

ARRIA

2025 Edition

Converging Technologies

Leveraging the value of two leading Generative AI capabilities



Understanding the Synergies and Differences between Arria + LLMs

Foreword

Arria proudly serves Fortune 500 and other leading companies with enterprise-level Natural Language Technology (NLT) solutions. Our commitment is to deliver mission-critical generative AI language automation for the enterprise with 100% accuracy, 100% of the time.

Arria leads in the category of data-to-text deterministic language generation and is the trusted provider and industry standard for process automation of language generation. Arria delivers a complete, end-to-end Language Platform – the first of its kind.

Arria is inclusive and independent, enabling integration with with the best-in-class technologies available on the market. Arria sits on top of it all, seamlessly integrating with other leading technologies and existing enterprise technology stacks.

Arria maintains a commitment to best practices, core values, and highest standards – providing the confidence that comes from consistency, control, and reliability when integrating with other tools (such as Business Intelligence, Robotic Process Automation, Machine Learning, Large Language Models, and others).

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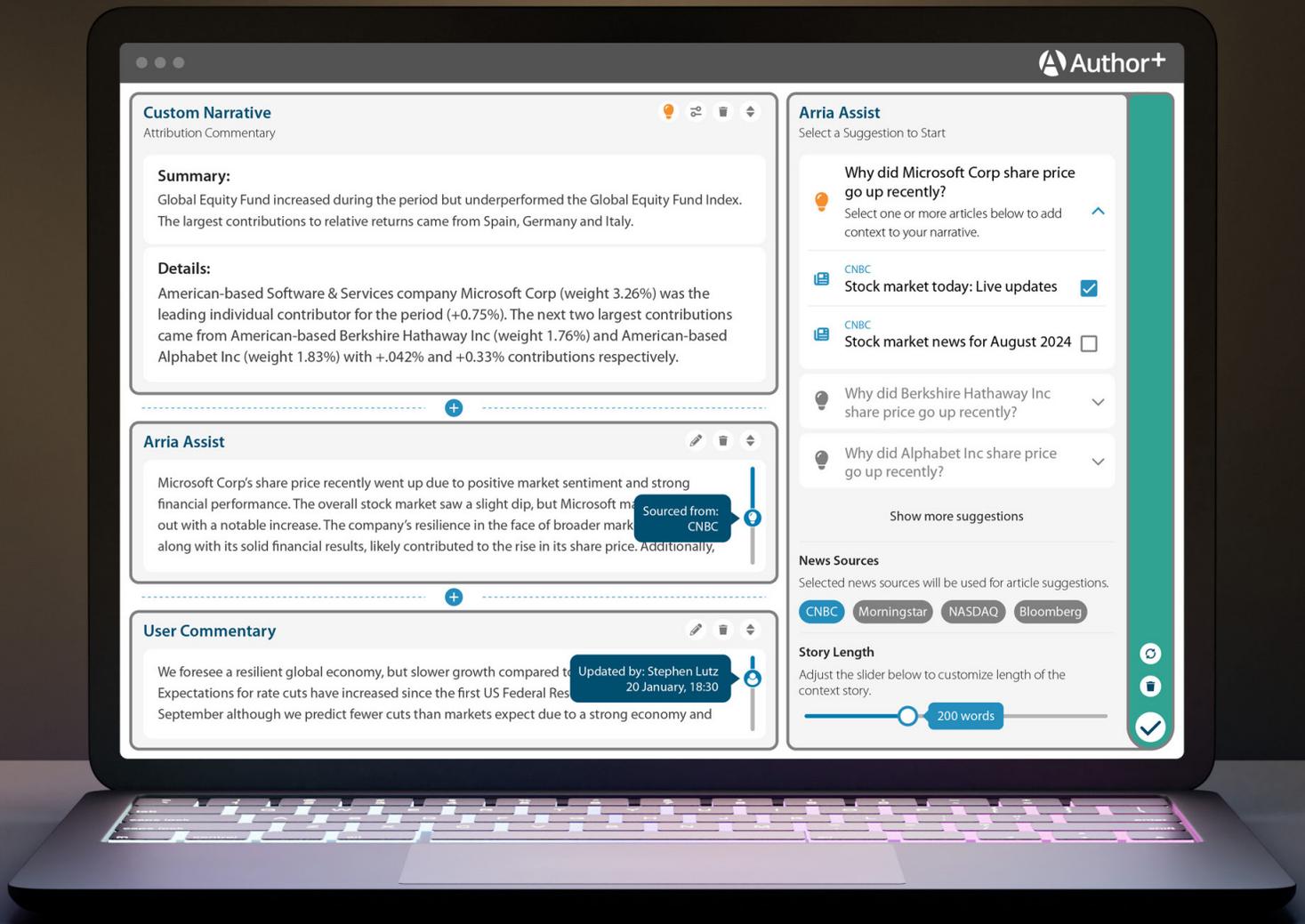
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The Arria Language Platform reliably brings together, best-of-breed deterministic natural language generation together with the creativity and dynamic experience of leading probabilistic LLM generative AI technologies.

Introduction

Arria is recognized as a pioneer and a global leader in the field of Natural Language Technology (NLT) and Generative AI. Arria has become the trusted source for enterprise-level solutions. With over a decade of serving Fortune 500 companies with process automation in production environments, Arria is uniquely positioned to understand the value and benefits of bringing together all language capabilities into one advanced Language Platform.

This document articulates the unique differences and synergies of deterministic and probabilistic language generation techniques, and the benefits of bringing them together into one platform. Market-leading technologies, when combined, will provide enterprise companies the opportunity to maximize the value of each. See how the convergence of these generative AI technologies will harness the power of advanced language generation capabilities in a single, dynamic, yet controlled environment.

What you will learn:

1. How the two technologies are uniquely different – and when and where to apply them independently or together.
2. Why Arria is at the forefront of enterprise-level mission-critical generative AI and is considered the leader in data-to-text, deterministic, natural language technology.
3. How Arria's approach to combining language technologies will accelerate enterprise-wide operational efficiencies, productivity, and cost-reductions.

LLMs and Arria are both natural language systems, but they have some differences in terms of their capabilities, focus, and the opportunities to bring the two technologies together to maximize accuracy and value. Read on to learn more.

Generative AI

A game-changing capability for the global enterprise

One of the most rapidly evolving AI markets is generative AI, which refers to AI models that can create novel content from original content. Outputs can be in images, text, music, code, speech, or video. By tapping into vast amounts of data, generative AI can rapidly produce creative solutions – resulting in efficiency for users. Generative AI will continue to be adopted for its creative value and time efficiencies. As users familiarize themselves with publicly available new releases, they will better understand the differences between early-stage generative AI models and more established ones.

