

Using Artificial Intelligence to Inform Investment Decisions

Deeper Insights for Life Sciences Market Research



The Challenge

An international asset management team needed to increase its market research efficiency and gain deeper insights around investment decisions in the emerging life sciences market. This client was looking for a tool to augment their researchers' and analysts' capabilities so they could attain data-based insights into new medical technologies, procedures and medicines. Because they were investing in a dynamic, emerging market, they also needed to lower their investment risks and decrease research time to stay ahead of competitive investors.

The arduous task of going through new and existing information was causing the client to experience high cost in research time that could potentially have errors and inconsistencies from human bias.

The Solution

Working directly with the management team, 4th-IR applied its capabilities in Artificial Intelligence (AI), along with its experience and knowledge in Deep Learning, to create a market assessment tool. This tool scours both public and propriety data sources to identify market trends, products and technologies on the horizon.

Analyzing Micro Future Trends

At the product or technology level, the client can also look throughout the market and analyze:

- Patient populations and trends.
- New technologies that address specific problems or issues.
- Limitations in research or offerings.
- New procedures and where the new therapy or inventions can be applied.

Analysts Meet AI: The New Co-Working Relationship

Analysts will go through many different research sources to find what has been happening in a particular market. Even with the tools available today, integrating various data points and information sources to see how they are related to one another is a difficult task. In the hyper-paced life sciences market, time is essential when trying to predict when an opportunity may hit and doing this ahead of other investors.

The solution developed by 4th-IR dramatically reduces research time. What used to take 50 hours of work for an analyst can now be reduced to 10. This comes from the AI doing most of the pre-processing and data integration work in the tool and then developing easy-to-use, interactive data information displays. At this point, an analyst can interact with the information to gain deep insights with more efficiency and more accuracy.

“4th-IR’s market assessment tool provides insight and clarity so we can make smarter investment decisions at a fraction of the time. Decisions are grounded in data from such disparate, but highly relevant sources, updated in real time. It gives an edge and peace of mind.”

– Senior Life Sciences Market Researcher

The Three As: API, AI and Analysts

The ability to drive insights hinges on the efficacy of the technology within the tool. By using various existing application program interfaces (APIs), 4th-IR was able to develop a tool with the ability to scrape data and information from a variety of internet-based databases. An API allows separate programs to transmit information to each other so data from various sources can be integrated into one tool. If an external API was not available

for a data source, the 4th-IR team transformed the data to create a user-friendly and efficient API for the client.

For example, if a client uses a managed data source, such as the US government's clinical trials database, the tool can request and gather information through APIs. These databases contain a vast amount of information and data points for new and emerging medicines, devices, clinical trials, patents and publications. The tool captures this information and integrates it.

With an AI trained on medical terms, the tool then structures the data so a company analyst can easily see connections between disparate data sources. For this particular client, the unstructured text data was structured using a medical-knowledge trained Natural Language Understanding (NLU) AI, allowing their analysts to easily and quickly see interactive linkages between patents, publications and clinical trials. The market assessment tool delivers incredible speed and precision, with information updated in real time.

Analyzing Macro Future Trends

The assessment tool was developed to help analysts identify:

- Paradigm shifts toward a new technology or therapy on the horizon.
- The competitive landscape, market entrants and potential disruptors.
- Drugs, technologies, devices commercially available for the market.
- Products entering the market and those nearing the end of their lifecycle.
- R&D and investment pipelines, where they are occurring and the investor.
- Potential regulatory headwinds and tailwinds.

Eliminating Bias: A Clearer Picture - Faster

When researchers review significant amounts of information, they are essentially looking for a "needle in the haystack" by randomly following their intuition. On the other hand, the AI delivers consistent results, eliminating human bias, by only following the data based on defined keywords and analyzing methodically, not randomly.

Because 4th-IR can train algorithms, the tool can instantaneously review thousands of document pages and database queries, applying consistency to the analysis of the information. The tool becomes more accurate and precise over time by increasing consistency and removing human bias.

Analyzing Macro and Micro Trends

While many market assessment tools exist today, 4th IR was able to customize its solution to the specific needs of the client. This is particularly important when it comes to the inherent challenges of predicting the evolution of scientific method and application. By analyzing patterns in clinical trials, patent filings, R&D pipelines, corporate financials and regulatory decisions over time, we were able to help this client identify and highlight both macro and micro trends in the life sciences market.

“The machine learning tool allowed us to improve not only our completeness and depth of our findings, but also our efficiency and accuracy of our market analysis.”

- Senior Life Sciences Market Analyst

Whether you are looking for investment opportunities or developing growth strategies, conducting accurate and robust market analyses is a critical business requirement in today's economic environment, no matter if the market is emerging or mature. 4th-IR is able to create a data visualization platform where analysts can start at a high level and traverse the data to deeper insights.



4th-IR combines machine learning with business and healthcare expertise to develop practical technology solutions that enable healthcare organizations to deliver premium care while enhancing their bottom line.

Kreuzbuchstrasse 24 | 6045 Meggen, Switzerland | +41 79 9423303
122 Uptown Drive | Suite 204 | Bay City, MI, 48708, U.S.A. | 989.402.5441

www.4th-ir.com