



Today's Need for Natural Language Query for Business

Every day, vast amounts of raw data is consumed, cleansed and transformed to provide more useful and meaningful information for individuals and businesses. Today, companies are using data to enhance their business strategies through a combination of internal data and external data ultimately drawing in more and more customers. In today's business world, where opportunities arise as quickly as they disappear with a limited timeframe, companies are required to respond to market pressures quickly and on target in order to stay afloat and ahead of the competition. In such an environment, it is imperative companies aren't subject to delays, backlogs, or long waiting times due to basic business functions such as search capabilities. In this whitepaper we will share how our product, "Ask Me" provides intuitive and steadfast data analysis for your business.

A New, Perceptive Approach

With Lumenore's **"Ask Me" Natural Language Query (NLQ)** feature, companies are able to quickly locate their data thanks to an unparalleled language-based search engine, with a perceptive, Google-like search engine that understands natural language and search for business insights.

Visual. Intuitive. Fast.

"Ask Me" takes an efficient, non-traditional approach to solving problems commonly found with data analysis. Through voice demand and web interface, executives and employees are able to utilize any published data source in their records while accessing the answers and insights they need in a visual, intuitive platform. This results in faster analytics while providing the company with a competitive edge.

Logic Versus Language

While computer software understands structured data like spreadsheets and database tables very well, humans tend to communicate in words, not in tables. Raw information and text in human languages are unstructured causing a disconnection between the employee and the data. How can we get a computer to understand unstructured text and extract data from it? Doing anything complicated in machine learning usually means *building a pipeline*. This means breaking up the problem at hand into smaller pieces and applying machine learning to solve each smaller piece. By connecting all the machine learning models to each other, you are able to achieve successful data analysis and this is the strategy we use with the “Ask Me” Natural Language Processing technology. In other words, each English word is broken down into small chunks revealing how each word fits with the other.

What are the Advantages or Disadvantages?

ADVANTAGES:

As previously mentioned, machine learning is ideal for reviewing large volumes of structured data while identifying patterns and trends that might be less apparent to a human being. On-going, continuous data mining is another area where machine learning lends itself better than a human.

DISADVANTAGES:

Since machine learning processes data in terms of theoretical and statistical facts, literal, or real-life concepts or terminology will often be concluded as different or unrelated. The end-result could become a situation where associated product recommendations are not actually connected or even similar.

How Does “Ask Me” Work?

In this section of the whitepaper we will highlight all the various facilities made available to business users while leveraging the most use out of the “Ask Me” module of Lumenore. A business user can ask various questions in his/her natural language and terminology to obtain insights from the compiled data. The powerful AI driven “Ask Me” engine has the capability to understand the intent of the questions asked as well as build context and identify what information should be involved in order to build the correct search algorithm and retrieve the desired result on screen.

1. Benefits To Your Team



1.1 Ask Any Questions With Ease

Questions can be asked by typing directly in the search bar or by speaking through a voice-enabled system in the web browser.



1.2 Guided Suggestions

While typing, you are guided by machine learning based suggestions predicting words, phrases and sentences based on the context of the question. This helps you ask the right question by typing just few letters and selecting phrases from a list of suggestions.



1.3 Virtual Assistants (Alexa, Google Home, Siri)

Using a simple setup you are able to configure your “Ask Me” virtual assistant while receiving timely insights through voice narrated output. You can ask the virtual assistant questions, receive instant answers and also ask to receive the data file in your email for detailed analysis. In almost no time users have all their required data available, empowering them to make the best decisions at the best time.



1.4 Voice Search

Users can ask questions using the Voice feature by simply clicking on the microphone button in their search bar. Recorded voice excerpts are converted to text and immediately analyzed to fetch the most accurate answer.



1.5 Auto Correction

While typing a question, any occurring typos are immediately auto corrected to match a grammatically correct word/phrase. If the question is ambiguous, the “Ask Me” engine will reframe the question and ask it back to the user such as, “Did you mean to ask any of the below listed questions?”



