



ARRIA + TIBCO WHITE PAPER

COMBINING NLG+BI TO GAIN 20/20 VISION IN 2020

ARRIA

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Introduction

ACCESS TO INSIGHT PROVIDES businesses with a clear competitive advantage, but many enterprises struggle to make sense of the seemingly endless reams of data at their disposal. To overcome hurdles with data literacy, smart businesses have embraced various business intelligence (BI) solutions to collect, aggregate, translate and present business information.

An invaluable asset for enterprises worldwide, BI dashboards are data visualization tools that display the status of business analytics metrics, key performance indicators (KPIs) and other important data points on a single screen.

To underscore the widespread adoption of BI, note that the global business intelligence market is projected to reach USD \$147.19 billion by 2025.

However, unlike financial planning and analysis (FP&A) personnel, for whom interpreting visual depictions and diagrammatic representations of business data is easy, many executives lack the analytics background to understand the story their data is telling from visualizations alone.

For those of us that fall under the latter category, easy to understand written—or spoken—narratives that augment data visuals are paramount. And here's the proverbial rub: for even the most tenured and savvy specialist, manually mining underlying data to create these analytical narratives is both time and labor-intensive.



Contents

Introduction	2
NLG intelligent automation and BI.....	3
Improve speed & accuracy while reducing cost	5
NLG enhances intra-company communication.....	6
NLG—highlights actionable insights in everyday language	6
The bottom line: NLG gives users the 20/20 vision they need	7

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It has never been easier to measure and monitor business operations – the amount of data available to organizations is staggering.

The ability to drill down into data and accurately identify trends, patterns and projections enables business leaders to make informed decisions.

Organizations across the globe have recognized the need for readily available insights and as such, leverage NLG technology to extend the reach of real-time data analytics and increase the ROI in BI dashboards. Narratives help provide a clear line of sight into your data's full story—and conclusions.

NLG intelligent automation and BI

NLG is not new. Financial institutions, global media, pharmaceutical companies and enterprises in other vertical markets have harnessed this technology for years. By creating intelligent automation solutions that combine NLG, robotic process automation (RPA) and BI dashboards, businesses can automate data collection, aggregation, entry, extraction, cleaning, and manipulation to convert findings into data visualizations as well as intelligent narratives using conversational language—in near real-time.

TIBCO Spotfire + ARRIA NLG Systems-to-People workflow for real-time actionable insights

TIBCO Spotfire BI Dashboards

Provide illustrative two-dimensional visuals of the structured data.

Arria Natural Language Generation (NLG) Narratives

Instantly produce expert narrative that explains insights found both within the displayed TIBCO dashboard visuals and also within all of the underlying data.



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“The Global Business Intelligence Market was valued at USD 17.15 billion in 2016 and is projected to reach USD 147.19 billion by 2025, growing at a CAGR of 26.98% from 2017 to 2025.”

– **MarketWatch**, *Global Business Intelligence Market Analysis Covering Size, Share, Growth, Trends and Upcoming Opportunities*, 18 Oct. 2019



NLG intelligent automation transforms TIBCO dashboard visuals (and their underlying data) into insightful natural-language stories and reports. For the first time, the value contained within mountains of data can be communicated in written language everyone can understand.

Using this two-tiered strategy extends data intelligence across an enterprise, providing visibility to previously clouded insights.

Arria NLG uses Language Analytics together with advanced computational linguistics to interpret data and generate a written analysis that adds context for the intended audience—just as a human data analyst would—and support data visuals presented in BI dashboards.

This gives unlimited drill-down capabilities with an unlimited number of dimensions from any number of external data feeds. Such summaries tell deeper, insightful stories about the data and expose hidden insights that may not be obvious from looking at visual representations alone.

Data-driven stories improve data literacy and by extension, enhance the ROI of business intelligence.

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BI tools are very good at aggregating and presenting data to expose virtually all areas of business performance.

Improve speed & accuracy while reducing cost

Intelligent automation solutions that combine BI analytical and linguistic capabilities dramatically improve the speed and efficiency of corporate reporting.

