SISENSE

Search-Driven Analytics vs
Analytics with AI:

BOOSTING BI IN A MODERN DATA WORLD

INTRODUCTION: BI IN A MODERN WORLD

To stay competitive and respond to market pressures and opportunities, today's businesses need to access insights fast. They can't put up with delays or backlogs. They simply can't afford to wait to get the insights they need to run their business.

Cue the rise of self-service BI.

A genuinely self-service platform empowers its users to delve into any dataset they want, model and manipulate it any way they choose, and ultimately dig out the insights that matter without any technical support at all.

A system powerful enough to provide this has to be driven by best-in-class technology, though. To keep up with these constantly changing demands, BI vendors need to create platforms capable of evolving with their users, learning what they need and how they communicate. They need to create better, more accurate ways to find what their users are looking for, without expecting them to get to grips with insider jargon and technical language.

Increasingly, AI plays an enormous role in this journey. In this white paper, we'll explain how and why that is. We'll also compare two prominent ways of achieving this, search-driven analytics and analytics with AI, to help you figure out which approach is the best fit for your business.

CONTENTS

1. BIG DATA AND WHAT IT MEANS FOR THE FUTURE OF BI

Modern datasets have become so big and complex that standard database management tools now struggle to process them. This is what we mean when we talk about Big Data: huge, fast-growing datasets that already involve multiple tables and tens of millions of rows.

This isn't only daunting for your team, it's also enough to overwhelm your system, and the developers and data engineers that are supporting your BI efforts. Whatever BI platform you choose, it needs to come with the right Big Data analytics tools to handle it, from mashing up the data, to delivering dashboards with usable insights.

2. HOW DOES SEARCH-DRIVEN ANALYTICS WORK?

Search-driven Analytics is an approach that makes heavy use of natural language processing (NLP) as the primary interface for accessing data.

The NLP structure means you can pose questions by typing or speaking, using relatively everyday language terms. For example, if you ask, "what was my sales total in Q3?" to a search-driven analytics tool, it will reply with a figure or a visualization of the answer. You can then opt to ask follow-up questions or interact with the visualization, depending on the particular tool you're using.

Rather than a full BI platform in its own right, this is something that's often tagged onto an existing BI solution. When offered in isolation, it's aimed at people who have never used BI, or don't need the full capabilities of BI.

3. THE PROS AND CONS OF ANALYTICS BY SEARCH (SEARCH-DRIVEN ANALYTICS)

The primary benefits of using search-driven analytics are:

- It's run through a simple, browser-based interface, meaning that anyone on your team can use it without training or a techie background.
- It's designed to process complex NLP, meaning you can ask the system questions using natural, everyday language - even if what you're asking for is relatively complex from an analytical point of view.
- You can scale up to search through terabytes of data.

The major drawbacks are:

- The fact that the technology relies so heavily on NLP can also be its downfall at times. Although you can frame your question using natural language structures, for it to figure out what you want, you still need to get your wording pretty precise. It's easy for the system to misinterpret what you're looking for.
- Your data needs to be organized in the same schema. You can't use in-database processing or high-performing analytic databases. This is a pain if you are working with multiple data sources.
- When it comes down to it, search-driven analytics is a one-trick pony. If you need to use it for serious, heavy-duty BI tasks, that means extensive integration work. This is a huge, IT-intensive job.
- Embedded analytics is minimal and inflexible.
- It's very difficult to manipulate data into groups or bins.
- There are only very basic dashboards with no rich mapping, and limited chart types available.
- All of this means that the total cost of ownership (TCO) of the system is potentially very high. It's fine if you only want the simple stuff, but anything more takes money and resources to achieve.

4. HOW DOES ANALYTICS WITH AI WORK?

The combination of AI and analytics adds up to business intelligence that delivers genuine bottom-line benefits.

AI, or augmented, analytics incorporates some elements of search-driven analytics - particularly the use of NLP. However, this is only one strand of what it can do. Analytics with AI goes much further.

The process of analytics with AI starts long before the user starts asking questions. During the data preparation stage, algorithms are already detecting schemas in order to profile, catalog and recommend ways to enrich this data. The AI engine suggests improvements to data lineage and metadata, for example, which will make it much easier to use this data later on.

When it gets to the point where people start querying the data, the system allows for NLP questions, but more importantly, it keeps learning all the time from what people choose to do with that data - not just from the way they use language. The system's algorithms identify relevant patterns in the data and auto-generate models, meaning that results get more accurate, complete and useful, and can be delivered faster, all the time.

