

ARRIA

ARRIA + CHATGPT

Converging Technologies

Leveraging the value of two leading Generative AI capabilities



Understanding the Synergies and Differences between Arria + ChatGPT

Foreword

Arria proudly serves some of the greatest companies in the world with enterprise-level, mission-critical Natural Language Technology solutions. Our commitment is to deliver AI-NLG capabilities with 100% accuracy, 100% of the time.

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

Arria is inclusive and independent enabling the ability to integrate with 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 of 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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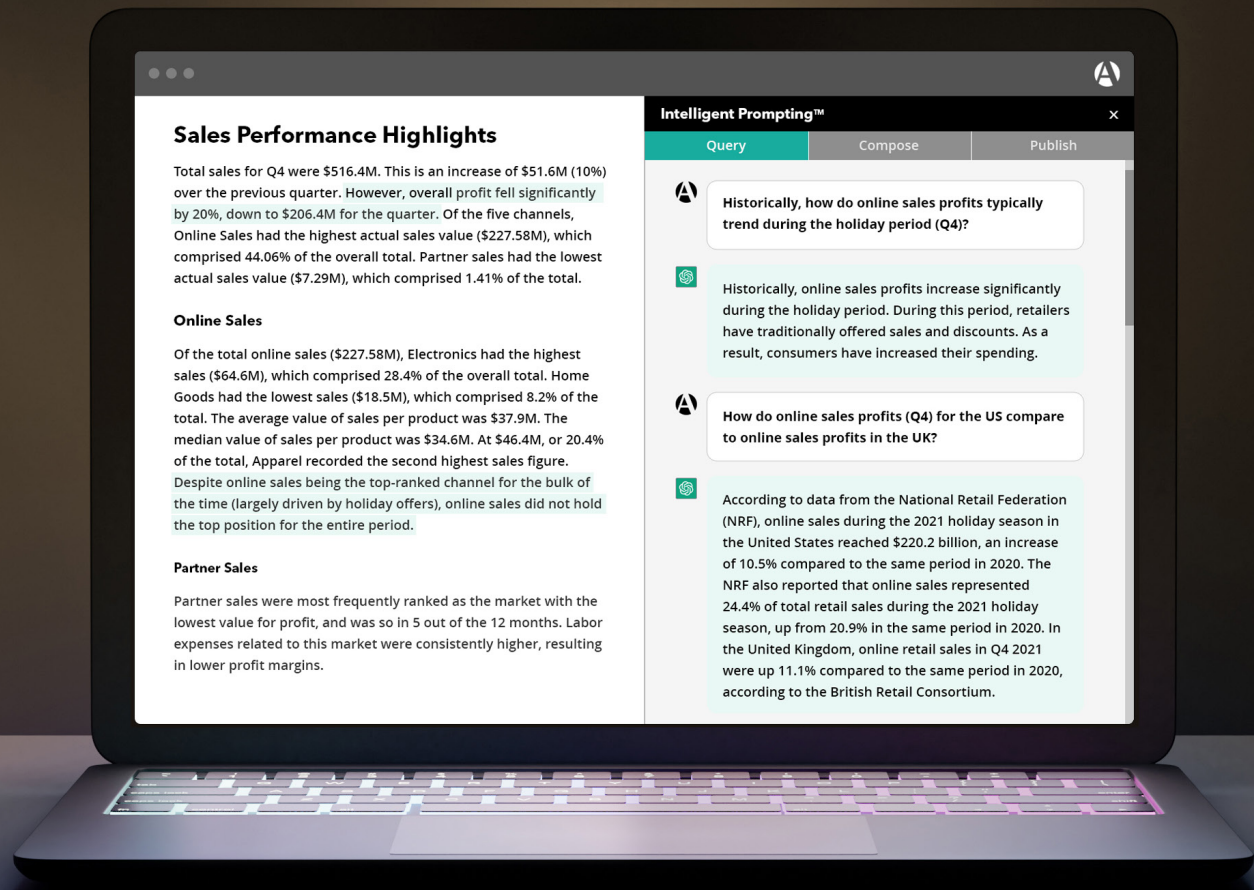
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See what can be achieved by bringing Arria's reliable, best-of-breed NLG together with the creativity and dynamic experience of emerging generative AI technologies, like ChatGPT.

Introduction

Arria is recognized as a pioneer and global leader in the field of Natural Language Generation (NLG) and 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 the Natural Language Technology capabilities into one advanced Language Platform.

This document will help articulate the unique differences as well as the synergies between Arria and ChatGPT. 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 Natural Language Technology (NLT) 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 each.
2. Why Arria is at the forefront of enterprise-level NLG and is considered the leader in data-to-text Natural Language Generation.
3. How Arria’s approach to combining language technologies will accelerate enterprise-wide operational efficiencies, productivity and cost-reductions.

ChatGPT and Arria are both Natural Language Generation systems, but they have differences in terms of their capabilities and focus. 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 data. 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. It is anticipated that generative AI will continue to be hyped 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 ChatGPT Text-to-Text versus Arria Data-to-Text

Arria recognizes ChatGPT as a significant technical achievement with valuable capabilities, though there are clear differences between the two technologies. While ChatGPT excels in providing text-to-text summaries, re-writing sentences, suggesting language, editing content, and translating language, it is not a solution for addressing the complex, mission-critical challenges that businesses are currently facing. Arria's data-to-text enterprise technology securely leverages a business's confidential internal data to generate narratives that meet specific compliant and regulated applications.

Arria's models are 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 ChatGPT's machine-learning language model with our own NLG technology and methodology. The goal is mainstream adoption of the ability to transfer knowledge in words by leveraging the best features of the technology available today. The power of combining Arria and ChatGPT allows enterprise companies to leverage the strengths of both generative AI technologies to query and understand the data they own in a controlled deterministic way, combined with publicly available data they can query leveraging GPT's Large Language Model (LLM). The two technologies can work together in the Arria Language Platform.

