when a user makes an AI request. In this way, it can solve data privacy and governance challenges. Usage and system telemetry can further refine AI interactions, optimizing requests or tailoring recommendations for queries. The more robust a Semantic Graph, the more flexibility it offers for deeper AI integration in analytics.

> **Strategy's Semantic Graph is not just the backbone of our AI-BI platform, it's also the nerve center. Our dynamic, centralized data model permeates our entire platform, guiding and governing AI-generated insights. Our Semantic Graph's key application lies in prompt engineering, which optimizes language models for specific tasks. By seamlessly mapping user inputs to components within the Semantic Graph, we ensure governance, security, and precision in AI models and their responses.**

AI + BI Integration: The Strategy Advantage

Strategy's distinct qualities, defined by four fundamental pillars, shape the core of our AI-BI value proposition:

1. User experience (**UX**) to make injecting AI everywhere easy
2. **Trusted** data to fuel your AI system
3. **AI skills** included OOTB so you don't need them
4. **Integration** with flexibility to fit into your ecosystem

Not only does it help to bolster data integrity, but it also serves as a vital component for AI integration, guiding the AI in its understanding and interpretation of the data.

UX

Our suite of AI-powered products enable fully customizable solutions and makes integrating and distributing AI to your organization easy.

Auto Answers
Auto, our conversational AI chatbot, leverages generative AI to answer questions and provide insights that reveal the deeper meaning behind your analytics. Not only is Auto self-service, but it's also embeddable in any application and supported across all languages.

Auto Dashboard
Auto in the authoring experience enables non-technical users to create AI-powered dashboards. Ask a question and watch as the data visualization generates. No analyst expertise needed.

Auto SQL
Using natural language processing, plain text is translated into SQL statements allowing architects to generate accurate and efficient SQL queries. Auto can even break down the code and explain the logic to you.

Auto Bot
Easily build and deploy anywhere—web, mobile, embedded, or in Teams. Customize bots for your business needs and ask questions from your environment. Try our 30-day Auto Express trial today.

Auto Narrative
Add natural language summaries to your dashboards that reveal key findings and incorporate data points such as top products sold, total revenue, and comparisons against KPIs.

Auto + HyperIntelligence
Deploy AI-powered insights to every user in your organization. Available on web and mobile, this perfect AI+BI duo delivers critical information without having to switch screens.

Advanced Analytics with AI
Gain insights with precise forecasting, allowing users to better anticipate market trends and optimize future strategy.

Trusted

Crafting effective AI solutions hinges on high-quality data, but a significant portion of this effort is spent in meticulous data preparation. Industry experts estimate that over 80% of AI solution work is dedicated to data prep. This is where Strategy excels. We provide a ready toolset to seamlessly integrate diverse data sources.

Once integrated into our platform, data undergoes a transformation into an advanced abstraction layer, forming the bedrock of our Enterprise Semantic Graph. These objects are the building blocks for scalable development and consumption, and are fortified by Strategy's robust object access controls, data security measures, and governance protocols.

Not only is our data trusted, it's also highly compatible and positioned to work with the latest trends in technology. Our software, paired with a cloud-native framework, uses one of the most open architectures in the market. You can choose from popular cloud providers like AWS, Azure, or Google for a more flexible and scalable infrastructure. These capabilities are critical for establishing the trust that is pivotal for a seamless AI-BI integration.

AI Skills

Kickstarted by a user's query, Strategy's integration with Azure OpenAI LLM processes the user's input and considers metrics, filters, and sorting criteria to generate a structured output for the semantic layer to interpret. The semantic engine then processes and generates an aggregated result set and visualization. The LLM then refines the aggregated or calculated result into the final narrative, explaining the results in natural language. With our robust Semantic Graph, data interpretation is precise, delivering consistently reliable and trusted insights.

But that's not all. We go further, integrating a Python engine optimized for advanced analytics, taking your insights to the next level. From root cause analysis to emerging trends, it's all at your fingertips. Here are a few of our key differentiators:

- AI-ready, pre-licensed environment for instant deployment
- Automated prompt engineering
- Out-of-the-box Python engine supports ML models and advanced analytics
- Seamless transition from traditional BI to a cutting-edge AI-powered solution

Integration

Crafting an AI-driven analytics solution is just the first step. Ensuring its widespread distribution and adoption is equally, if not more, critical for unlocking the full value of AI. Consistent with Strategy's vision of delivering 'Intelligence Everywhere,' we democratize your insights by making them accessible across a variety of information access points. Seamlessly access robust pathways through web and mobile, embedded apps, HyperIntelligence and Microsoft Teams to ensure that your AI-powered insights reach the right users, when and where they're needed, maximizing their overall impact.