These insights can then be relayed to the user with natural language and visualizations, focusing on what's most important or actionable. It's also easy to embed these insights into external apps or conversational UI. In fact, AI analytics tools can often be integrated with other interfaces like Amazon Alexa and chatbots, drawing on these technologies' impressive develops in NLP, too.

To give you an idea of just how broadly this technology can be applied, here are just a few of the tools that come under the general umbrella of analytics with AI here at Sisense:

- ### Sisense Hunch

A data cognition engine that condenses massive amounts of data into lightweight neural networks that can be analyzed quickly. This creates a huge set of possible queries, covering many angles of the Big Data store. From there, the information can be used to train a machine-learning algorithm called a deep neural network (DNN) - a type of machine-learning algorithm, ultimately taking up a fraction of the original data size, but answering queries directly with sub-millisecond response time and 99% accuracy.

- ### Sisense Narratives

A way of explaining data in text, using everyday language. Users can get new questions answered at lightning speed.

- ### Sisense-Enabled Echo

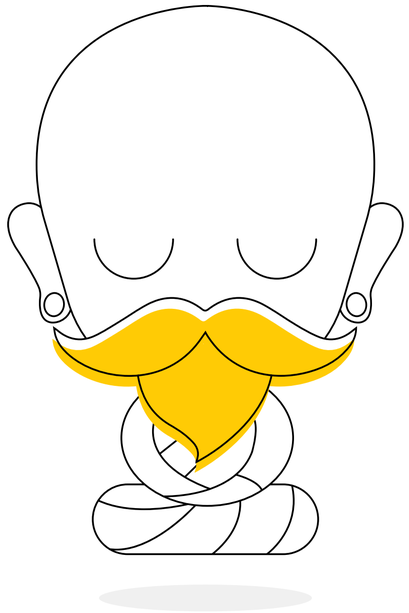
This lets users interact with their data through voice commands, retrieving and listening to their numeric KPIs.

- Insight Miner

This uses machine learning technology to help businesses dig out new insights from data that they hadn't considered, known about or been able to see before. The system suggests ideas, responds to NLP-presented questions and visualizes the insights for you.

- Sisense Boto

This builds on insight miner by letting you uncover hidden insights and share them through chat messaging platforms. You can communicate these insights in seconds with colleagues or allow customers to tap into the information they need directly.



5. THE PROS AND CONS OF ANALYTICS WITH AI

The major benefits of opting for analytics with AI are:

- This is the technology that's specifically designed to work with heavy-duty BI tasks.
- You can mashup any data source you want and search it from one place.
- You have enormous scope to manipulate, interrogate and model your data any way you like.
- It's built on open, Single-Stack architecture with no additional tools required to work.
- The best options on the market come with ETL functions built-in to save you time.
- It creates myriad opportunities for data exploration and insight discovery.
- It's a great choice for flexible, powerful embedded analytics.
- The overall TCO is low because the system can do so much with little or no extra time, money or other IT resources.
- Perhaps most importantly, it creates a genuinely self-service solution for non-technical users. You get all this power without the need to run things through IT whenever you go slightly off-piste.

Of course, that doesn't mean that analytics with AI is perfect for everyone. The main drawback of this approach is:

- It's not quite as quick or simple to use as a browser-based search tool such as a search-driven analytics one, because you need to set your own parameters. The tradeoff of this, though, is that you end up with much better, more accurate results.

FINAL THOUGHTS

Search-driven analytics absolutely has a place and time. It's a great way to handle a small portion of your real-time analytic needs - namely when you need only a single, straightforward answer from all your data, and that need won't change. If that's all you want, this is a great bet.

Realistically, though, most businesses need a lot more than that. They need an end-to-end solution. They need technology that's flexible enough to meet the demand for continually changing and adapting demands. They need a system that's scalable.

For that, you need analytics that is driven by AI.

Ideally, your BI platform should embrace analytics with AI and agile technology. It should be capable of handling billions of records mashed up together from nearly any source. It should be affordable, versatile and scalable, able to apply transformations and store or query data on cheap-to-run commodity hardware and minimizing pressure on the system through fast, in-memory query processing capabilities.

What's more, it should be fully integrated, maintaining a single version of truth for all your business data, but also flexible enough to allow a broad range of enterprises and organizations to run the analysis and build the dashboards they want.

Finally, your BI should be designed for the business users that rely on it for day-to-day tasks. If it needs you to go through IT for every new query, it's simply not up to scratch. That's why great BI needs analytics with AI. Anything else simply won't cut it.

Want to see how Analytics with AI really works?

Click here to learn more

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