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

Overall, generative AI technology has the potential to transform many fields and industries, but it is important to approach this technology with a thoughtful and responsible mindset. By prioritizing ethics, collaboration, diversity, and inclusivity, we can ensure that generative AI is used to enhance human creativity and innovation in a responsible and impactful way.

85% Increase in productivity reported by users:

Generative AI has significant value and potential impact in a wide range of enterprise applications.

The Arria Difference

In a recent independent report issued by Gartner, Arria was named alongside OpenAI, Microsoft, Google, and others as vendors and products leading generative AI. It is important to note, Arria was the only data-to-text NLG provider referenced within the generative AI category, and is uniquely positioned to deliver the first end-to-end Language Platform of its kind.

Examples of vendors and products: Adobe Sensei, Arria, Google, genie.ai, IBM, Microsoft GitHub, NVIDIA Omniverse Avatar, OpenAI, Pencil Rephase.ai, Standigm, Synthesia, Synthesis AI, Tabnine, Valossa, Vizologi.

–Gartner: “Emerging Tech: Venture Capital Growth Insights for Generative AI”
Independent Research Report

“Arria NLG is a world leader in Natural Language Generation”

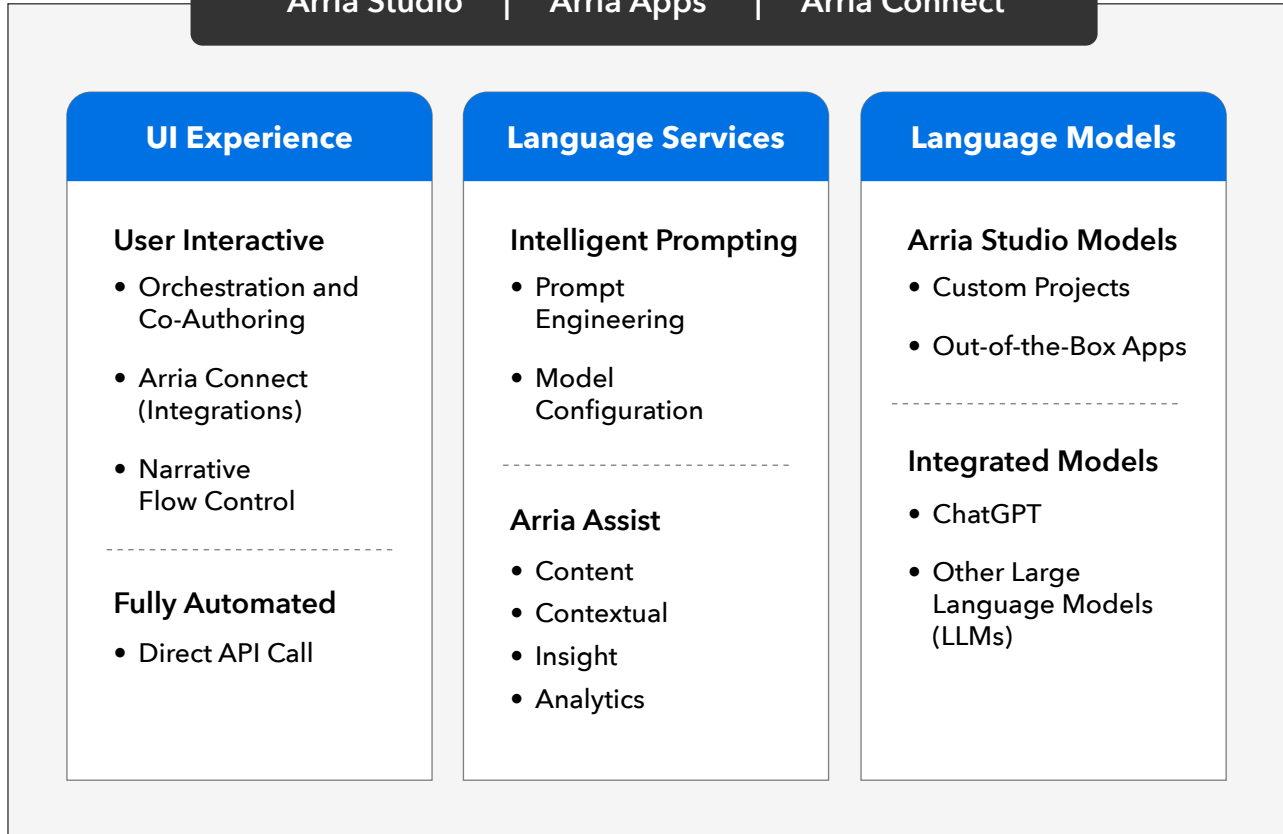
–Gartner: “Market Guide for NLG Platforms”
Independent Research Report

ARRIA

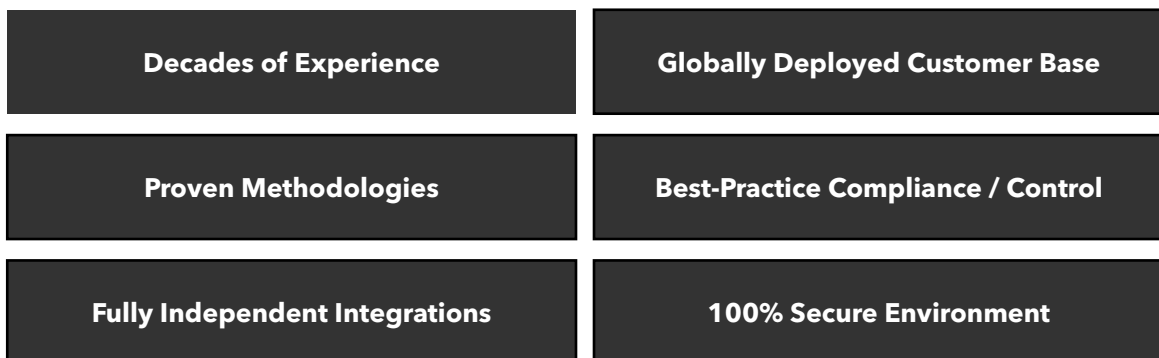


Arria Language Platform

Arria Studio | Arria Apps | Arria Connect



The foundation upon which the Arria Language Platform is built



Language is our Heritage.