1.6 Advanced Help

The Advanced Help module of Lumenore’s “Ask Me” helps build precise questions with just a few clicks. Automated questions are created quickly and correctly.

2. User Empowerment



2.1 Ambiguity Correction

Once you start asking a question in the search box, the feature starts analyzing the question’s intent and identifying entities. During this process, if the “Ask Me” engine finds ambiguity where the given entity exists in multiple categories, it will prompt for user preference (e.g. word “Systel” could be customer name or a location name). The preferences will be logged for that browser session and the user would also have the option to define the preferences for an uninterrupted use of Lumenore’s “Ask Me.”



2.2 Edit Your Question For Precision

The user is given the choice to edit his/her question with just a few clicks, add any KPI/Attribute/Filter details using the “precision module”, which helps you select any desired date range, specific filter condition (e.g. a filter condition from January 5th, 2019 to February 9th, 2019 or specific to a supplier etc.) and apply directly to the question. This module provides tremendous value, as it precisely modifies the enterprise search.

3. Insights Management



3.1 Visualization Intelligence

Using the “Ask Me” AI driven algorithm, data is retrieved from the database. The “Ask Me” visualization intelligence engine identifies the right set of charts from which data should be displayed on screen. For example, it could be a line chart, a stack bar chart or a water fall chart. This engine not only helps users visualize their data insights in the best possible way, but also provides an option of changing and saving it.



3.2 Drill Through Analysis

Every company has pre-defined hierarchies that require drill through analysis in order to determine what company is doing good in revenue generation. With “Ask Me”, you can simply select the country, states, cities that you want to analyze. Such drill through analysis provides details on a granular level, in turn identifying any pain points and what your best actions to take are.



3.3 Add Your Work To The Dashboard

With “Ask Me” the users can generate various insights and add them all to a specific dashboard for future reference. These dashboards can be scheduled to refresh to provide timeline insights and a single view of a company’s various KPI’s.



3.4 Advanced Grid

Many times, a user may wish to download data to an Excel or CSV file in order to perform their own analysis. Our advanced grid enables you to perform various features in Excel such as pivoting, aggregation functionality and downloading the final grid to Excel/CSV for easy sharing.



3.5 Download/Email

Users can download the generated chart in Image, PDF, or Excel format for further sharing. You are also able to email the generated chart with a single click.

4. Additional Functions



4.1 Recent Searches and History

The user is able to search recently asked questions. You also have the option to search through the history of asked questions within any timeframe.



4.2 Trending Searches

The user is able to search trending questions as well as questions related to previously asked questions.



4.3 Related Searches

The user has access to other associated questions asked by other users or relevant to the current search. This database of questions can help you extend your search.



4.4 Configuring your “Ask Me”

Users are able to define their own KPI and link it to an existing department or topic (e.g. sales could be linked to gross sales of enterprise data) and use it as key term in the question asked. This module is beneficial, allowing users to configure “Ask Me” in their preferred method.

Integrating Ask Me With Alexa

“Ask Me” can be integrated with virtual assistant Alexa, which through dual authentication-based security modules, enables top executives to analyze data across various dimensions by simply asking targeted questions to Alexa.

Conclusion

Modern data analytics and business intelligence have come a long way from their traditional roots and are approaching natural language-based analytics using advanced machine learning technologies. With “Ask Me”, Lumenore provides its customers with:

1. Robotic Process Automation
2. Artificial Intelligence
3. Business Intelligence
4. Machine Learning

As predicted by Gartner in its Magic Quadrant report for Analytics and Business Intelligence Platforms 2019, the key differentiator for modern analytics and business intelligence platforms involves augmented analytics that encompass all general reporting in a single platform. We believe Lumenore provides just that and much more.

SCHEDULE A DEMO ►

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The patents are either obtained or pending for solutions described in this material.