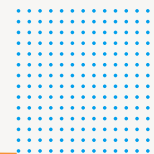
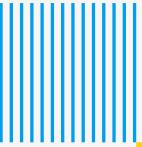


Guided Natural
Language Query:

5 Key Benefits of a Guided Approach to NLQ



An introduction to natural language query (NLQ)

Providing your analytics users the ability to get answers from their data is useful, but only if the solution can guide them to ask the right questions.

Today, businesses collect billions of pieces of information that, if queried correctly, can render transformational insight. Obtaining those insights, however, is a challenge that often vexes business users, planners and managers who aren't experienced in using analytics solutions to explore their data. While self-service analytics is typically a key goal for most organizations to derive more answers from data, only two out of five (40%) report their users can analyze data without help from IT, according to [Ventana Research](#).

To help business intelligence (BI) users, especially those without training better interrogate data, there are tools like natural language query (NLQ). NLQ is a self-service BI capability that allows you to ask questions of your data as you would a person, using everyday language. Ideally, you receive a chart or report that answers your query, and provides a deeper level of understanding.

NLQ tools come in different forms and levels of integration, varying between software vendors. Some platforms incorporate voice interaction, or querying data using a virtual personal assistant. The most common approach in the market is currently search-based NLQ, where you enter a query in a search box located within the BI interface, and the NLQ tool parses the keywords, matches them with elements in known and/or related databases, and shows a result.

The latest type of NLQ extends the potential of natural language further by taking a guided approach. Called Guided Natural Language Query, it assists you in knowing not just what to ask of your data, but how to pose a query, and acts as a simpler way for anyone to ask questions, and get accurate answers and insights from their self-service analytics. In this whitepaper, we explain what Guided NLQ is, and 5 key business benefits of having it as part of your BI solution.



What is Guided Natural Language Query?

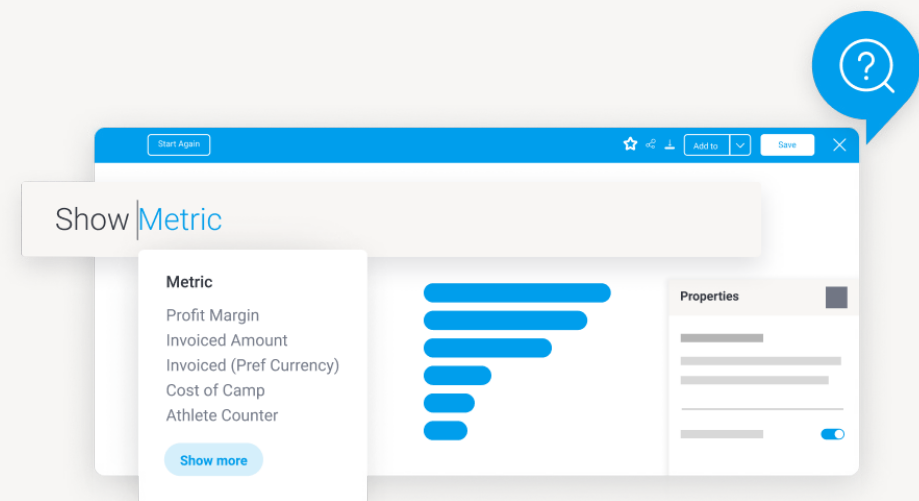
Guided Natural Language Query is an approach to NLQ that helps you structure your data questions using generated lists of relevant options and sequences, rather than via traditional free text search. While on the surface it looks like other NLQ tools, it is fundamentally different at its core.

Guided Natural Language Query offers specific capability within the analytics platform to assist you in building your query, such as what type of question to ask of your data, and how to query it the way you intend to. The level of help provided greatly varies between BI vendors; some NLQ tools offer pre-defined query suggestions in drop-down menus, or auto-completing fields when you type a question. In Yellowfin, we've taken a more comprehensive approach, called Guided NLQ.

An introduction to Yellowfin Guided NLQ

Yellowfin Guided NLQ is a fully guided, self-service natural language query capability that takes you step-by-step through every stage of querying your data. From formulating the type of question, to building it with field auto-complete and automated filter selections, to adding the answer to other analytic content in a seamless workflow, our tool provides a simple way for anyone in the organization to ask complex questions of their data.