Arria Language Platform

Leveraging Arria + ChatGPT in a single environment

The **Arria Language Platform** has been designed to meet the standards of enterprise-level quality, deployment, and production. The foundational building blocks are tried and tested. Because Arria's architecture is API-based, other technology capabilities that are also API-based can be easily integrated. ChatGPT is API-based and can be used in conjunction with Arria to enhance the user experience and output.

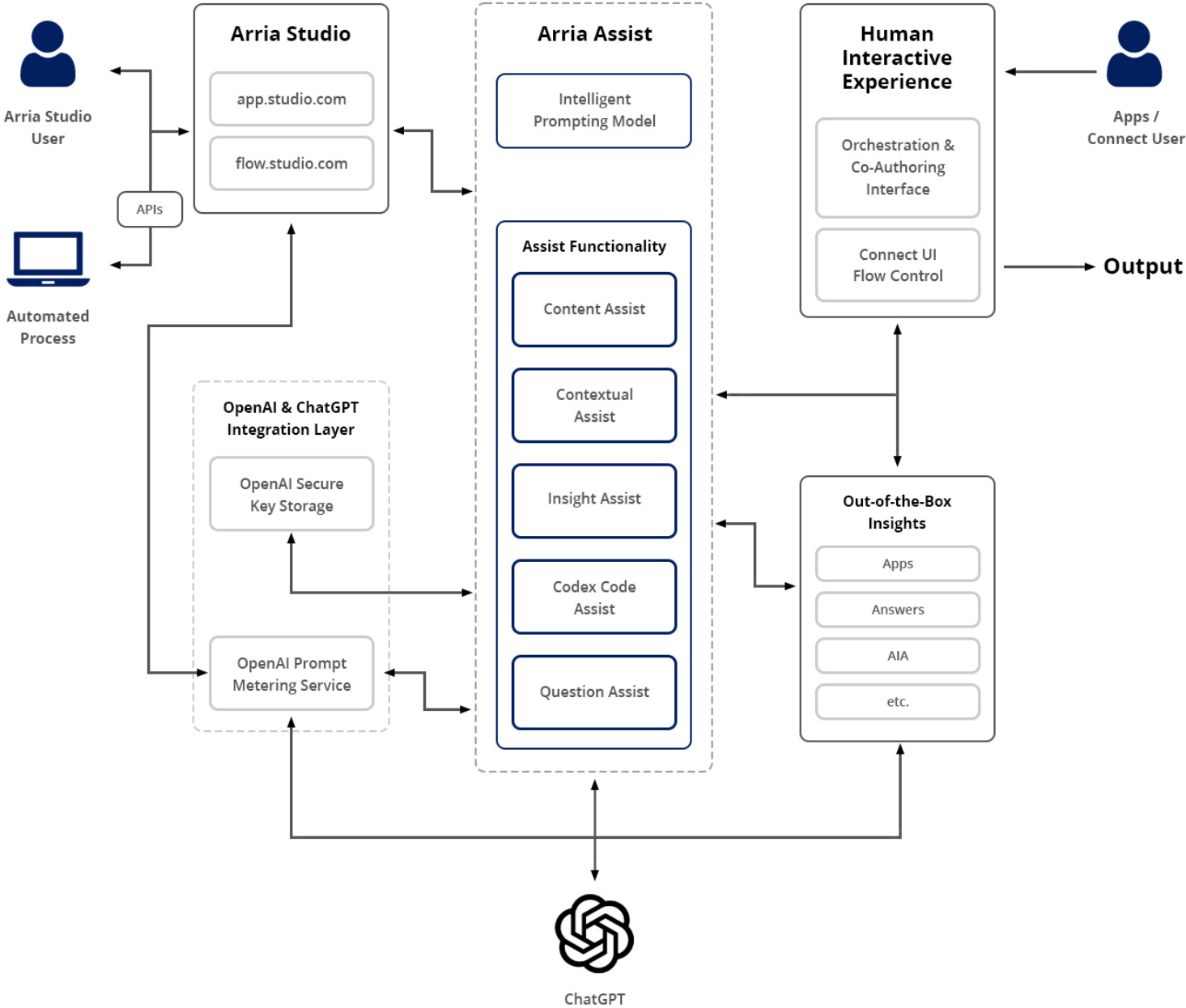
How do we take advantage of both in a seamless environment?

Bringing ChatGPT inside of the Arria Language Platform will add a layer of control and support, helping to provide contextual framing of the question to guide output accuracy. Both responses from Arria Studio and ChatGPT will be available in one user experience to bring the strengths of both together while also mitigating the current weaknesses of ChatGPT. Arria's language generation capabilities are coordinated through the Human Interactive Experience layer built on Arria Connect. This layer provides an interactive augmented interface to orchestrate narrative generation from both Studio and ChatGPT into a common view for co-authoring and final approvals. Arria narrative output is generated from data and therefore is always 100% accurate. Automation of reports, summaries, and content generated by Arria act as the trusted baseline. ChatGPT narratives, at this stage of development, require human intelligence to review and approve the content generated.

The challenge ChatGPT users face today is that prompting must be precise, and usually, the user needs guidance. ChatGPT answers are broad and require contextualization. The Arria Assist layer (see diagram on page 11) solves this problem. Arria's prompt engineering technique called **Intelligent Prompting** (see pages 12-13) provides the information needed to contextualize and control narratives. Enterprise clients will have the option to access the Arria Assist layer from within Arria Studio, Apps, or Connect, should they choose to apply the power of ChatGPT together with Arria to deliver NLG solutions to the enterprise.