When to Apply LLM Text-to-Text versus Arria Data-to-Text

Arria recognizes Large Language Model technology as a significant technical achievement with valuable capabilities, though there are clear differences between the two technologies. While LLMs excel in providing a tool for research and discovery, text-to-text summaries, re-writing sentences, editing content, and translating language, it is not a solution for addressing the complex, mission-critical challenges requiring accuracy and consistency that businesses are currently facing. Arria's data-to-text enterprise technology securely leverages a business's confidential internal data to generate narratives based on the results of mathematical algorithms and analytics to generate language insights that meet specific business decision-making requirements, particularly in compliant and regulated environments.

Arria's models are deterministic, predictable, controllable, auditable, and 100% accurate. With Arria, data is connected to Arria's natural language model and is processed but never stored. Human bias is removed, and Arria uncovers and communicates the truth within the data.

As a leader in generative AI, Arria has the ability to integrate the strengths of any LLM's machine-learning language model with our own natural language technology and methodology. The goal is mainstream adoption of the ability to transfer knowledge in words by leveraging the best features of the language technologies available today. The power of combining Arria's deterministic approach and LLM's probabilistic approach allow enterprise companies to leverage the strengths of both generative AI technologies to query and understand data in a controlled, deterministic way, combined with the power to search and retrieve internal documents and external information chosen by the user for summary by the LLM.

The Arria Platform seamlessly brings language technologies together suitable for enterprise, mission-critical applications where accuracy is mandatory.

The development and application of generative AI technology requires collaboration across multiple disciplines, including computer science, psychology, ethics, linguistics, and more. Interdisciplinary collaboration impels innovation while helping to ensure that generative AI is developed and used in a responsible and impactful way.

Generative AI technology has the potential to transform many fields and industries. It is important to approach this technology with a thoughtful and responsible mindset.

**85% Increase in productivity reported by users:
Generative AI has significant value and potential impact
in a wide range of enterprise applications.**

Uniquely Different

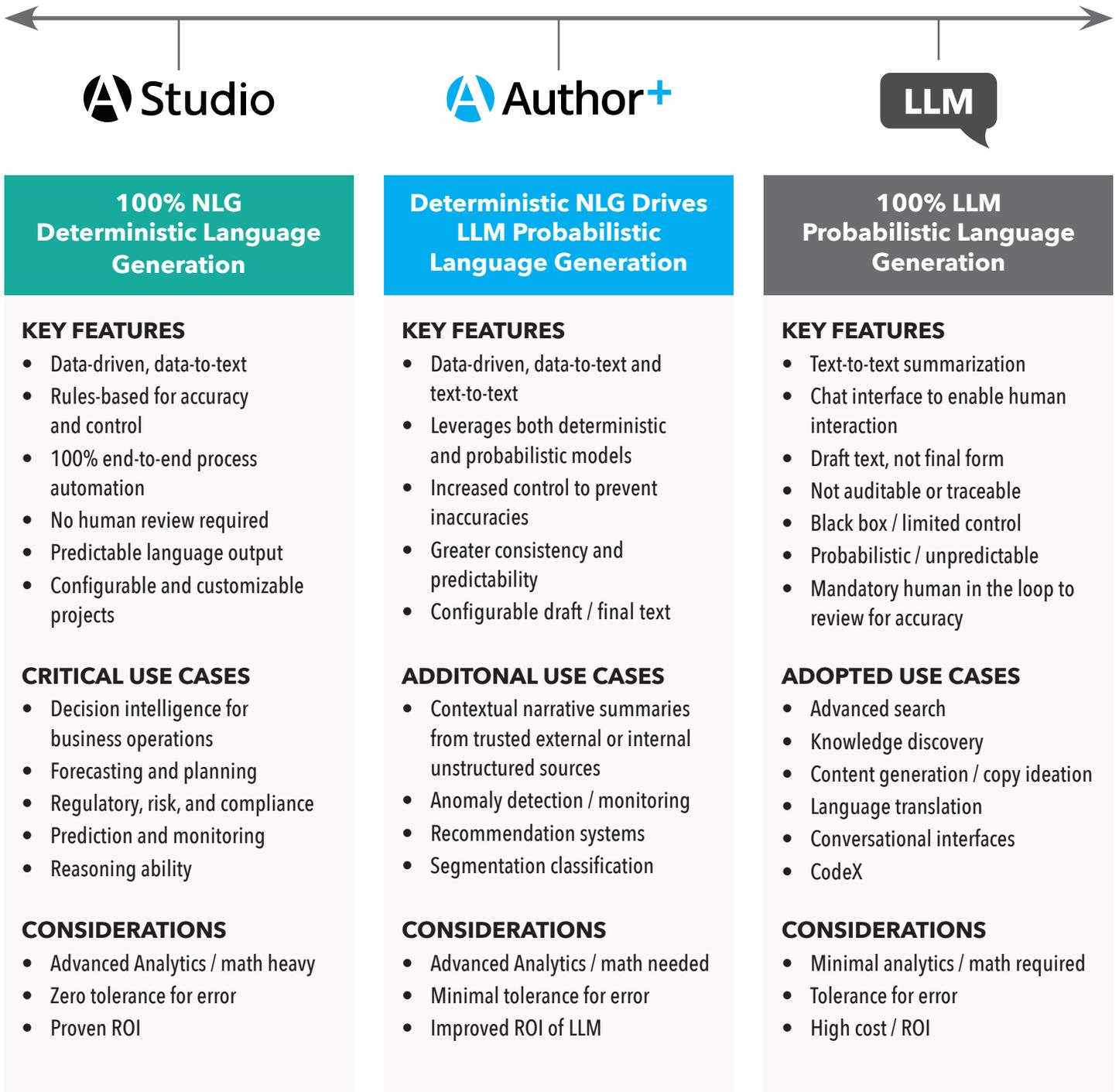
How Arria and LLMs differ in their approach

Arria Natural Language Technology (NLT) is a form of AI that brings together advanced analytics and sophisticated computational linguistics to fully automate the process of turning data into text. Designed to replicate the human process of expertly analyzing and communicating data insights, Arria dynamically turns data into written or spoken narrative – at machine speed and on a massive scale. By making complex data understandable, Arria’s technology enables knowledge transfer from data to humans, creating strategic intelligence that is easily understood by decision-makers across all lines of business within an organization. This transfer of knowledge accelerates human comprehension and intelligent action, revolutionizing the way businesses interpret their data and deliver information.

Arria Data-to-text generation involves creating natural language summaries from structured data sources such as spreadsheets, databases, or knowledge graphs. The goal is to convert the raw data into human-readable text that can be easily understood and used by people. Examples include, an executive report generated from financial data, or fund commentary generated from investment portfolio data. Arria’s data-to-text solution is currently deployed in a large installed base of Fortune 100 Enterprise clients. These clients have mandatory key requirements demanding accuracy, consistency, quality, traceability – and 100% control in mission-critical, compliant, regulated environments.

