

Case study

Data Governance in Pharmaceutical Science and Technology

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In Life Sciences, data is the new currency but only if it can be mined and retained at the highest quality; used properly, it can drive insights that improve research, operations, and outcomes. Pharmaceutical and biotechnology markets are poised to exceed \$1.2 trillion by 2022. As data volumes continue to explode, opportunities, as well as challenges, emerge:

- Not having access to all levels of data
- Not enough accuracy of derived analytics
- Inability to quickly deliver complex analytics in an easy-to-understand manner

Investing in innovative and cutting-edge technologies to manage today's massive data volumes from disparate sources is key. Storing and recording data from multiple sources is one thing, harmonizing and using it to gain insight require more than traditional technologies can currently deliver.

The Initiative

A biotechnology company leveraged the Semaphore Semantic AI platform to improve knowledge worker productivity, enhance customer experience and satisfaction, and optimize their SharePoint repository to efficiently manage and display enterprise information using an auto-classification approach.

Information associated with the drug development pipeline was spread across multiple file shares, sites, and libraries throughout the organization. It was stored in a variety of formats, and used diverse vocabularies. Sites and libraries contained multiple folders, which often contained duplicate content, resulted in wasted time and effort locating information and a less than valuable user experience.

How They Did It

Using Semaphore Knowledge Model Management (KMM), they built a knowledge model that reflected the products, development activity, stage of development, and other relevant topics associated with drug development. To ensure the model reflected their domain and use case, they leveraged Semaphore text mining capabilities to examine their content, identify its context and meaning, and use it to enrich the model and enhance classification outcomes.

Classification results were iteratively validated using a representative subset of the model (3 – 5 facets) and a predefined corpus of information (approximately 100 documents). As each iteration was processed, the model and classification outcomes were reviewed and modified to further enrich the model and refine classification results.

Part of the initiative was to validate their SharePoint on-premises implementation to ensure their future migration to O365 would be successful. Semaphore was configured to classify a single SharePoint knowledge library, which had a set of subsites. A broad model, fed from Semaphore, exists in the SharePoint term store to support tagging and auto-categorization.

Results

Today, required information can be quickly located saving knowledge workers time and effort. The validation of the SharePoint implementation was successful and classification results achieved or exceeded initial target results in the auto-tagging of content.

Concept	Target Classification Precision and Recall	Actual Classification Precision and Recall
Product Name	95%	100%
Development Activity	80%	80%
Stage of Development	80%	93%

The Semaphore Advantage

Life Sciences organizations can improve knowledge transfer across all stages of product development and manufacture with Semaphore. Taking a product through research and development, prototype manufacturing to industrial scale manufacturing is a process that can take anywhere from three to 10 years and can involve millions of documents. Semaphore's model management, auto-classification, and fact extraction technologies transform enterprise knowledge, accumulated throughout the R & D process, into actionable intelligence that organizations leverage to gain insight, drive profits and improve efficiency.

“Thanks so much for the hard work re: the POC. It’s great to see something move from a conversation in a conference to demonstrated value.” - Corporate Ontologist

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