Arria Language Platform



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

How it Works

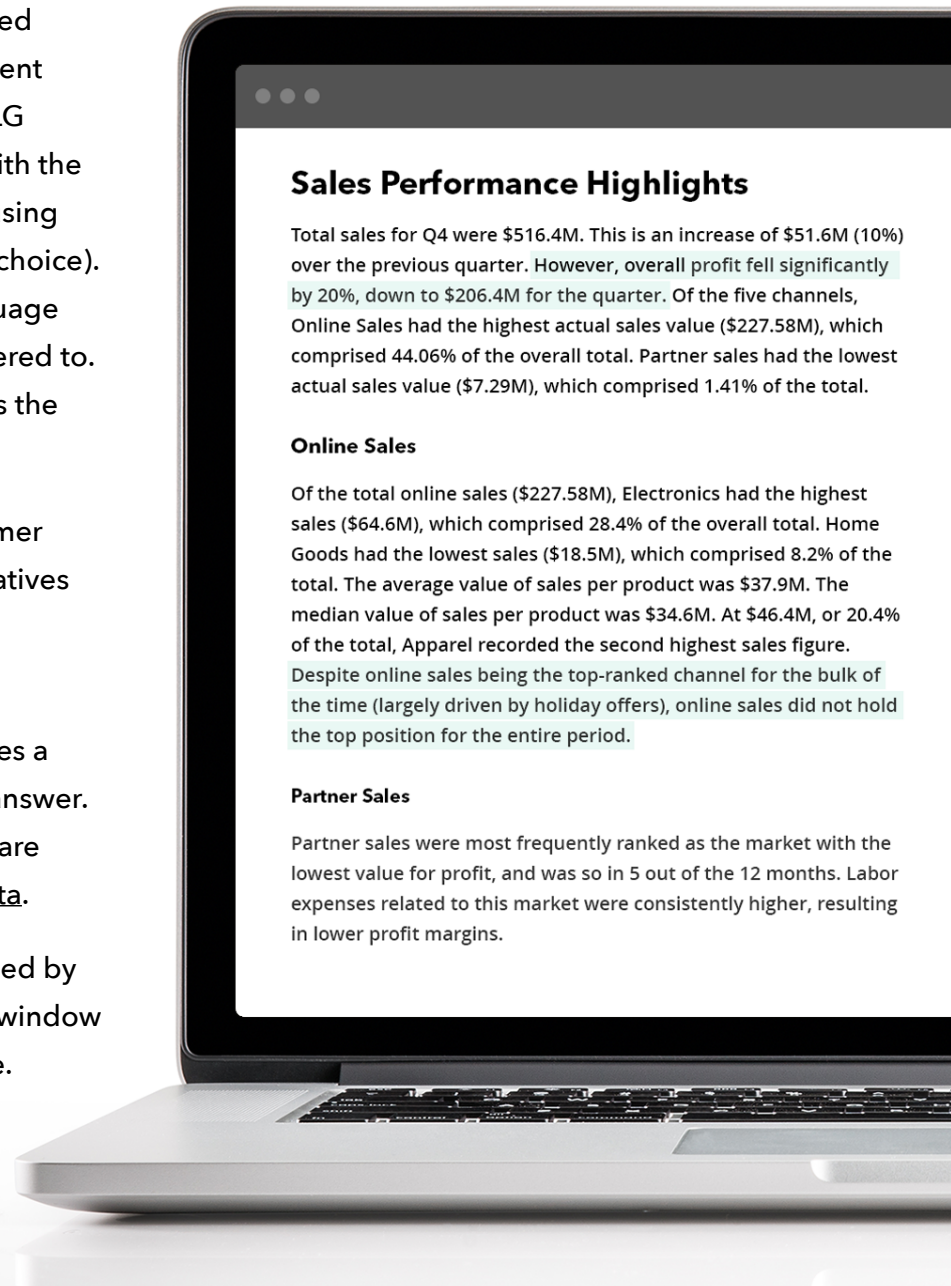
Arria Intelligent Prompting

Arria Intelligent Prompting is an advanced AI capability that auto generates intelligent questions relevant to the data-driven NLG narratives. This feature provides users with the ability to add supplemental narratives, using ChatGPT (or, other LLM models of their choice). Bringing ChatGPT inside the Arria Language Platform ensures best practices are adhered to. For compliance purposes, Arria provides the option to turn ChatGPT on or off.

1. **Arria NLG (Data-to-Text)** turns customer data into insightful, data-driven narratives that are fully automated with 100% accuracy, 100% of the time.
2. **Arria Intelligent Prompting** - produces a data inspired query for ChatGPT to answer. The intelligent questions generated are sent to ChatGPT, not your private data.
3. **ChatGPT (Text-to-Text)** - text generated by ChatGPT is brought into a compose window for review, approval, and acceptance. Text can be humanly co-authored to combine and/or edit narratives.