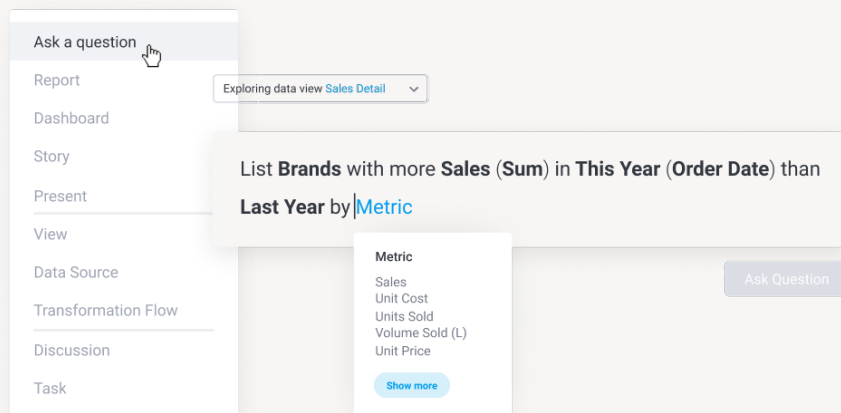
Guided NLQ is designed around ease-of-use. It's easy to set up, and easy for non-technical and expert users to ask questions and get instant results, which you can take into dashboards, reports or data stories for further sharing and analysis. There is no guesswork or technical knowledge required to get started with the tool, and you can choose your own path through the question by typing what you want to ask, using a mouse to choose a suggested option, or both.



Benefit # 1 - Guided NLQ is a unique, self-service BI experience

Yellowfin Guided NLQ presents a question bar you can type in after selecting a data view (dataset) you wish to query. However, it's not blank; you are given a list of options for possible questions to structure your intended query, whether it is basic or detailed (i.e. more complex).

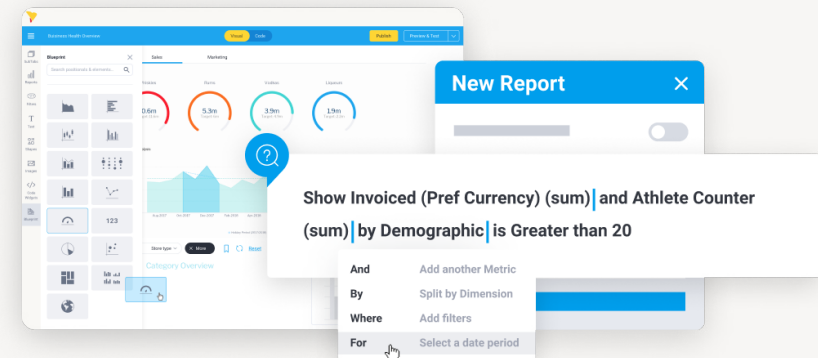
You're automatically shown relevant options in drop-down menus, and dynamically prompted with further suggestions as you type which can help you correctly state your desired question, such as 'compare', or 'list'. These use familiar business terms, rather than technical jargon. What these important add-on elements can do is lead you toward both a more relevant question and result than using free text search, where the meaning of your language can be missed.



Once your query is built, Guided NLQ presents the ideal level of data you need to uncover the answer as a best practice visualization (chart), which can also be viewed in tabular form. These generated answers can also highlight hidden patterns, trends and outliers or shifts in behaviour that can reveal deep insights that otherwise may not be seen or discovered with traditional BI analysis.

From here, you can do a number of things:

- You can go back at any time to rearrange the question
- Change your data view to find more answers from other datasets
- Add the generated answer to existing content in Yellowfin, such as Dashboards, Presentations and Stories
- Save your question for later



This fully guided approach to natural language query means there's no need to worry about the right terms to ask, or the correct synonyms to type to get a result, and the tool itself quickly generates the most popular search dimensions to help you get started. You can also easily click 'show more' to see all available fields within the data view. Because the NLQ feature itself effectively guides you through each step, everyone in the business can use it for answers, not just experts - making NLQ truly self-service.

Benefit #2 - Every question is understood by Guided NLQ

With Yellowfin Guided NLQ, there is no need to set up synonyms and word dictionaries, or continuously train the solution to understand your users' intent as is standard with search-based NLQ tools, because using the Yellowfin metadata layer bypasses this problem altogether.

The Yellowfin metadata layer, called a View, is virtualized — sitting between the data source and all dependent analytic content. It's used to define relationships between tables, identify fields to be accessed by report authors, and define both default data type and formatting for these fields. Users creating analytic content can use the relationships and fields defined in the View without having to understand the underlying logic. This same metadata layer is re-used for Guided NLQ.