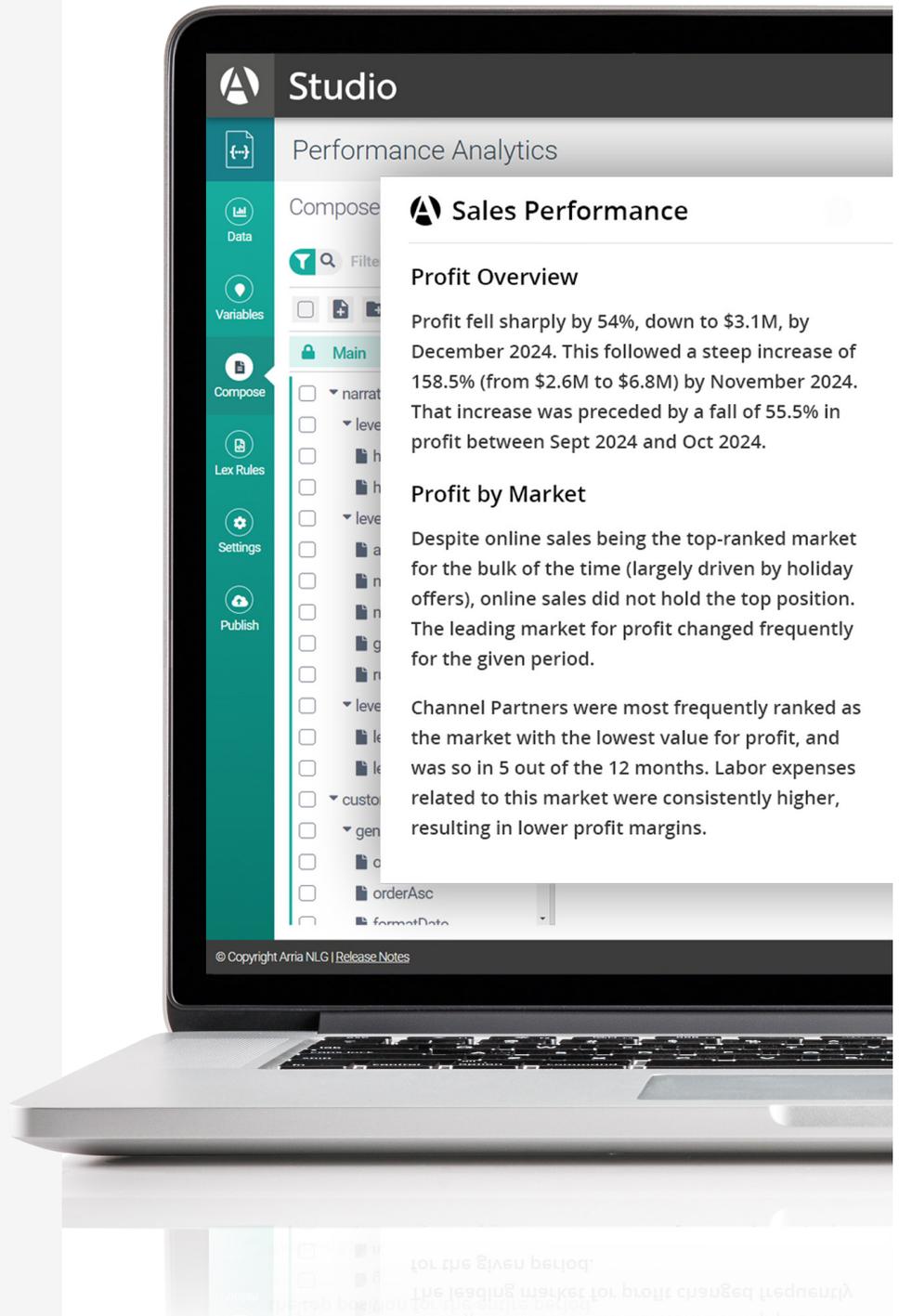
LLM text-to-text generation on the other hand, involves generating new text from existing text. Many of these LLMs have a chat interface to enable human interaction. The goal is to create coherent, grammatically correct, and semantically meaningful text that closely resembles natural human language. Text-to-text generation can be used for a variety of tasks, including research and discovery, language translation, text summarization, content creation, and dialogue generation. Many LLM text-to-text solutions are currently used to assist human authors in writing marketing content, debugging code strings, explaining complex topics simply, and writing essays. These large language models have some limitations due to their unpredictability, occasional inaccuracies, and significant cost and resource considerations.