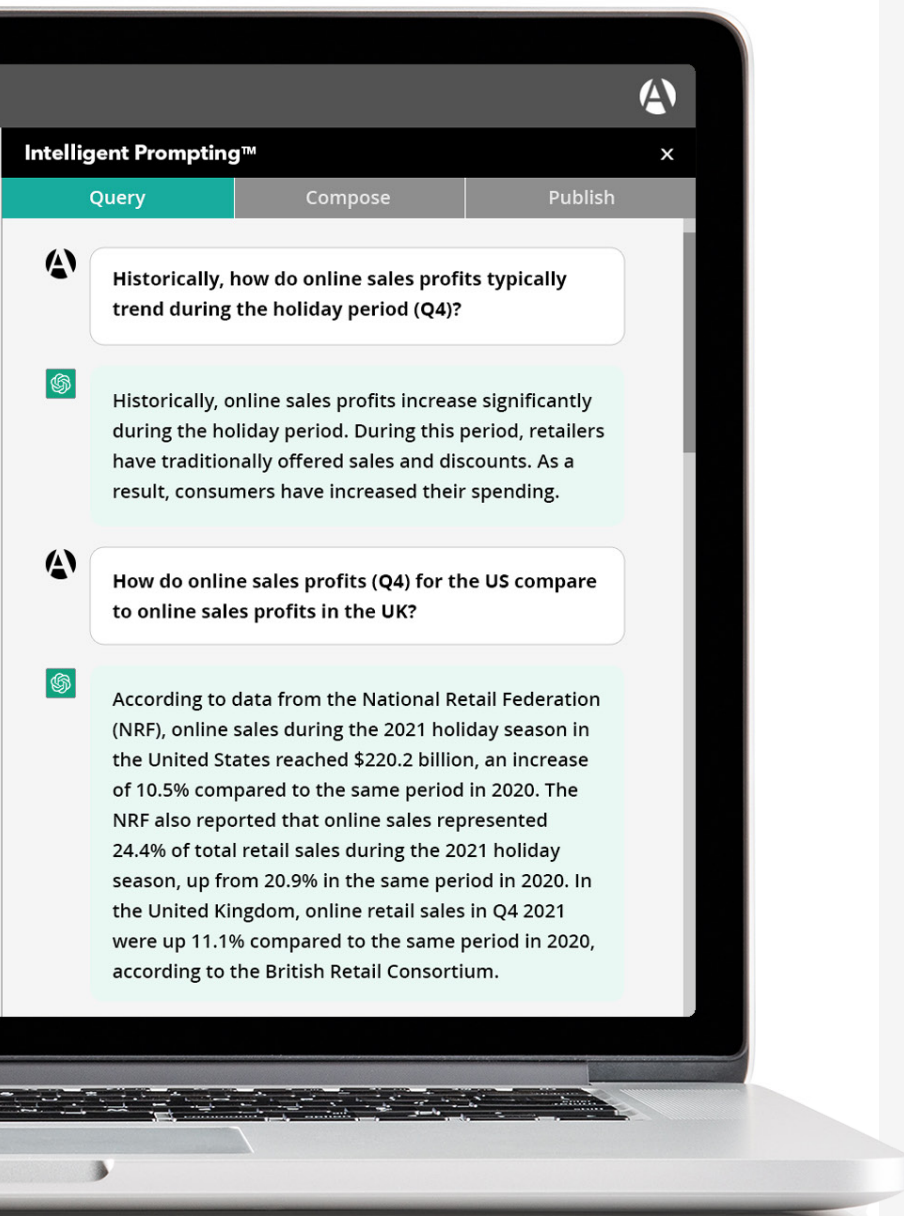
Start with:

Enterprise approved Arria NLG
Data-driven Narratives



Arria + ChatGPT | Game-changer, on top of game-changer

Expand with:
Arria Intelligent Prompting
Data-inspired Query



Arria NLG Data-driven Narratives

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 Intelligent Prompting Data-inspired Query

AI-generated questions, aligned with NLG narrative insights, are created for users to select and send to ChatGPT.

- Expertly composed questions
- Definable controls and guardrails
- Contextual and relevant responses
- Information not available in data can be supplemented by ChatGPT

Supplement narrative with:

- Historic Patterns and Events
- Demographic Information
- Competitor Comparisons
- Market Comparisons
- Industry Trends
- Sector Trends
- Language Translation
- Summarization

Uniquely Different

How Arria and ChatGPT differ in their approach

Arria Natural Language Generation (NLG) 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 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. For example, 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 around consistency, quality – and 100% control in compliant regulated environments.

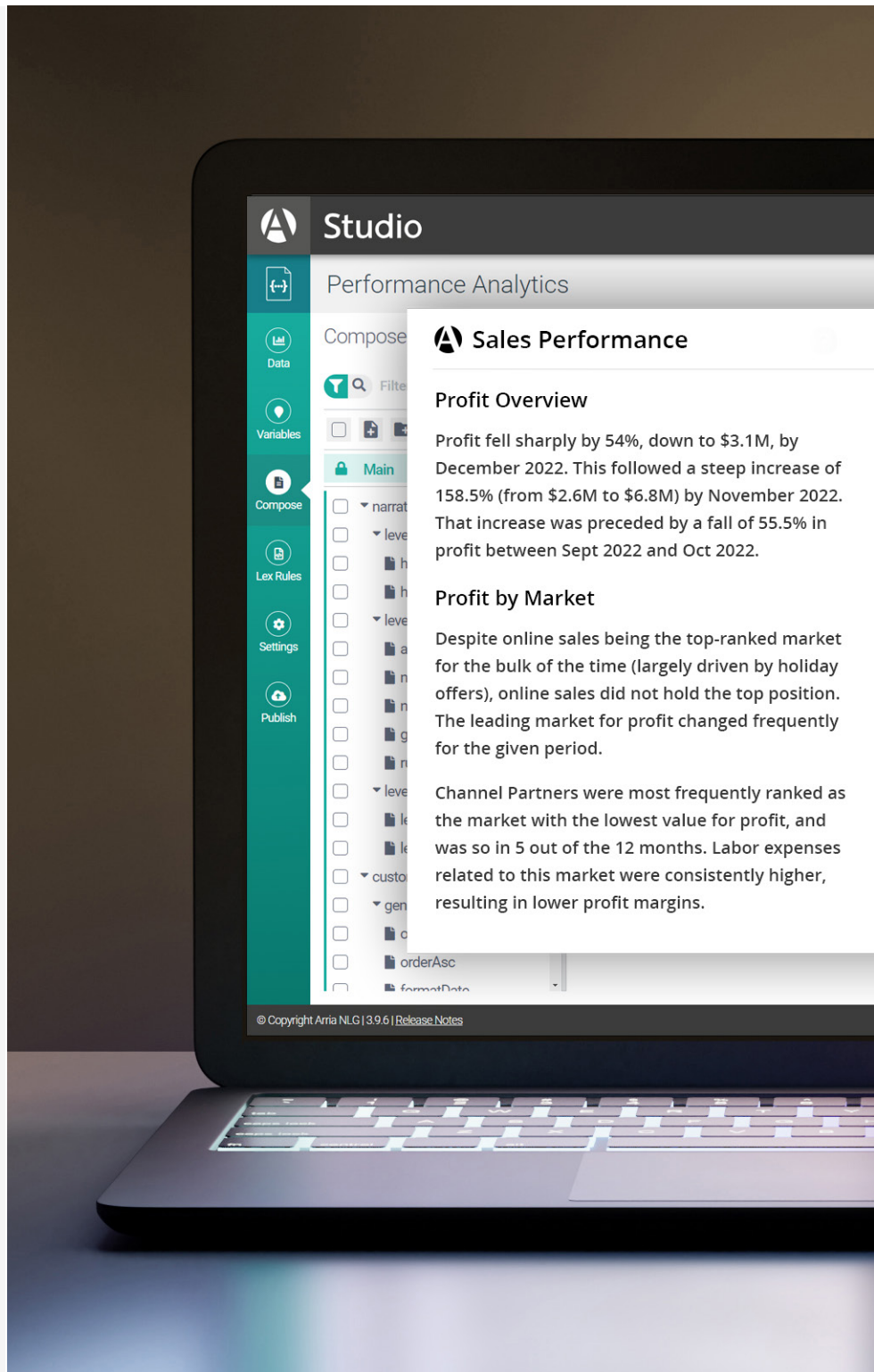
ChatGPT text-to-text generation on the other hand, involves generating new text from existing text without relying on any external structured data sources. The goal is to create coherent, grammatically correct, and semantically meaningful text that closely resembles natural human language. Text-to-text generation can be used for a variety of tasks, including language translation, text summarization, content creation, and dialogue generation. ChatGPT’s text-to-text solution is currently used to assist human authors in writing marketing content, debugging code strings, explaining complex topics in a simple tone, and writing essays. While there are major time and cost savings, ChatGPT currently has some limitations due to its unpredictability and occasional inaccuracies.

