

# Insurance Innovation: The Strategic Advantage of Natural Language Processing

*Generating efficiencies, cost savings, and faster insights*

## Situation

A large insurance company sought a vendor that could provide a repeatable and scalable means to convert vast troves of unstructured data into accurate structured data for use across multiple lines of business. Insurance companies rely on information across disparate data sources to support various use cases, including claims handling, experience analysis, and underwriting.

In many cases, the information needed exists in unstructured or semi-structured text-rich formats which have been historically challenging to extract insights from. Mostly, this information is retrieved through custom in-house scripting, legacy vendors, or manual data abstraction.

## Challenge

With an increasing focus on utilizing data science to drive efficiencies within the organization and the recognized need to extract structured features from text across business lines, the customer set a high standard. Key requirements included:



### Scalability

The solution needed to be able to process millions of records per hour.



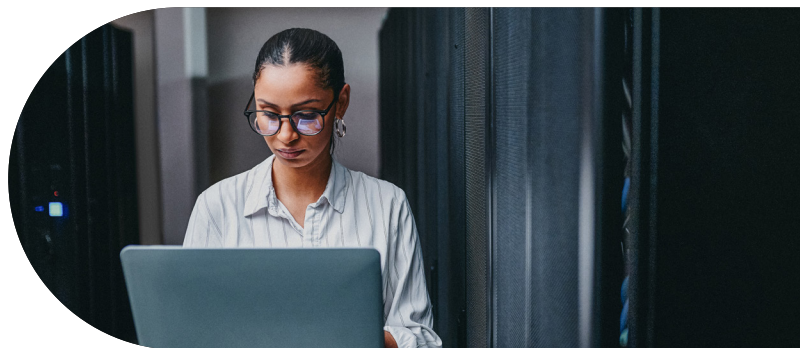
### Transparency

The solution needed to produce repeatable and understandable results.



### Flexibility

The solution needed to combine powerful out-of-the-box capabilities with the ability to allow end users to build and refine new models, independent of the vendor.



*“IQVIA’s NLP Data Factory is driving our predictive models and decision making on a daily basis.”*

— Director of Science

Finally, given the nature of the business and the importance of clearing these success criteria, the customer wanted to conduct a thorough evaluation of the vendor before committing to a longer-term relationship. IQVIA and the customer did a one-year pilot that included server sizing, requirements gathering, tailoring solutions for their specific needs, and building a custom software interface. This pilot and customization were possible because IQVIA comes to our customers as a strategic thought partner, not just a vendor with an out-of-the-box solution.



**8 million**

documents processed per hour



Seamlessly connect to Snowflake, Databricks, Postgres, MySQL, S3, SQLite, and more

# Solution

## Collaboration. Planning. Success.

Having conducted a thorough market assessment, the customer chose IQVIA as their vendor for artificial intelligence (AI) and natural language processing (NLP). Key to this decision was the framework and plan that IQVIA put in place to enable the customer to validate the enterprise-wide value, achievable with IQVIA's NLP platform – the NLP Data Factory. This involved a thorough process where IQVIA worked collaboratively with the customer's infrastructure and data science teams to appropriately benchmark their needs (from a document throughput perspective) as well as conduct training on the use of our platform. During this period, the customer's users were able to become self-sufficient and independent in both the consumption of output from our NLP and the creation of their own custom NLP algorithms and pipelines in our platform.

During this period, the customer successfully processed over eight million records per hour, running their own pipelines, with full control over the data being extracted. This proof point satisfied the critical success criteria that were defined in their search for a new vendor.

Since deploying the software, the customer has enjoyed three years of streamlined efficiency and business impact, resulting from the automation of information extraction from unstructured sources.



### The IQVIA NLP Data Factory:

- Enables precision NLP, at scale, on large volumes of data.
- Offers self-service for data science teams.
- Use-case agnostic and flexible.
- Customizable for entirely different lines of business.
- Deployable in the customer's environment.
- Connects to their data sources.



### Data sources can include:

Claims documents, policy documents, emails, chatbot content, social media data, medical records, patent documents, FDA drug labels, medical literature, member experience questionnaires, and more.

*“The NLP Data Factory gives us a competitive advantage — it’s our secret sauce.”*

— Director of Science

While the customer has maintained self-sufficiency in the definition and build of their NLP pipelines, IQVIA has remained a white glove partner throughout, designing and delivering customer user interfaces for new use cases, including NLP analysis of competitor carrier booklets.

*“With the IQVIA NLP Data Factory, we can now do in hours, what used to take us weeks.”*

— Director of Science

## Results

Our customer has realized benefits across multiple teams and business cases by partnering with IQVIA to deploy a versatile enterprise NLP platform.

The initial application was deployed for claims handling, and now the customer is able to achieve broader goals:

- **IQVIA NLP is now outputting the data that is being ingested across over 85 separate data science models.**
- **We have migrated the platform from its initial deployment in Oracle to Snowflake, demonstrating the flexibility of our approach, while new use cases are added regularly.**
- **The organization is reducing the need to contract and deploy several niche solutions, with the data science team responsible for the IQVIA NLP platform demonstrating increased performance and reliability of the pipelines they are rapidly able to deploy versus point solutions that others in the business bring to them for evaluation.**

The data science team has both reduced the cost of data to the organization and increased its value. With customer-facing employees able to spend less time sifting through large volumes of text, and instead having the insights served up to them through NLP, they are now able to spend more time in front of customers, making an impact on the business.

**Over 6 million synonyms**

across dozens of ontologies

**24/7 support team**

with 100% tickets answered within four hours

**97-98%** hours of service time logged

**>85** different data science models supported

**>1,000** NLP models in production

IQVIA's NLP platform can also be completely self-service, enabling the customer to expand as an organization and apply NLP to new use cases, independent of the IQVIA support team. But when they need questions answered or troubleshooting, the IQVIA support team is available 24/7 and answers all tickets within four hours.