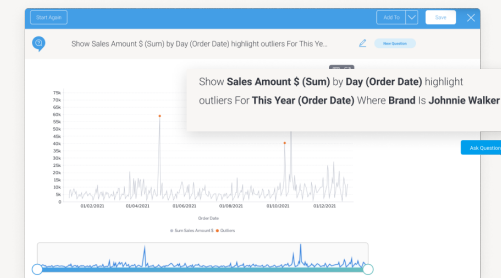
In doing so, Guided NLQ bypasses problems experienced in traditional search-based tools by ensuring each piece of text in the query you build is known and understood by the system. By offering guided options to choose from, any ambiguity or misunderstanding in what you're asking - a problem that [limited NLQ adoption in the past](#) - is eliminated. At no point can an invalid question be asked, and there's no "Search didn't understand what you meant" messages, because there's no such thing as a 'wrong' question.

Benefit #3 - Guided NLQ makes it simple to ask questions

Guided NLQ implements thousands of comprehensively modelled question types and sequences, which effectively enables anyone to ask questions of their data, and to deliver answers as best practice visualizations or tabular reports for every possible question combination you can think of.

Some examples of the complexity supported with Yellowfin Guided NLQ include:

- Tabular and cross-tab reports
- Automatic highlighting of items on charts, such as outliers, values, trends
- Complex filter construction
- Set analysis comparison, ranking, calculations
- SubQueries, including minus, intersect



Whether you have a complex question, such as finding accounts that had more sales this month vs. last month for specific product SKUs, or a basic question, such as a comparison of annual business performance from one year to the next, Yellowfin Guided NLQ has been specifically built to accommodate a multitude of queries.

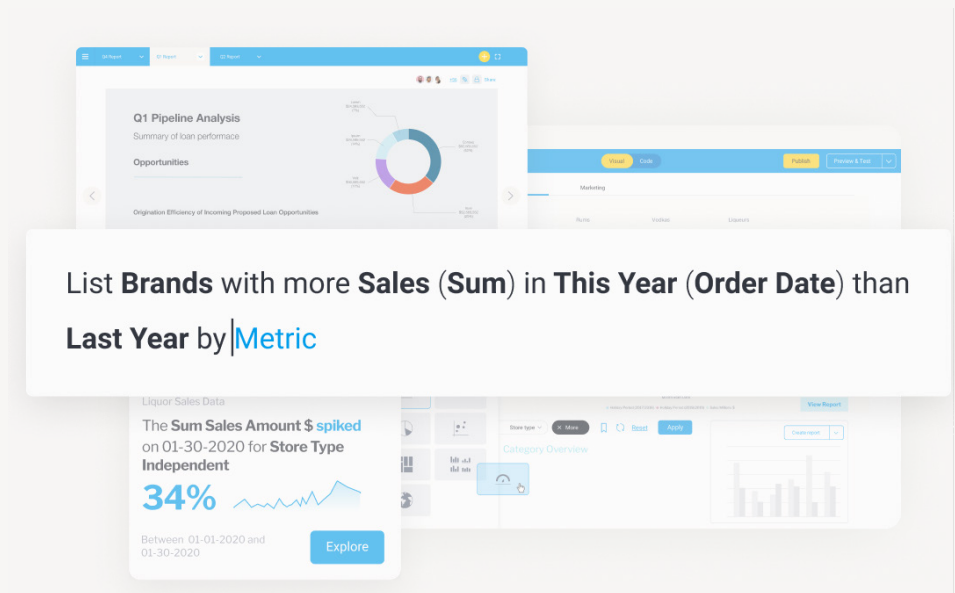
Benefit #4 - Guided NLQ is integrated throughout Yellowfin

Guided NLQ is fully integrated with [Yellowfin Dashboards, Stories, and Presentations](#), which makes it very easy to generate and add new analysis to existing analytic content, as any questions and answers generated using Guided NLQ can be shared using existing collaboration functionality. The feature also contains multi-language support, leverages the same security model as the rest of the platform, and is multi-tenant enabled to suit various deployments.