Unique Strengths and Key Differences

Comparison	Arria	OpenAI ChatGPT
Generative AI	Data to Text	Text to Text
Model	Natural Language Model Programmed by Expert Human Deterministic	Large Language Model (LLM) Machine Learned Neural Network
Process	End-to-End Process Automation Optional Human-in-the-Loop	Human Productivity Acceleration Mandatory Human-in-the-Loop
Control	100% – Full Control	Limited Control
Accuracy	100% – Predictable	Limited – Unpredictable
Capabilities	Precise Language Explanations from Customer Data (Current)	Text Summaries from Public Data (thru Dec 2021)
Analytics	Advanced Analytics	Limited Math
Linguistics	High-Level Control	Black Box
Text Output	Final Form Text	Draft Text
Industry Focus	Compliance / Regulatory	Consumer / Media
Primary Applications	Automation of Written Explanations and Reporting from Enterprise Approved Data	Writing Assistant, Summarization Tool, Image Creation, Codex

Arria NLG Studio Key Features

- **Fully configure, control,** and customize, with Arria's self-use NLG authoring tool
- **Combines advanced analytics** and advanced linguistics together in one platform
- **100% Accuracy** once set, narratives will run in perpetuity with 100% accuracy – no human required
- **Capture and replicate** 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, in full production worldwide