Built for long-term flexibility, our solution is engineered with future-proof architecture. We've completely revamped our product for native cloud use with a modern containerized setup. This enables fast deployment of microservices aligned with your core systems, customer apps, and record-keeping. It ensures scalable, secure analytics and data insights at the edge of your organization. We're multi-cloud–compatible with Microsoft, AWS, and Google–offering flexibility for your long-term cloud strategy.
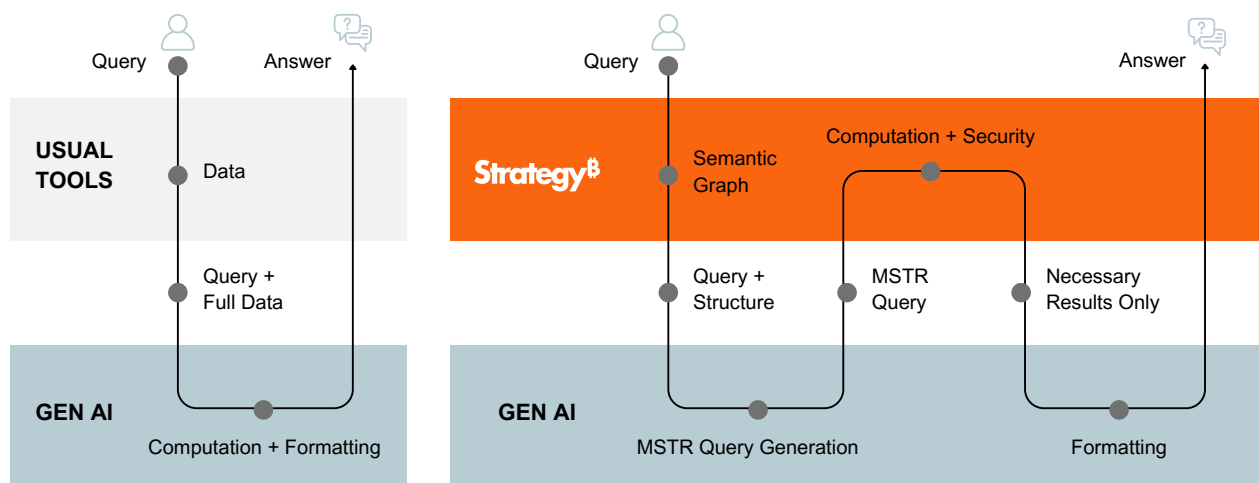
The Strategy Difference

With a legacy spanning over 30 years in Enterprise BI, Strategy stands firmly at the intersection of AI and BI technologies. Our innovative framework seamlessly integrates the best of both worlds, setting a new standard for data-driven decision-making.

Why Strategy? Let's Explore.

- **Precision Meets Intelligence**: While BI specializes in structured queries and precise calculations, it sometimes falters with unstructured data and complex reasoning. AI fills these gaps effectively. By combining their strengths, we provide a more complete, efficient way to interact with your data.
- **Semantic Depth**: Our unique semantic graph technology allows you to uncover rich insights and deep connections within your data, going beyond conventional analytics.
- **Quick AI Deployment**: Our platform is designed to expedite your AI initiatives, allowing you to deploy AI-powered applications swiftly without compromising data integrity or security.
- **Governance and Compliance**: Alongside our expert team to guide your AI journey, our robust governance tools ensure that your data is secure, compliant, and efficiently managed.

First to market in September 2023, Strategy AI provides an array of generative AI powered capabilities to empower users of any skill level. For data experts, Strategy AI delivers Auto SQL to expedite data modeling. For business analysts, Auto Dashboard expedites the generation of new analytic content. And for content consumers, Strategy AI provides Auto Answers and the stand-alone Strategy AI Bot which makes it easy for any user – regardless of analytic skill level - to interact with data using natural language.

The ability to rapidly deploy AI applications, explore intricate data relationships, and maintain rigorous data governance makes Strategy the logical choice for those looking to leverage the full potential of AI for their organization and their customers.

