

Pharmaceutical Leader Transforms R&D Search Powered by Progress Data Platform RAG Capabilities and Generative AI

CASE STUDY

COMPANY

Pharmaceutical Leader

INDUSTRY

Life Sciences

COUNTRY

United States

PRODUCT

Progress Data Platform:
Progress® MarkLogic®
Progress® Semaphore™

SUMMARY

When it comes to bringing a new drug to market, powerful enterprise search capabilities are vital to success. For one pharmaceutical leader, their search process had become fragmented among disconnected applications, document repositories and internal portals. To get the process back on track, the organization deployed a RAG search solution using the Progress Data Platform.

Challenge

Bringing a new drug to market can take anywhere from ten to 15 years and cost over \$1 billion. For this organization, the process involves thousands of researchers, scientists and other corporate users who all require ready access to relevant, current data to keep the process moving forward.

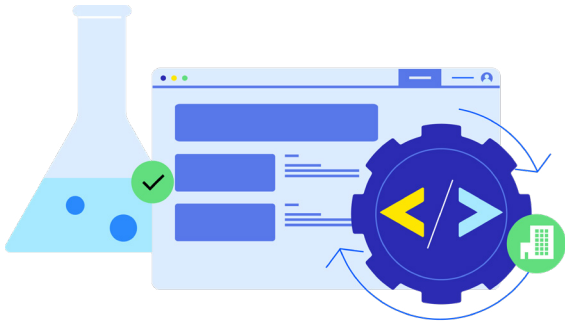
However, their search infrastructure, developed over a period of years, had become fragmented across numerous disconnected applications, document repositories and internal portals. Users frequently struggled to find relevant, accurate information due to outdated, duplicated content and inadequate metadata tagging, creating inefficiencies, slowing decision-making and diminishing user satisfaction.

As a company spokesperson noted, “Employees had to remember which portal or repository held the information they needed, whether it was an intranet site, a SharePoint library or a specialized application. Content was often duplicated, outdated or inconsistently tagged, making it difficult to find trustworthy answers. Users complained of irrelevant search results, wasted time and a lack of confidence in the information they found.”

Solution

Recognizing these challenges, the company partnered with Progress to strategically transform its enterprise search capabilities using the Progress Data Platform, leveraging the Progress® MarkLogic® data platform and the Progress® Semaphore™ semantic AI platform. Initially reliant on basic keyword-based search methods, their older system provided limited insights and lacked personalized, contextually relevant results. It didn't account for user roles, historical queries or domain-specific nuances, resulting in generic, link-based outcomes that increased the effort required by users to interpret and analyze the returned information.

By implementing the Progress advanced Retrieval-Augmented Generation (RAG) search solution integrated with semantic knowledge graphs, the organization significantly improved the precision and relevance of their search results. This approach combines traditional information retrieval techniques with generative AI, enhancing results by incorporating deeper contextual understanding through semantic graphs and highlighting meaningful connections between entities.



making it a valuable enterprise asset applicable across multiple internal domains and use cases. This ontology continually improves user intent recognition, delivering highly relevant and context-specific search outcomes.

With clear strategic objectives set for the future and results today, including an 85% relevance score, increased top-result click rates to 70% and substantial reductions in query refinement rates, the company has laid a solid foundation for continuous improvement.

Results

Comprehensive testing of the RAG-based solution revealed dramatic improvements compared to the legacy vector-based search system. Introducing a baseline semantic graph from Progress increased correct answers by 73%. Further refinements through the Progressive Graph solution from Progress enhanced accuracy by an additional 102%, demonstrating the effectiveness of integrating semantic understanding within enterprise search.

The adoption of semantic graphs also substantially reduced unsatisfactory responses. Initial improvements led to a 41% reduction in poor-quality answers, and subsequent refinements with the advanced semantic capabilities of the solution achieved an overall reduction of sub-par answers of 59%, significantly boosting user satisfaction and trust in the system's results.

Operationally, the company realized substantial cost savings by transitioning to the more accurate and efficient Progress semantic RAG solution. Additionally, they developed a robust, reusable ontology within the Progress Data Platform,








Learn more about how Progress RAG solutions can help you transform search capabilities to accelerate your business.
Contact us.

About Progress

[Progress](#) (Nasdaq: PRGS) empowers organizations to achieve transformational success in the face of disruptive change. Our software enables our customers to develop, deploy and manage responsible AI-powered applications and digital experiences with agility and ease. Customers get a trusted provider in Progress, with the products, expertise and vision they need to succeed. Over 4 million developers and technologists at hundreds of thousands of enterprises depend on Progress. Learn more at www.progress.com

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