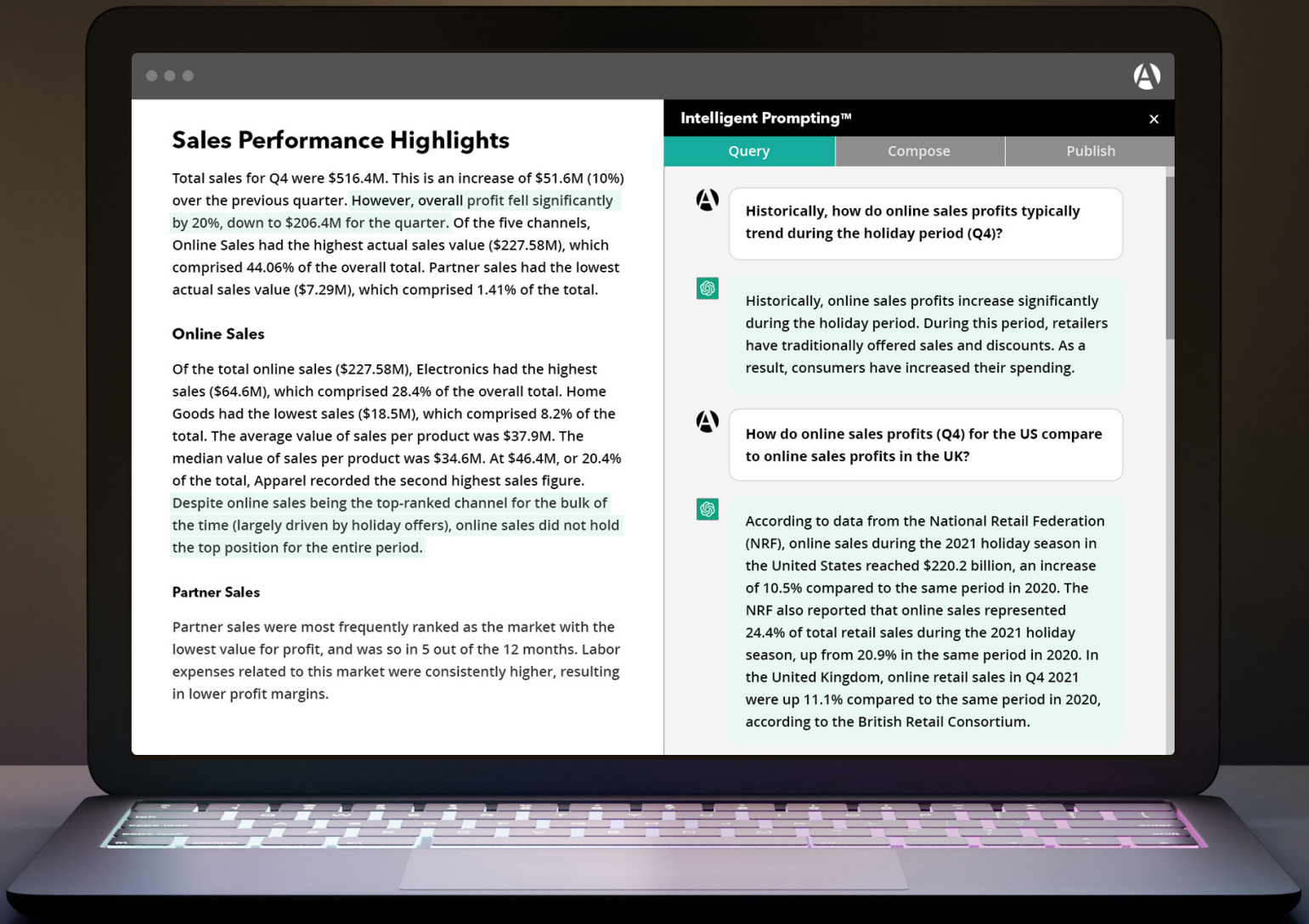


OpenAI ChatGPT Key Features

- **Writing assist tool at your fingertips** - greatly accelerate human 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
- **ChatGPT has access to a large knowledge base** that includes a wide range of topics and domains

Creating a Symphony

Although the two technologies are different, they can be used in concert. Arria and ChatGPT offer unique differences depending on business applications and outcomes required.



Sales Performance Highlights

Total sales for Q4 were \$516.4M. This is an increase of \$51.6M (10%) over the previous quarter. However, overall profit fell significantly by 20%, down to \$206.4M for the quarter. Of the five channels, Online Sales had the highest actual sales value (\$227.58M), which comprised 44.06% of the overall total. Partner sales had the lowest actual sales value (\$7.29M), which comprised 1.41% of the total.

Online Sales

Of the total online sales (\$227.58M), Electronics had the highest sales (\$64.6M), which comprised 28.4% of the overall total. Home Goods had the lowest sales (\$18.5M), which comprised 8.2% of the total. The average value of sales per product was \$37.9M. The median value of sales per product was \$34.6M. At \$46.4M, or 20.4% of the total, Apparel recorded the second highest sales figure.

Despite online sales being the top-ranked channel for the bulk of the time (largely driven by holiday offers), online sales did not hold the top position for the entire period.

Partner Sales

Partner sales were most frequently ranked as the market with the lowest value for profit, and was so in 5 out of the 12 months. Labor expenses related to this market were consistently higher, resulting in lower profit margins.

Intelligent Prompting™

Query

Compose

Publish



Historically, how do online sales profits typically trend during the holiday period (Q4)?



Historically, online sales profits increase significantly during the holiday period. During this period, retailers have traditionally offered sales and discounts. As a result, consumers have increased their spending.



How do online sales profits (Q4) for the US compare to online sales profits in the UK?



According to data from the National Retail Federation (NRF), online sales during the 2021 holiday season in the United States reached \$220.2 billion, an increase of 10.5% compared to the same period in 2020. The NRF also reported that online sales represented 24.4% of total retail sales during the 2021 holiday season, up from 20.9% in the same period in 2020. In the United Kingdom, online retail sales in Q4 2021 were up 11.1% compared to the same period in 2020, according to the British Retail Consortium.

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 + ChatGPT

- **Full Control:** The power of bringing ChatGPT into the Arria Language Platform, which features Intelligent Prompting and co-authoring, provides users with full control of narratives.
- **A Single Environment:** The Arria Language Platform brings together data-to-text and text-to-text NLG in a single, co-authoring 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.



Unprecedented Opportunities

Turning data into strategic intelligence

The ability to automate language generation holds unprecedented opportunities. Newer products 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 insights from complex, secure business information.

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 timeliest of 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.

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.

Value delivered across commercial applications

The commercial application of NLG is vast and varied, as translating data into understandable language is necessary for all facets of a business. Its greatest effectiveness comes from automating time-intensive data analysis and reporting activities. Below are some examples of high-value use cases for NLG:

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

Content automation: Automatically generate news articles, product descriptions, and other types of written content.

Investment commentary: Instantly analyzes portfolio data, speeding time to accurate insights and data understanding while eliminating human error and the need for rework. Its automated commentary is accurate and can be customized to reflect the voice of the firm.

Customer service: Quickly generate responses to customer inquiries, reducing the need for human customer service representatives.

Email and chatbot personalization: Create personalized emails and chatbot responses, making communication with customers more efficient.

Quick service restaurant (QSR) solution: Empower agents to handle the most critical aspects of the order process while AI does the rest, providing an enhanced customer experience.

Clinical study reporting: Improve the process of reporting with NLG speed and accuracy as pharmaceutical companies compete to bring drugs to market. The submission of medical reports is accelerated while significant time and money savings are achieved.

Process Automation

The advantages of Arria's unique methodology

Arria's Natural Language technologies facilitate communication between humans and machines and offer the following advantages:

Increased business growth: Arria NLG enables a higher volume of business productivity by improving the speed of decision-making and intelligent action, thereby facilitating faster customer acquisition and stronger retention.

Bolster unified planning: Not only does Arria's NLG technology turn complex, structured data into natural language at a rate and volume not humanly possible, it accelerates the process of writing and disseminating insights across organizations, removing silos and democratizing data understanding. When you have access to the latest data and insights, your business intelligence becomes more than just a review of what happened, it becomes a driver for strategic planning.

Compliance and regulation: Arria NLG helps companies stay in compliance by automatically generating reports and other documents that meet regulatory requirements. Additionally, NLG can be used to create compliance-related communications and documentation, such as employee training materials and internal policies, to ensure that all employees are aware of and understand the regulations that apply to their work.

Data Security: Unlike some newer publicly available products that record the data sent to them, Arria does not at any point store users' data. In highly regulated industries like healthcare and financial services, the only AI-enabled option is a neutral language technology provider who can ensure security.

