

Smartlogic & MarkLogic; Driving Benefit Search in Healthcare

Driving consumer satisfaction comes down to delivering the right information at the right time. As healthcare becomes consumer-centric, healthcare organizations need to create systems that empower consumers to easily engage with all aspects of their care. For healthcare payers in particular, this means developing a holistic view across a diverse set of information sources, such as benefit plans, provider services, patient information and claim data. As healthcare organizations transform from retrospective, reactive service enterprises into proactive engagement platforms, they need a flexible data platform that provides a comprehensive view across these key information sources.

A top 10 healthcare payer needed to provide their customer support team with an efficient and reliable mechanism to respond to member queries about benefits and coverage. While each member is associated with a single healthcare plan, plans are often written by medical and legal experts who don't use the same vocabulary as a user. This diversity of language makes it difficult for the customer support team to quickly identify and respond to member queries. This payer built a *Smart Search* strategy that combined MarkLogic's database and Smartlogic's Semaphore platform to improve customer support, reduce operational costs and position them to provide timely and innovative customer self-service solutions to their customers.

The Power of MarkLogic and Smartlogic

MarkLogic is a fully transactional and operational database platform. Rather than worrying about time-and resource-intensive ETL (extract transform load) processes characteristic of traditional relational technologies, MarkLogic uses a flexible, multi-model approach that can easily handle almost any data source, whether it is data from existing relational databases, mainframes, Hadoop, file systems, or any other source. As an enterprise ready platform, MarkLogic also offers transactional reliability, high availability and disaster recovery, and certified granular security at the document level.

Smartlogic's Semaphore is an enterprise grade semantic solution that integrates with content management systems, workflow and search engines and next generation databases like MarkLogic to solve complex problems that traditional technologies cannot. Semaphore brings structure to the unstructured, scales to manage organizational volumes, and supports industry-standard semantic vocabularies.

Semaphore leverages ontologies, taxonomies and sophisticated semantic strategies to enrich assets with precise, complete and consistent metadata so organizations can aggregate and link disparate data sources, extract value from information, make sense of data and identify patterns and relationships to drive insight. Metadata is a key component in the *Smart Search* strategy, it provides the context and meaning to transform simple key word search results into a robust search experience.

Building Smart Search

They began by using Semaphore Text Miner’s extraction algorithms to identify common concepts found in the benefit documents. The mined concepts were loaded into the model, enriched and stored as a graph in the MarkLogic database. Semaphore Classification Server uses the model and applies sophisticated natural language processing, entity, fact and relationship extraction techniques to tag the benefit plan documents with precise, complete and consistent metadata, which is stored with the benefit plan documents in the MarkLogic database.

When a user performs a search, the search term is first located in the model graph, and then expanded by incorporating the concepts that are semantically near (i.e. synonyms, acronyms, alternative spellings broader and narrower concepts) the search term. MarkLogic’s search process maps the expanded keywords to the appropriate benefit plan document sections and returns the relevant results. Combining Semaphore’s benefit plan classification and MarkLogic’s keyword expansion, provide customer support with “Smart” search results.

Today, customer support staff can quickly and accurately respond to member requests; a search for “morning sickness” can quickly locate coverage information from the maternity benefits section of the policy. With Smart Search, support costs are reduced, staff and member satisfaction is increased and the organization is positioned to extend the reach of their *Smart Search* platform to additional use cases within the enterprise and support customer self-service delivery.

Smartlogic and MarkLogic; The Healthcare Platform for the Future

The synergistic relationship between MarkLogic and Smartlogic creates a platform for leveraging key sources of healthcare data to enhance the member experience. Together, MarkLogic and Smartlogic enable healthcare organizations to create a semantically enriched transactional and operational data platform, where healthcare organizations can develop a 360 degree view of their members, fuel customer support and engagement and drive customer self-service.

