

## Case study

Improving enterprise search for  
healthcare professionals

In healthcare organizations, delivering time-sensitive information to the right audience can be crucial to organizational as well as patient wellbeing. Approximately 80% of the people who work in the healthcare field are not knowledge or search experts they spend their time working with patients, delivering care, managing coverage, dispensing information, and managing electronic health records in order to:

- Deliver device and medicinal product recall information to doctors, pharmacists and other healthcare providers in real-time to manage positive patient outcomes.
- Identify and prescribe the most appropriate medication/procedure based on patient history, drug interactions and medical best practices.
- Quickly identify health plan coverage, exclusions and recent changes to appropriately manage patient care.

There is another side of medical information; unclassified data. Information such as, company reports, policies and procedures, important phone numbers, newsletters and fact sheets, which are located on employee portals, in content management systems, and other disparate sources that is difficult – if not impossible - to find and the inability to incorporate it into the decision-making process can be costly.

One not-for-profit health care organization serving Virginia and north eastern North Carolina, provides services to more than two million residents. Operating more than 100 sites, including acute care hospitals, outpatient care campuses, nursing centers, assisted living centers and primary care and multi-specialty physicians, they are dedicated to providing medical experts advanced technology and continuous innovation to improve health every day.

The Knowledge Solutions group provided staff with a structured information portal; a list of links to benefit, payroll, finance and health-related information. Running on a SharePoint 2010 installation the site had over 25,000 unique visitors each day. Unfortunately, search results were often unsuccessful and users resorted to poking around the site until the relevant information could be found wasting precious time and unable to locate key information in potentially critical situations. Attempts at manual tagging were unsuccessful; they needed a self-describing method that would automatically index all information against a predefined set of metadata concepts to provide context and meaning to all information.

## Result

They engaged with Smartlogic to create a proof of concept; an employee self-service information portal, which provided benefit and payroll information search. They later expanded their application to include finance and health-related information. Their efforts were so successful, the CIO presented them with a real business problem to solve, which led to a proprietary search application; a cataloging system to discover and keep track of all reports within the enterprise so users could:

- Find the right information at the right time
- Reduce duplication
- Address reporting gaps

So they created a proof of concept, validated it and then successfully rolled it out to the enterprise.



Figure 1. Application evolution from simple portal links to an enterprise search platform powered by Semaphore.

## How they did it

The team began with a discovery process to identify what reports existed in the enterprise paying close attention to what the report was about, where and when it was created, what data it contained and the validity of the information.

Not surprising, they found the information was dispersed throughout the organization stored in SharePoint, SAP, SAAS, in spread sheets, on file shares in document folders and on dashboards. There were duplicate reporting systems and reports and the vocabulary used to describe information was specific to system, department and domain. To achieve their goal they needed tools and technologies that supported their desired outcome.

Using Semaphore's Knowledge Model Management, they created a model that contained the relevant organizational structures, entities and the relationships between them. The model was then published and rule bases generated. The rule bases were combined with natural language processing, entity and fact extraction and subject, topic and thematic classification strategies in the auto classification process to result in precise and consistent metadata. Today report information has the context and meaning users need to locate what they need when they need it.

They use Semantic Integration Services to provide users with a visual representation of the reports and information within the enterprise. By clicking on a concept in the bubble map on the left side of the image in Figure 2, the center of the search screen is populated with the documents that contain the selected topic. Selecting a particular item in the search results will display related terms on the right. Report security is integrated using the organizations Active Directory, which prevent users from accessing detailed report information without appropriate authority.

