

## CASE STUDY

# Creating a connected pharma pipeline



Amgen is a multinational biotechnology company

### Industry

Life Sciences

### Solution

Modular linked reference data hub to support logistics intelligence and more

### Key benefits

- Improved analytics
- Efficient and sophisticated search
- Minimized risk
- Reduced costs
- Safe data sharing

## Opportunity

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. And, 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to be gathered from multiple disparate systems, and by the time the information is calculated and distributed, it’s out of date.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.

## Results

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.

**“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 of 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

Taxonomy data is an essential component of the reference data hub. Company-wide 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.

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.

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.

And, 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.