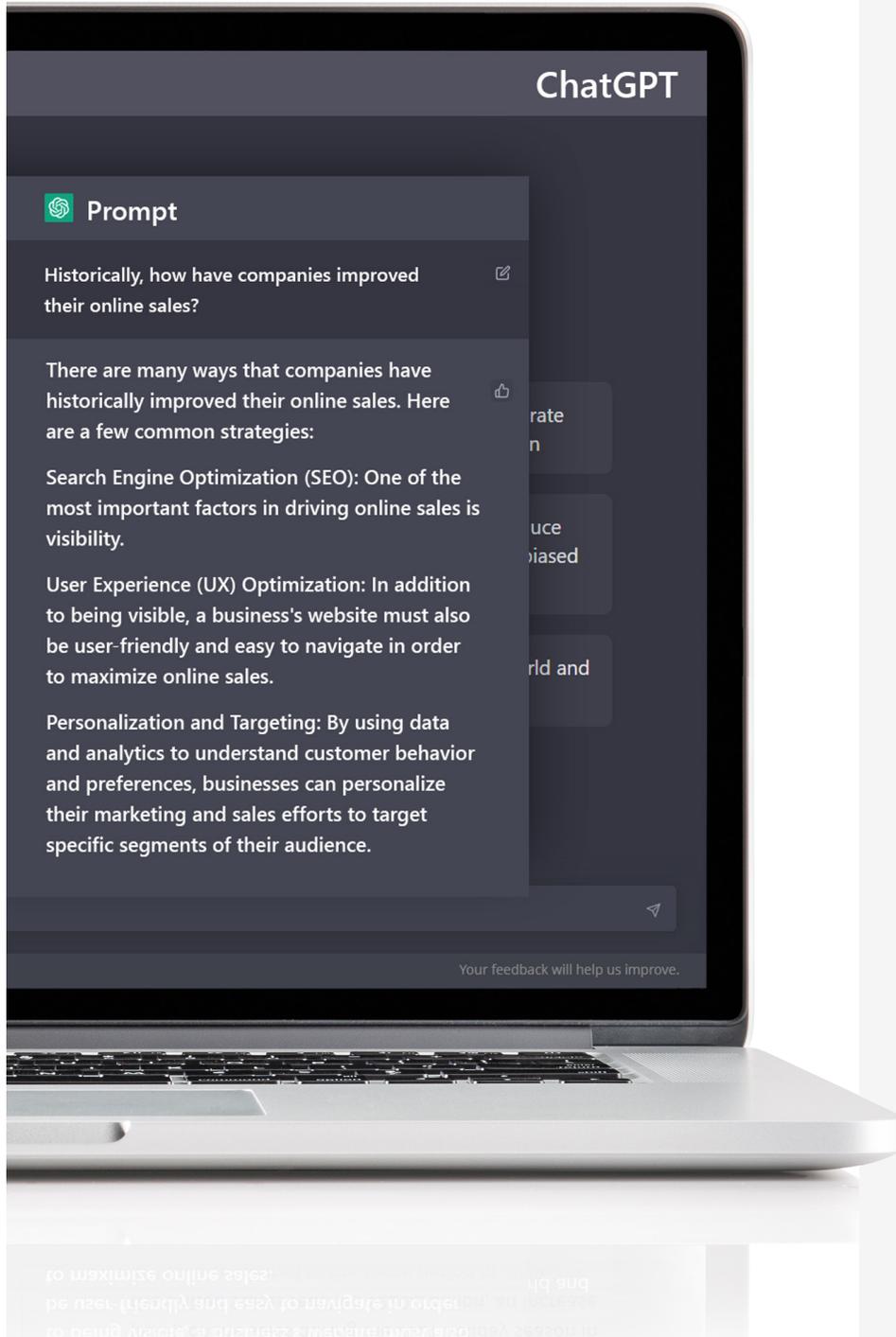
Unique Strengths and Key Differences



Arria Studio Key Features

- **Configurable, customizable** self-use automated language generation authoring tool
- **Combines advanced analytics** and advanced linguistics together in one platform
- **Arria narrative output, once set,** runs in perpetuity with 100% accuracy – full automation, no human required
- **Captures and replicates** the knowledge of a top industry expert analyst and report writer
- **Full process automation** with machine speed and scale – ROI reported: 209%
- **Proven and trusted** by Fortune 500 companies for 100% accuracy





Large Language Model Key Features

- **Discovery, research, and writing** assist tool at your fingertips to greatly enhance productivity
- **Dynamic generation of text** based on a wide range of public information
- **Enhanced user experience** with interactive question and answer functionality
- **Advanced linguistics and** language translation capability at machine speed
- **Search and summarization** capabilities that can be applied to any industry or topic
- **LLMs have trained on large** amounts of documents which allows them to answer questions on a wide range of topics

The Arria Language Platform

Leveraging Arria + LLMs in a single environment

The Arria Language Platform has been designed to meet the standards of mandatory accuracy for mission critical enterprise quality production use cases that can be deployed securely. The foundational building blocks are tried and tested.

The Arria integration approach is an LLM neutral strategy enabling customers to select the LLM that best complements their use case and meets their AI governance requirements. The Arria Language Platform converges the probabilistic capabilities of the LLM with the deterministic features of Arria Studio in a single environment.

Customers may choose to leverage LLM's such as, ChatGPT, or other LLM's as preferred. These may be already deployed within the customer environment or within Arria's private cloud offerings. Together, leveraging the best of both technologies in one seamless language platform.

Human knowledge, deterministic, and probabilistic language automation, in one secure platform:

The goal is mainstream adoption of the ability to analyze data and transfer knowledge in words by leveraging the best features of the language automation technologies available today.

The problem we solve by combining natural language technologies into one seamless workflow

The challenge LLM users currently face is the lack of consistency, predictability, and accuracy. Prompting must be precise and frequently requires external information beyond the training level of the LLM, so most often, the user needs assistance and guidance. LLM summaries are often broad, frequently inaccurate and always dependent on contextualization by a human reviewer.

Arria Author, with the power of the **Arria Assist** orchestration and administration layer, solves these problems (see diagram on page 16). Arria utilizes advanced prompt engineering techniques, called **Intelligent Prompting** (see pages 14-15), to provide the information needed to contextualize and control narratives via search and retrieve from both internal and external information sources. These information sources are always trusted sources defined and controlled by the customer. Enterprise clients have the option to access Arria Assist from within the Arria Language Platform.

Arria Assist adds a layer of control and support helping to provide contextual framing of the question to guide output accuracy. Arria Author provides one user experience and canvas to seamlessly view and edit responses from both Studio narratives and LLM summaries as well as add human written insights into one canvas. This brings the strengths of both approaches together to mitigate the weaknesses of large language models. This layer provides the modern author with an interactive, augmented interface to orchestrate narrative generation from both Studio and any LLM into a common view for co-authoring and final approvals.

Arria narrative outputs are always generated from data and therefore are always 100% accurate. Automation of reports and content generated by Arria act as the trusted baseline. In mission critical use cases LLM summaries require a high degree of control and human intelligence to review and approve the final content generated.



The Power of Converging Language Technologies

Arria Studio automatically turns volumes of client data into insightful narratives at machine speed and scale.

- 100% accuracy, 100% of the time
- Data-driven, non-biased descriptions
- Proven, trusted environment, used by Fortune 500 enterprise clients

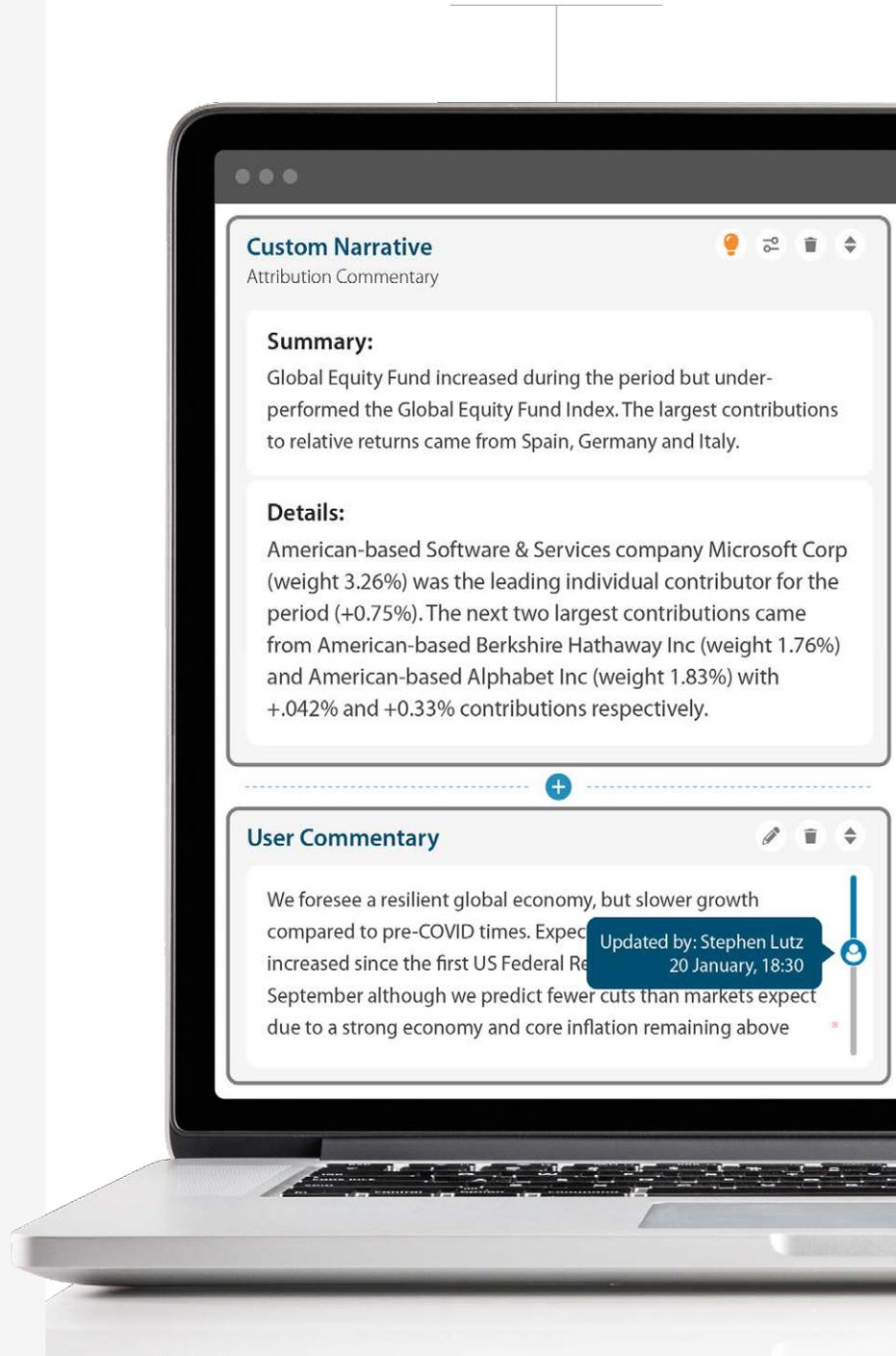
Arria Author brings together human knowledge, deterministic, and optional probabilistic language models in one secure platform. The power of combining these approaches empowers the modern author to write intelligent narratives, leveraging the power of Arria Author and large language model summaries from trusted sources.