Most of the output from other NLQ vendors, in comparison, are siloed in their tools, which means you can't really do much with it after. In Yellowfin, you can do more, because it's integrated with other content and functionality, and can better form part of your daily workflow:

- **Self-service ad-hoc reporting:** You won't need to request a report from an analyst whenever you need fast answers from data any longer using Guided NLQ, in addition to other helpful data discovery methods in Yellowfin, such as Assisted Insights and [Signals](#).
- **Add answers to analytic content:** You can create new reports for your dashboards, Stories, and Presentations in Yellowfin with the answers you get using Guided NLQ, simplifying the creation of data stories and reports for non-technical users, and adding to the effectiveness of existing analytic content, such as your dashboards.
- **Faster ways to create and share complex reports:** Guided NLQ is also a faster way to help your advanced users (analysts and experts) to create complex reports, as they can start with a complex question, get a quick answer, convert it into a report, and continue their analysis. Mainstream users can also ask an ad-hoc question and immediately drop that into other content that they're working on, or share it with other colleagues.

In addition, if you are working on your own analytic content already (such as Dashboards, Stories, etc), you can quickly access Guided NLQ from those builders as well, and drop any generated answers into that with a seamless workflow. Ultimately, Guided NLQ is designed to seamlessly combine with existing features of the Yellowfin analytics platform for a more powerful analytics experience that accommodates all types of users and self-service BI preferences.



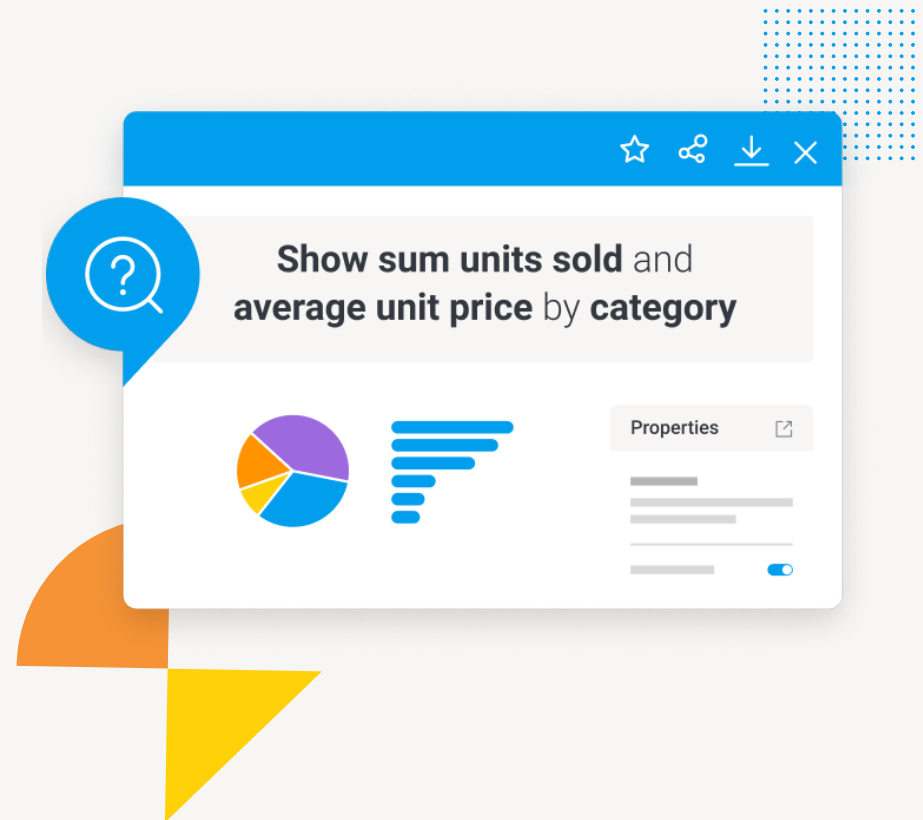
Benefit #5 - It's easy to embed Guided NLQ into your apps

Yellowfin Guided NLQ is designed from the ground up to be [easily embedded](#). It can be used independently of the rest of the platform, plugged into any of your apps, and launched from anywhere you want, whether it's a customer relationship management (CRM), human resources (HR) payroll, or finance system.

Guided NLQ is a stand-alone module not tied to a user interface (dashboard, workbook), or single data set, so you can curate a view and drop in NLQ capability for quick and easy self-service deployment, and it's API-enabled to provide fine-grained control and a customized experience. You can allow users to ask questions of any dataset, or limit the scope of what can be asked to ensure relevance to wherever you decide to embed it, benefiting several groups:

For independent software vendors: This level of flexibility can be leveraged to white-label Guided NLQ as an attractive feature that can help customers quickly create their own analysis without being a support burden, while further enhancing the product's value.

For enterprises: Your data analysts are usually the ones engaging in self-service analytics because it has a big learning curve, and non-technical business users don't have the necessary skills to perform it themselves, nor the time to build those skills, but Guided NLQ can now give your business users throughout the organization the ability to self-serve BI without having to rely on scarce data experts or analysts every time they want to explore data.



