

Amgen Creates a Connected Pharma Pipeline with MarkLogic and Semaphore

CASE STUDY



COMPANY
Amgen

INDUSTRY
Life Sciences

PRODUCT
MarkLogic; Semaphore

SUMMARY

As one of the world's leading biotechnology companies, Amgen needed to improve supply chain efficiency with better logistics intelligence, requiring the company to extract meta data facts from source data.

With the MarkLogic multi-model data platform and Semaphore's Semantic AI capabilities, the company was able to benefit from a new modular and linked methodology that harmonizes data from disparate sources, resulting in improved efficiencies.

Challenge

Life Sciences organizations have a “so many sources, so little time” problem – and knowledge workers become frustrated with the amount of time and effort it takes to turn data into knowledge, and insight into action.

Not only do “treasure troves” of data lie in unstructured text documents, but it's also difficult to connect complex data from multiple sources due to semantic gaps, i.e., where the same words describe different things, and domain knowledge and context aren't included. Further, limited master data oversight across data sources results in poor data quality.

Amgen's initial priority was to improve supply chain efficiency with better logistics intelligence. The existing process for lane management, for example, required multiple staff members and hundreds of hours of manual effort each month. Relevant data needs to be gathered from multiple disparate systems, and by the time the information is calculated and distributed, it's out of date.

Amgen recognized that what they needed was data agility, to let them respond to changing source data and changing consumption needs.

“The multi-model approach and the modular linked reference data approach has done well for us at Amgen. I feel like I can do all these use cases, because we know that if you've got your concepts in order and you've got an environment to do this kind of work, you can do this.”

Taxonomy Management Lead, Amgen

“We’ve derived operational benefits in terms of cost reduction, efficiencies, and, in analytics, we’ve come up with better reporting mechanisms, which helps in risk management.”

Taxonomy Management Lead, Amgen

Solution

Amgen decided to use a new “modular and linked” methodology to create data agility, based on the MarkLogic multi-model data platform and Semaphore semantic AI. The platform extracts metadata and facts from source data, uses smart mastering and knowledge models to harmonize data from disparate sources, and makes trustworthy contextual information available to downstream systems and machine learning.

Taxonomy data is an essential component of the reference data hub. Companywide vocabularies and ontologies are managed and distributed to hundreds of downstream systems. Federated governance allows subject-matter experts to directly control the concepts relevant to their domain.

Users are empowered with tools for sophisticated querying and higher quality analytics. The new logistics intelligence platform provides robust search and semantic indexing, with geospatial visualization and integration with Tableau for business analytics. The platform enables upload of documents and photos, and users get lane and shipper “score cards” to monitor and improve supply chain operations.

Results

Harmonizing the data provides efficiencies; information can be aggregated and reused, and direct and opportunity savings identified. The time and staff required to support the lane management process,

for example, has been reduced and the information is now both timely and of high quality. By harmonizing all information into a 360-degree view, lane metrics are efficiently and economically calculated, compliance obligations are easily met, and the business can make course corrections and alter business practices when required. With MarkLogic and Semaphore, Amgen benefits include:

- **Improved Logistics** – Enable the correct package to be delivered at the right time, at the desired location.
- **Minimized Risk** – Identify regulations and patents related to specific drugs.
- **Advanced Drug Delivery Technology** – Amgen can answer questions such as, “What drugs are delivered using this delivery device and which company manufactures them?”

Amgen has also identified future opportunities and benefits to integrate supplier data, create awareness of geopolitical events that may impact deliveries, and identify and redirect impacted shipments when required. A strong digital foundation allows the organization to capture, analyze, integrate, access, and interpret high quality, real-time data to fuel further automation, enhance predictive analytics, and improve business outcomes.

Further, the platform is extensible beyond logistics information. Knowledge workers at Amgen have a long-term, secure, enduring, collaborative access to multiple information sources from multiple locations – with the security Amgen requires. This enables internal collaboration, as well as collaboration with colleagues across the drug product development spectrum.

Amgen plans to benefit from their new data agility to enable “bench to bedside” connectivity of data to achieve faster time to market – supporting use cases including drug discovery, product portfolio management, regulatory compliance, and others.

About Amgen

Amgen is one of the world's leading biotechnology companies. Amgen is a values-based company, deeply rooted in science and innovation to transform new ideas and discoveries into medicines for patients with serious illnesses.

www.amgen.com



Contact us to learn how you can unlock value from complex data and create a connected Pharma pipeline

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Worldwide Headquarters

Progress Software Corporation
15 Wayside Rd, Suite 400, Burlington, MA01803, USA
Tel: +1-800-477-6473

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