Traditionally, organizations have dedicated significant resources to identify the most salient analytics and manually produce written narratives on a case-by-case basis. BI tools are very good at aggregating and presenting data to expose virtually all areas of business performance.

But intelligence devoid of narratives comes at a cost; manually contextualizing and providing drill-down capabilities into usable insights (setting filters, pivoting views, and more) consume significant time and manpower.

Contrarily, intelligent enterprises integrate NLG with BI dashboards to automatically generate insightful narratives and reports that are indistinguishable from those written by an internal subject-matter expert. The resulting gains in productivity and efficiency affect dramatic change on many levels namely; speed to information, consistency and improved accuracy, as well as the ability to analyze information at scale.

Empowered with the ability to present analytical narratives increases the already significant value of BI dashboards; reporting on data that typically isn't included in visualizations ensures that critical facts and insights that otherwise may be missed are now shown.

Intelligent automation not only reduces the cost and time of executing processes manually, but also the risk of human errors which can lead to inaccurate financial reporting.

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The essence of BI and analytics is to help people make data-driven decisions, faster.

Natural language generation enhances intra-company communication

Contextual linguistics augment BI by automatically generating intelligent, thorough analyses at greater speed and scale. This frees up FP&A and analysts to tackle more complex problems and focus on strategic, high-value activities. By virtue of its ability to generate reports for various departments and users on demand, intelligent automation is immensely useful.

Diagnostic analyses presented in language allows managers to communicate KPIs and other metrics to those above and below them in their corporate hierarchy.

For example, when making a presentation on variance analysis to business leaders, the last thing a manager needs is to spend precious time breaking down a complex diagram. The same holds true for conducting performance reviews and other scenarios that require communicating critical data to the workforce.

Natural language generation—highlights actionable insights in everyday language

The essence of BI and analytics is to help people make data-driven decisions, faster. While visual analytics are great for communicating historical information, they're less effective at communicating prescriptive information—the actionable intelligence that influences human behavior.

BI tools deliver KPIs and metrics that are user specific. FP&A professionals, for example, want data that pertains to corporate financial reporting. NLG can enhance this functionality by serving up customized narratives that are relevant. Most BI users intuitively know how to interact with dashboards, set filters and drill down to the metrics they are looking for.

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Natural language narratives not only explain what is happening, but why it is happening and the impact on the enterprise.

Even with that knowledge, analysis of data takes time and written and spoken explanations help a wider contingency of personnel digest insights faster.

Natural language narratives not only explain what is happening, but why it is happening and the impact on the enterprise.

The bottom line: NLG gives users the 20/20 vision they need

Language is the most common medium of communication between humans and technology's ability to empower BI dashboards to communicate in the same way is incredibly valuable.

Intelligent automation touches personnel at all levels of an organization. What makes it particularly valuable is its ability to create unique narratives with human-like accuracy at scale in a matter of minutes—saving time through automation, increasing the understanding with narrative, and empowering organizations to make informed decisions faster.

To have 20/20 vision of your data, harness the actionable intelligence it provides, and automate those insights to your advantage, organizations must collect, analyze and present consumable data for a wider, more diverse audience.

NLG can provide 20/20 vision into analytics, leading to informed, strategic decision making—the very essence of business intelligence. ■

Natural language narratives not only explain what is happening, but why it is happening and the impact on the enterprise ... they can provide 20/20 vision into analytics, leading to informed, strategic decision making—the very essence of business intelligence.

For more information, including a demo tailored to your specific use case, please email: sales@arria.com
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ABOUT THE AUTHOR



Sharon Daniels, CEO, Arria

Sharon Daniels has over 30-years' experience building and expanding technology companies. As an Arria co-founder who served as a founding executive director of Arria and as a member of the leadership team that planned and managed Arria's listing on the London Stock Exchange AIM in 2013, Sharon brings a wealth of experience to the board. In 2001, together with other Arria cofounders, Ms. Daniels co-founded Diligent Corporation. It listed on the NZX in 2007 and was acquired by Insight Venture Partners in 2016 for US \$624 million.