Arria's language automation methodology is critical to ensure enterprise adoption, report accuracy, and compliance with AI governance. Delivering precise data-driven narratives, as the first crucial step, as well as human-authored commentary to provide insights not found in the data.

The Modern Author can leverage LLM functionality to summarize approved content, such as new articles or internal documents that are relevant to the data required to generate a report.

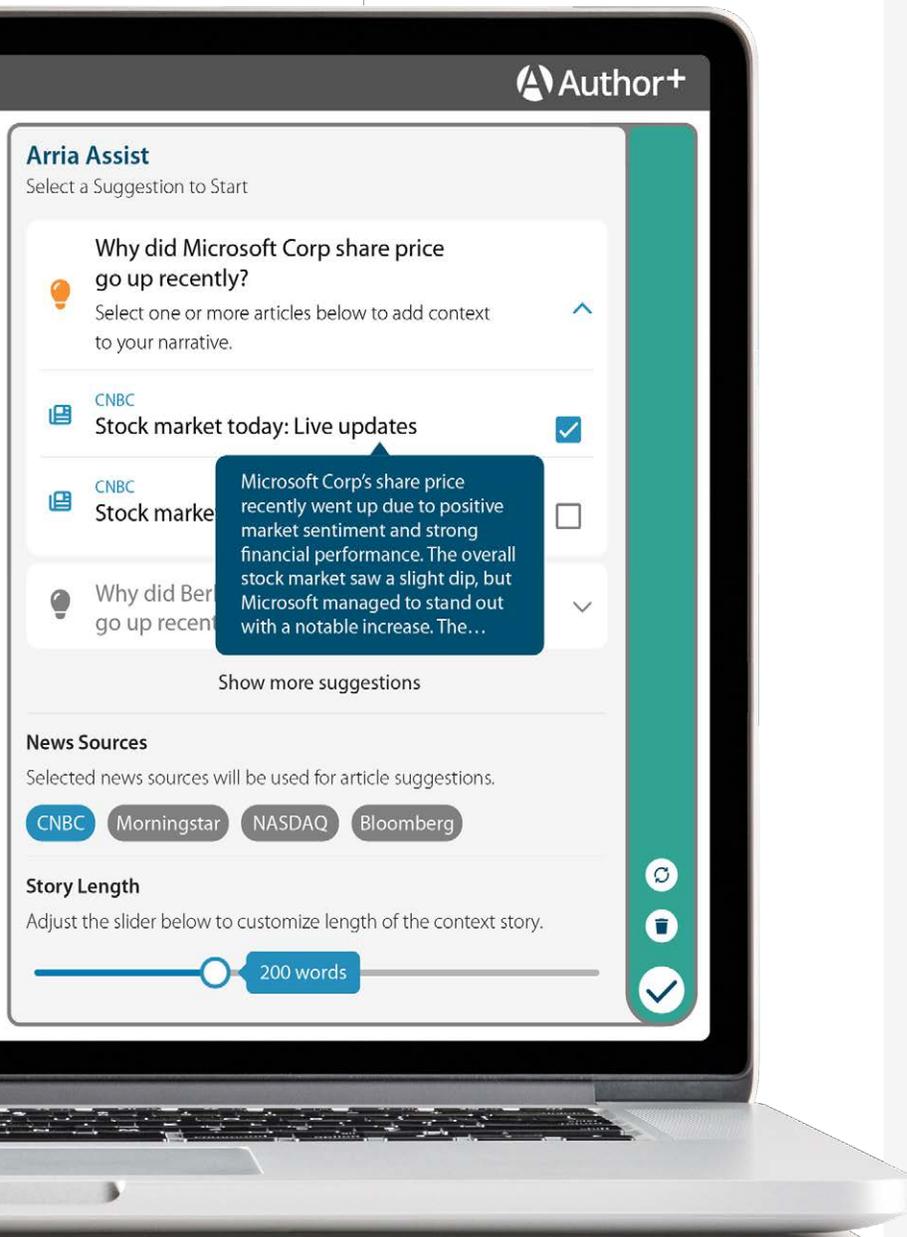
Start with:

Enterprise approved Arria
Data-driven Narratives



Expand with:

Arria Author+
Powered by Arria Assist



Arria Author Intelligent Prompting

AI-generated questions, aligned with Arria Studio generated narrative insights, are created for users to select and send to any LLM.