Additional Opportunity

“Because data comprehension is vital to business success, the first thing every company should do is set aside money and integrate Arria into what you are doing. It isn’t an additional cost; it is an additional opportunity.”

– Chris Wagner, Principal Data Insights & Analytics Solution, KratosBI

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: Natural language automation removes the risk associated with manual processes and human-generated narratives, which saves significant amounts of rework. Also, unlike an open-source generative AI tool, Arria is 100% accurate.

Complete Control: NLG technology gives users full control and is not limited to the data used in training other language models.

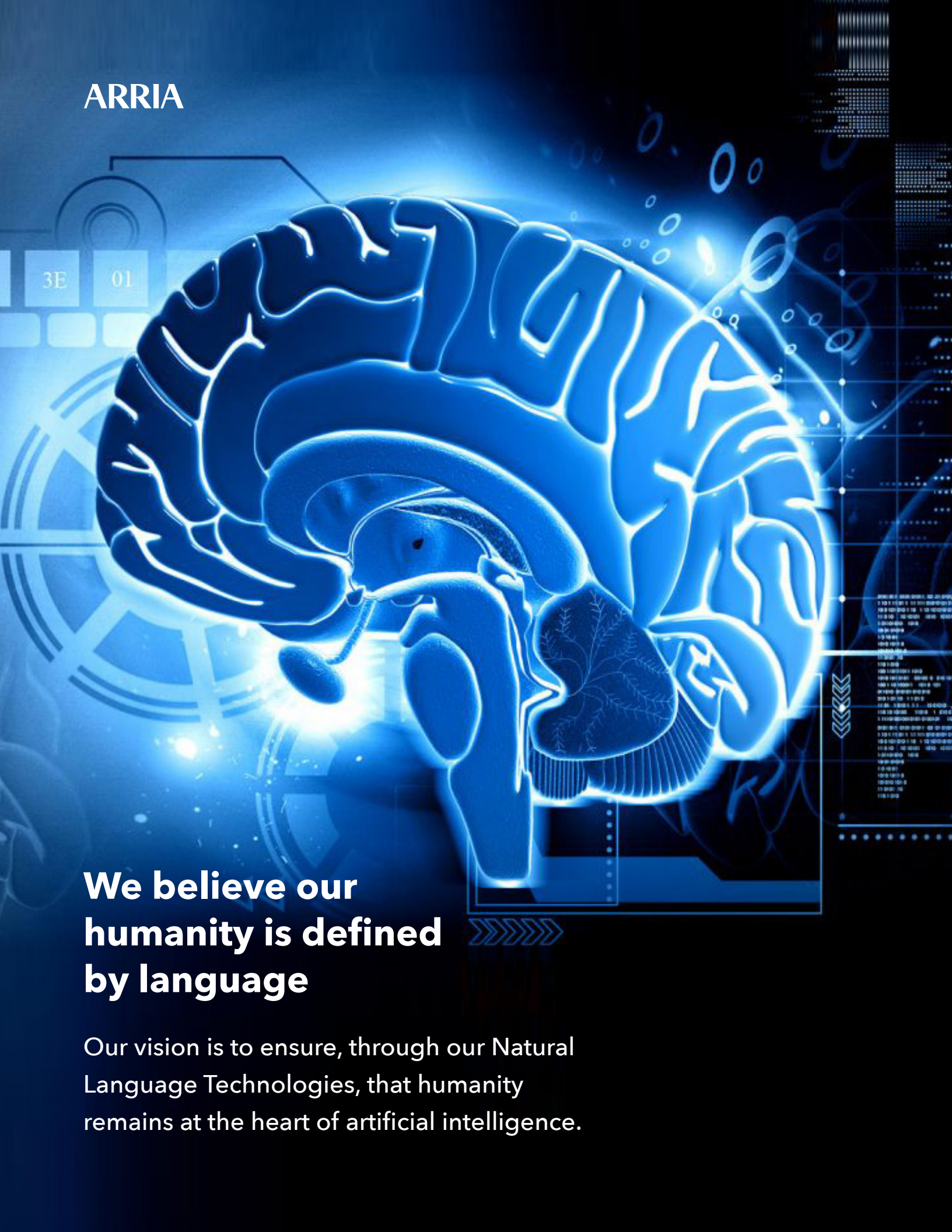
Trusted Capabilities: Arria’s technology is based on more than 30 years of research and development by our chief scientists at the University of Aberdeen in Scotland and is used and trusted by enterprise-level, mission-critical organizations on a global scale.

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 Natural Language Technologies, 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 Natural Language Generation (NLG)

*McKinsey & Co. states that NLG is 1 of 5 core technologies enabling an economic impact estimated to be US \$5–\$6.7 trillion annually by 2025

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 that provides full integration of Arria Studio with ChatGPT into a single environment. The Human Interactive Experience (pg 11) is an orchestration and co-authoring interface designed to allow users to optimize both Studio and ChatGPT narratives into a single output. Key features such as Intelligent Prompting and Arria Assist optimize narratives for contextual relevance.



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—at machine speed and on a massive scale. The ability to access key information in near real-time, communicated as if written by your company’s top analysts—at an NLG writing speed.



Arria Answers: An advanced Conversational AI application that brings together Arria’s foundational NLG and insight analytics with other natural language technologies (NLP, NLU, and NLQ). Query your data for instant insights and deeper detail using natural language.



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 to add NLG into any API-based platform. Speed up your NLG development work using Arria’s pre-built libraries. This software development kit greatly accelerates the embedding of Arria NLG add-ins in BI tools or dashboards.

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! Departments, such as Finance & Accounting, Marketing, Product Management, and HR Management rely on the capabilities of Excel spreadsheets for day-to-day operations, business analytics, data compilation, and reporting.



Arria for RPA: Natural Language Generation (NLG) and Robotic Process Automation (RPA) are now 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.

ARRIA

Learn More

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



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