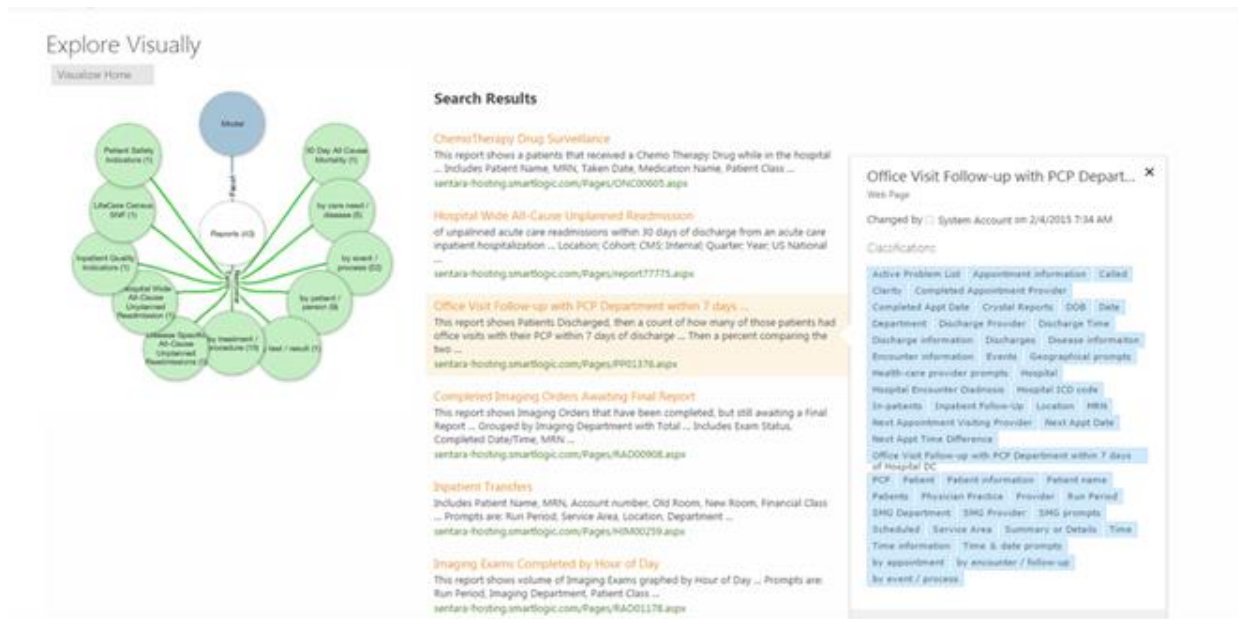


Figure 2. Search provides users with contextually relevant results. Visualization tools drive topic exploration and information discovery.

The momentum of the organizations success has resulted in securing executive sponsorship and funding to set up a dedicated platform architecture to support enterprise search for documents and information within the enterprise. This end-to-end solution will include development and test environments and integrations with Solr Lucene.

Today, user search experience provides trusted and relevant results. Employees see the value of using a model to drive precise and consistent metadata; they have charted a course to integrate additional reports and documents into the system. The partnership which Smartlogic has achieved initial goals and expanded the solution to provide greater support for healthcare providers and by extension the patients they serve.

## Our Approach to Solving your Challenges

As healthcare organizations struggle to meet patient, government and community requirements, the information they rely on must be precise, complete and consistent. Smartlogic offers a unique set of tools and technologies that enhance your content management investment and provide cost savings through the reuse and repurposing of components.

Whether your content management system resides on-premise, in the cloud or a hybrid mode, Smartlogic approaches your challenge with a proven and well tested process for enterprise information management to power your organization.

For more information about Semaphore, our Semantic AI platform, contact us at: [info@smartlogic.com](mailto:info@smartlogic.com)

**SMARTLOGIC – AMERICAS**

111 N MARKET ST.  
SAN JOSE, CALIFORNIA, 95113  
TEL: 408 213 9500

**SMARTLOGIC – EUROPE, MIDDLE-EAST AND AFRICA**

200 ALDERSGATE  
LONDON, EC1A 4HD  
TEL: +44 (0)203 176 4500

[WWW.SMARTLOGIC.COM](http://WWW.SMARTLOGIC.COM)  
[INFO@SMARTLOGIC.COM](mailto:INFO@SMARTLOGIC.COM)

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