SMART
NLG, Reasoning, Unstructured Data

PRECISE
Trusted Calculations, Secure, Structured
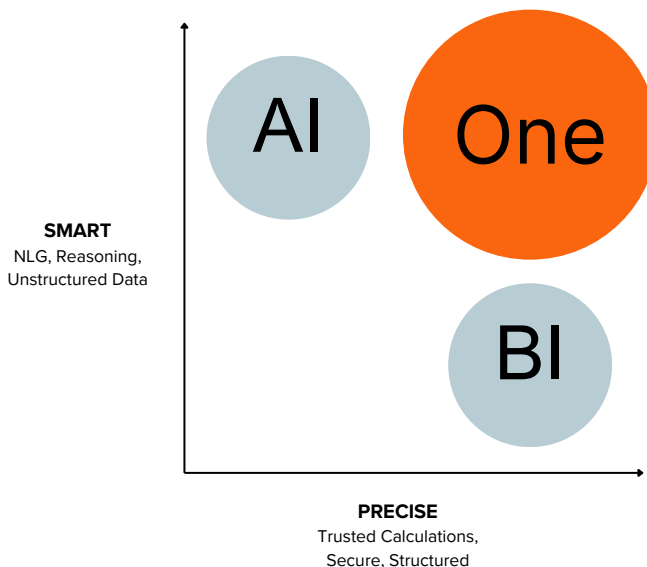
Elevate Your Analytics, Transform Your Business

The union of AI and BI is not merely an integration—it's a revolution that launches your organization into a future of limitless analytical possibilities. While the journey involves complexities, the destination is an elevated plane of data-driven decision-making. Armed with our advanced Semantic Graph and strategic AI implementation framework, we're not just prepared for challenges—we're built to overcome them.
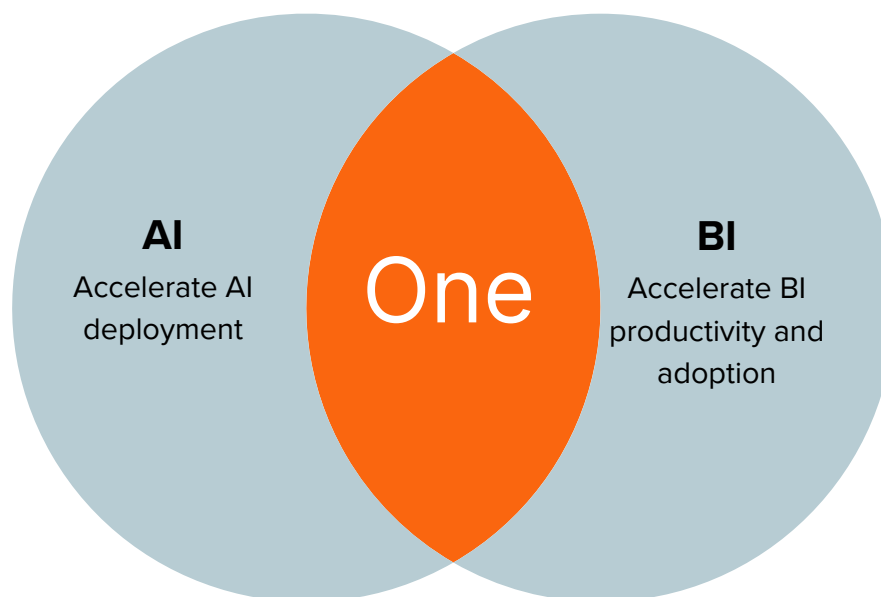
Join us in breaking through the limitations of traditional analytics. We are deeply committed to ensuring you not only start but also accelerate your AI initiatives effectively and responsibly. We're not just following trends; we're setting them, pushing the envelope of what AI and machine learning can bring to the space. This is not a promise for the future—it's our mission today, turning "Intelligence Everywhere" from a vision into a transformative reality for your organization.

> **Ready to try AI yourself? Join the <u>Strategy AI Ramp-Up Program</u> and accelerate the implementation of Strategy AI in your organization, delivering a live solution in just six weeks. To experience Strategy AI capabilities firsthand, sign up for <u>Auto Express</u>—a free 30-day trial of Strategy AI and select Strategy features.**

At Strategy, we're not only excited about the future, we're actively shaping it. And we can't wait to do it together.