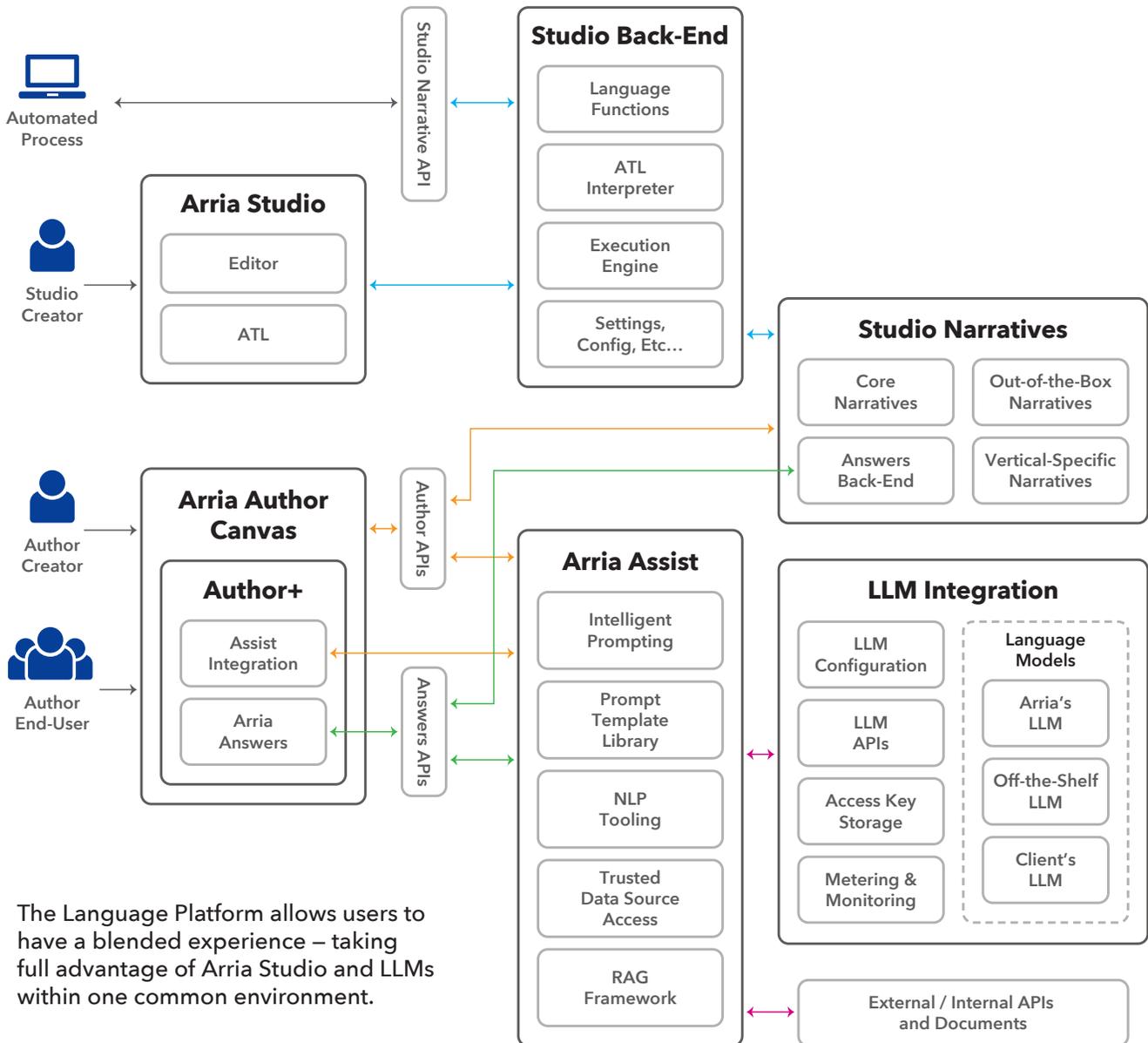
- Expertly composed questions
- Definable controls and guardrails
- Contextual and relevant responses

Information not available in data can be supplemented by search and retrieval to approved sources and then summarized by the LLM.

LLM (Text-to-Text) – the summarized text generated by the LLM is brought into the Arria Author canvas window for review, approval, and acceptance. Text can be humanly co-authored to combine and/or edit narratives and contextualized summaries.

The Arria Assist orchestration and administration layer includes Intelligent Prompting which is an advanced AI capability that auto-generates intelligent questions relevant to data-driven narratives. This feature also provides users with the ability to search and retrieve information stored inside existing databases as well as external sources, which are then summarized by the LLM. Bringing LLM capabilities inside **Arria Author** ensures best practices are adhered to.

The Arria Language Platform



The Language Platform allows users to have a blended experience – taking full advantage of Arria Studio and LLMs within one common environment.

The Arria Difference

Arria's unique approach to language generation brings together the best capabilities of deterministic models and probabilistic large language models – specifically to address the needs of enterprise mission-critical use cases. In these applications 100% accuracy is mandatory to enable effective decision making.

Large language models alone have limitations due to their unpredictability, occasional inaccuracies, and significant cost and resource considerations.

The Arria Language Platform specifically addresses key requirements including controllability, trackability, security, predictability, consistency, and trust.

Arria brings together the power of your best data analysts, expert report writers, and key decision makers.

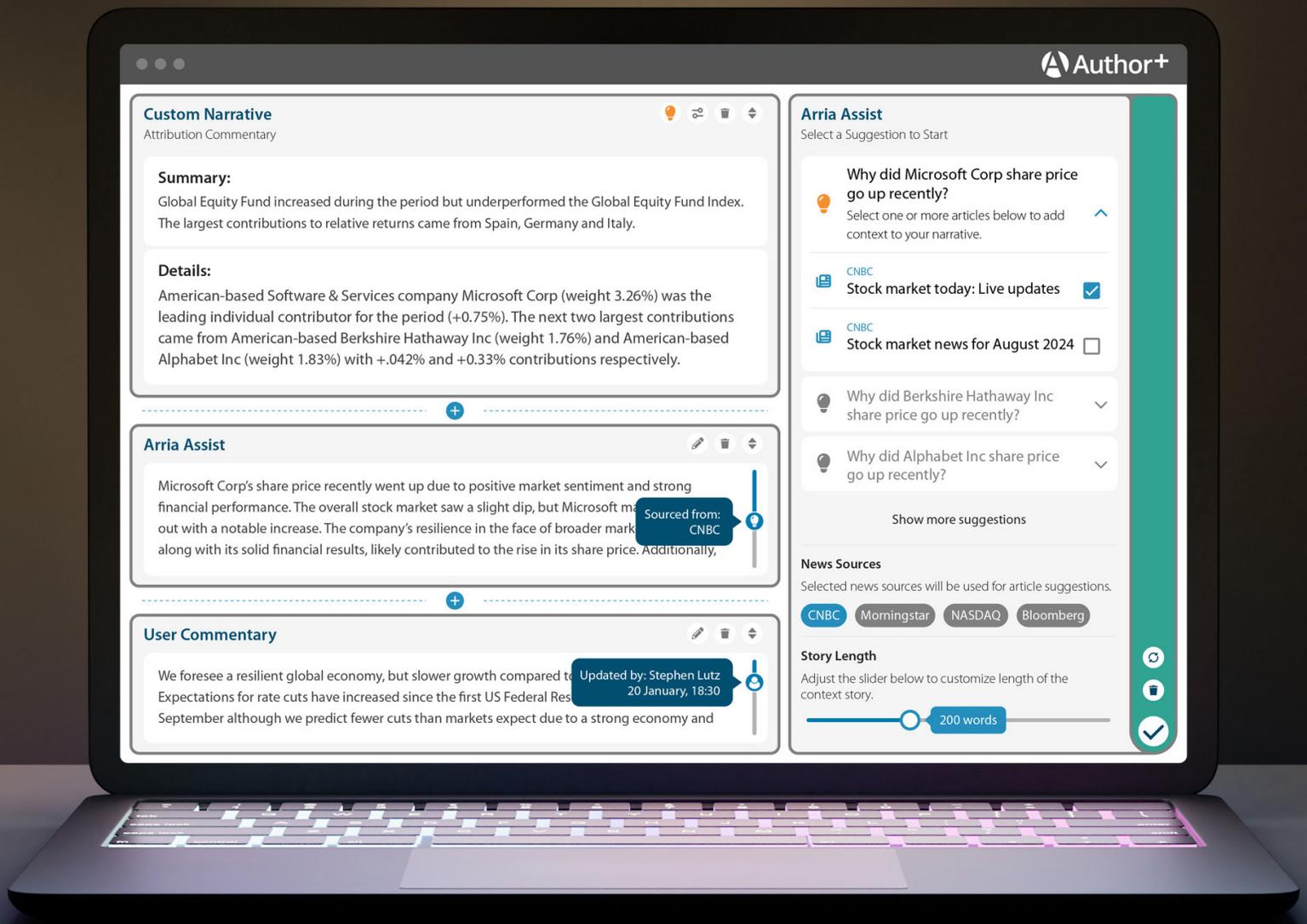
Redefining information delivery to accelerate intelligent decision making.