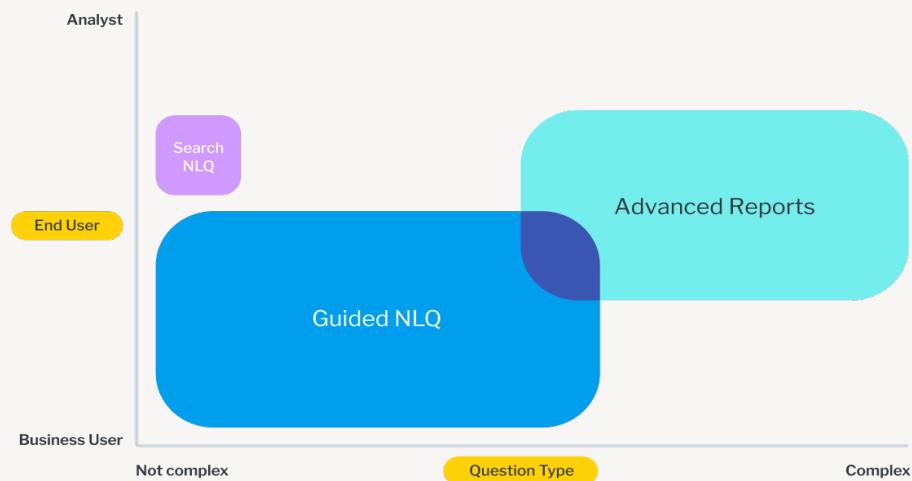
Why is Guided NLQ so important?

Guided NLQ aims to democratize self-service analytics in the business, and make more information accessible to more people, not just data experts or analysts, who search for it.

Instead of having to manually dig into data, you can get started on your journey for answers with NLQ by asking questions of the system directly, and getting a tailored result, rather than having to rely solely on finding answers in a traditional dashboard, chart or search bar. It's one of a wave of analytical capabilities in Yellowfin, including [automated business monitoring](#), [contextual analytics](#), and [data storytelling](#), focused on making the self-service BI process and analytics consumption easier for all

Guided NLQ can ultimately be used by ISVs and enterprise businesses to:

- Assist non-technical customers and users by providing another way to explore their data
- Compliment other traditional analysis techniques with streamlined, enhanced tools
- Make business analytics more pervasive throughout the organization overall



Guided NLQ: A true self-service solution

As analytics continue to permeate every aspect of business activity, BI applications are becoming more accessible, and even vital, to a broader range of users. Everyone needs insight — but very few are trained in analytics. Furthermore, data analysts are busy enough with large-scale projects. The need for DIY business intelligence is increasing.

Guided NLQ will change the way BI is distributed and used by everyone in the business. It provides an additional path to knowledge for non-technical, non-data-savvy users, alongside high-end analyses that require professional data analysts or scientists to complete. It achieves the self-service capability so essential to fast-moving enterprises, and can also be embedded.

Fast, complete, accurate and, most of all, democratized analytics is the ultimate goal of BI. Achieving that objective will require that tools and processes, as well data, reach every user, with ease-of-use at the core. Non-technical users will rarely, if ever, need to request a report from an analyst with Guided NLQ.

Business users have long asked what is the best way to bring understanding deep into their organization. That's the right question, and Guided NLQ is the right answer.



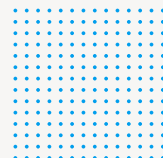
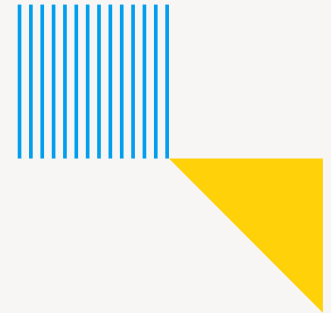
According to a Gartner® report,

NLQ is also becoming central to new consumer-oriented user experiences that combine augmented analytics or auto generated insights, narratives and anomaly detection into dynamic data stories and conversational analytics. ^[1]



[2021 Gartner Hype Cycle™ for Analytics & Business Intelligence](#)

[1] Gartner, "Hype Cycle for Analytics and Business Intelligence", Austin Kronz, Peter Krensky, 29 July 2021. GARTNER and HYPE CYCLE are registered trademarks and service marks of Gartner, Inc. and/or its affiliates in the U.S. and internationally and is used herein with permission





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