“Arria is a world leader in Natural Language Generation”

– Gartner: “Market Guide for NLG Platforms”
Independent Research Report

Creating a Symphony

Although the two technologies are different, they can be used in concert. Arria and LLMs offer unique differences depending on the outcomes a business is trying to drive and can create synergy when leveraged together.



Natural Language: Uniquely Human

Every organization in the world, no matter the size, location, or industry, depends on language to communicate, comprehend and provide direction. Automating this uniquely human ability offers unprecedented value to organizations. Giving the power of language to the machine will change the way humans interact with data.

Merging the benefits of Arria + LLMs

- **Full Control:** Arria Author brings the power of LLMs into the Arria Language Platform, which features the Arria Assist administration and orchestration layer, providing users with full control of narratives.
- **A Single Environment:** The Arria Language Platform brings together data-to-text and text-to-text in a single, co-authoring Modern Author environment.
- **Merged Narrative Output:** Combining the two capabilities provides full human-in-the-loop control by the user to edit and approve the generated narrative.
- **Improved Speed and Efficiencies:** The Arria Language Platform provides the ability to fully automate narrative generation to achieve maximum operational efficiencies and cost savings in a controlled environment – at machine speed and scale.



Technology Suite

The Arria Language Platform empowers businesses with a comprehensive suite of Natural Language Technology solutions



ARRIA

Products:



Arria Language Platform: An easy to use, highly scalable language generation platform consisting of the products listed below. We empower enterprise organizations with the ability to understand and communicate mission-critical business insights they can trust to drive intelligent decision making.-



Arria Studio: Self-use NLG authoring platform that transforms structured data into natural language. Through algorithms and modeling, it replicates the human process of expertly analyzing and communicating data insights – dynamically turning data into written or spoken narrative.



Arria Author: Brings together human knowledge and deterministic and probabilistic language models in one secure canvas. Users have the ability to incorporate rules-based, data-driven output from Arria Studio, integrate carefully crafted, domain-specific content authored by human experts, and add contextually relevant LLM summaries derived from sources you trust.



Arria Answers: An advanced Conversational AI application that combines the power of LLMs with the reliability of curated data. Arria Answers understands your queries and provides accurate responses you can trust, mitigating risks. The answers provided by Arria are specific to your company's approved data (internal or external).



Arria Apps: Pre-built analytical and language models to instantly generate language from data. Descriptive Statistics, Target-Base Variance, Time-Based Variance, Pie Chart, Bar, Line Graph, Ranking, Trend, Correlation Analysis, and Anomalies Analysis.



Arria Connect: Allows product developers via API to add the Arria Language Platform capabilities into any API-based solution. Speed up your generative AI development work using Arria's pre-built libraries. This software development kit greatly accelerates the embedding of language generation add-ins into BI tools, dashboards or other applications.

Integrations:



Arria for BI: Available for all major Business Intelligence platforms. Easily add intelligently generated narratives to your dashboard and augment your visuals with instant insights and data communication.



Arria for Excel: Off-the-shelf, ready-to-use integration brings the power of language to the most widely adopted business analytics tool.



Arria for RPA: Generative AI and Robotic Process Automation (RPA) combined into a seamless single platform. Using these two technologies together gives enterprise level clients the ability to dramatically transform their operating models and gain a competitive edge in the marketplace by significantly accelerating their automation.

Section 4

Unprecedented Opportunities

Turning data into strategic intelligence

The ability to automate language generation holds unprecedented opportunities. LLM technologies, like ChatGPT, will transform content creation workflows and productivity. The full value of language automation is in its ability to combine content creation with data-driven insights generated from Arria Studio to effectively make mission-critical business decisions.

All industries share the same challenge of understanding large volumes of data too vast for humans to review and interpret quickly. To be effective in their work and strategic in their direction, people need the most up-to-date information, especially in dynamic environments.

Since any unrealized value within data has a costly impact on business, organizations are investing heavily in digital practices and process automation.

Augmented Intelligence:

The power of machine and human lies in their ability to work together to achieve outcomes that are beyond the capabilities of either one alone.

The value delivered across commercial applications

The enterprise mission-critical commercial applications of generative AI are vast and varied, as translating data into actionable understandable language is necessary for operational facets of every business. The greatest effectiveness comes from accurately automating time-intensive data analysis and reporting activities. Below are some examples of high-value use cases for Arria:

Business Intelligence: Accelerate the generation of reports and summaries from data sets, making it easier for businesses to understand and act on their data.

Operational Reporting: Automating the generation of reports that contain business metrics essential for managing performance KPI's that drive critical operational decisions. (Eg. Sales, Revenue, Expense, Inventory Management, Supply Chain etc.)

Investment Commentary and Stock Stories: Instantly analyzes portfolio data, speeding time to accurate insights and data understanding while eliminating human error and the need for rework. Automated commentary is accurate and can be customized to reflect the voice of the firm. Automated stock performance summaries include current event impacts to portfolios.

Clinical Study Reporting: Enable automation of drug data that helps pharmaceutical companies bring drugs to market faster by automating medical reports, saving significant time and money while increasing scalability and efficiency.

Content Automation: Automatically generate data-driven written content and news articles.

Intelligent Process Automation

The advantages of Arria's unique methodology

The Arria Language Platform provides the capability to implement 100% end-to-end process automation that generates language that does not require human review. The language output is data-driven, predictable narrative that can be utilized in fully automated reporting processes. The language generated is ideal for analytics-heavy, mission-critical use cases that are focused in; decision intelligence for business operations, forecasting and planning, regulatory, risk, compliance, prediction, monitoring and reasoning. Arria enables a higher volume of business productivity by improving the speed of decision-making and intelligent action, thereby driving business results.

Bolster Unified Planning: Not only does Arria's technology turn complex, structured data into natural language at a rate and volume not humanly possible, it accelerates the process of disseminating insights across organizations, removing silos and democratizing data understanding.

Compliance and Regulation: Arria's Language Platform enables companies to stay in compliance by automatically generating reports and other documents that meet regulatory requirements.

Data Security: Unlike many of the commercially available LLM products that have well documented security vulnerabilities, the Arria Language Platform has addressed these security vulnerabilities with a unique approach. For use cases where end-to-end 100% process automation is required, customers leverage Arria Studio only. Arria Studio is a data processor. For customers looking to leverage the capabilities of an LLM, other components of the Arria Language Platform may be utilized. Arria Author and Arria Answers, leverage the Arria Assist layer to add administrative features and controls to all prompts sent to the LLM. Additionally, the LLM is fully containerized within the Arria Platform.

Delivering Automation with Accuracy

The impact of Intelligent Process Automation (IPA) is radically enhanced efficiency, increased worker performance, reduction of operational risks, and improved response times and customer journey experiences. This underscores how Arria drives productivity and facilitates intelligent business operations.

Increased Efficiencies: By generating data stories at the click of a button, Arria frees employees from repetitive, manual work to spend more time on knowledge work.

Unbiased Insights: Sharing insights and generating reports straight from the data means that decisions are made based on the data and not on human interpretation – or preconception. When you trust the data, you can make faster, better decisions.

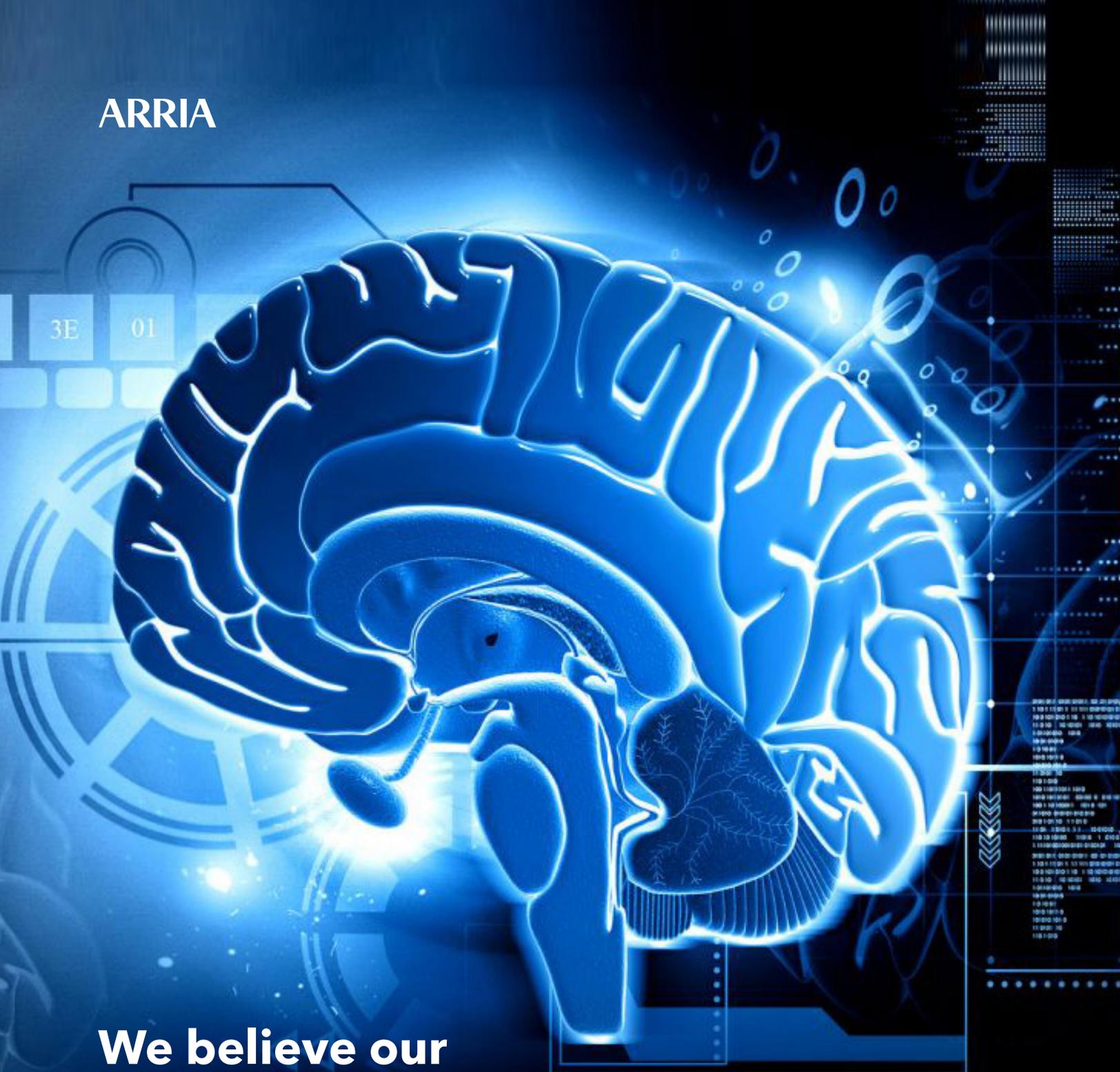
Unparalleled Accuracy: Deterministic natural language automation removes the risk associated with manual processes and human-generated narratives, which saves significant amounts of rework. Arria is 100% accurate.

Complete Control: The Arria Language Platform gives users full control and is not limited to the data used in training other language models by incorporating a sophisticated RAG pipeline process.

Trusted Capabilities: Arria's approach ensures trusted consistency, traceability, auditability and predictability. The Arria Language Platform is used and trusted by enterprise-level, mission-critical organizations on a global scale.

Return on Investment (ROI): A Forrester Total Economic Impact™ study showed the potential ROI enterprises realize by deploying NLG is 209% over the first 3 years.

ARRIA



We believe our humanity is defined by language

Our vision is to ensure, through our
Language Platform, that humanity remains
at the heart of artificial intelligence.

The Macro Context

The Evolution of Language

For the first time in human history, the Power of Language, the very thing that defines our humanity, has been captured in software and digitized – moving it outside of the human mind to the machine (to the digital mind).

1. This Changes Everything

Nothing will ever be the same again

2. Economic Impact

The impact will be measured in trillions, not billions*

3. A Revolution in Communication

The technology driving this revolution is known as
Generative AI

* Bloomberg and Fortune estimate that generative AI could expand to a market size of \$1.3 trillion by 2032, exhibiting a compound annual growth rate (CAGR) of 39.6% during the growth period.

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Learn More

To learn more about Arria's advanced Language Platform and the solutions available for your industry, please contact our specialists by emailing sales@arria.com.



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