SmartHub

AI-Driven Platform for Internet-Like Search

Executive Summary

Search is foundational to a wide variety of experiences. The ability to instantly find relevant information and gain insights into the vast amount of data that exists within an organization is key to employee productivity and the success of the business.

Internet search has shown us just how useful and powerful search can be, but it has also set high expectations for simplicity and ease of use. Historically, it has been challenging to meet these demands, but when they are met, users are more engaged, loyal, and productive – generating measurable returns on the investments in search.

AI-driven search enables organizations to benefit from intelligent search that is proactive, interactive, and personalized, providing a unique search experience to every user. Additionally, it can be integrated into almost any application, enabling users to have the same experience regardless of where they search, providing a familiar, internet-like search experience. After all, information should be just as easy to find within yodur organization as it is outside of it.

This paper focuses on BAI's SmartHub, which supports Elasticsearch, Solr, O365, SharePoint 2019/2016/2013, and Azure Search. It provides a variety of capabilities including machine learning-based recommendations, search bots, natural language querying, and more. When used in conjunction with any of our 70+ enterprise system connectors, all of the functionality is extended to the search results that include content from the source system(s). Also, our AutoClassifier further extends the functionality to include auto tagging, natural language processing, image and video analysis, and more.

SmartHub

SmartHub is an AI-driven platform that modernizes your search implementation, enabling you to deliver an internet-like, personalized, and relevant search experience to your users. It is comprised of a highly flexible, mobile ready HTML/CSS-based user interface and a powerful intelligent engine that modernizes enterprise search. Its open architecture provides you with the flexibility to leverage the search engine of your choice - Elasticsearch, Elastic Cloud, Elastic Cloud Enterprise, Solr, Azure Search, Office 365, SharePoint 2019, SharePoint 2016, and SharePoint 2013 – and to change search platforms over time as your requirements evolve, without the need to implement from scratch.

This Best of Breed approach also extends to Cognitive Search, enabling to choose from Microsoft Cognitive Services, Google Cloud Services or the Rasa stack. It provides the capabilities necessary to deliver the kind of results that users are accustomed to from their favorite internet search experiences, which exhibit common attributes:
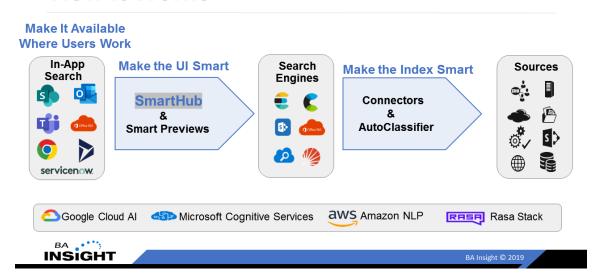
Connected: All the information a user needs should be delivered by a single search. Internet search engines like Google and Bing deliver results from a wide variety of sources in a single search result, and enterprise search should provide the same broad access to all the information users need.

Personalized: Having search results tailored to the individual user decreases the time spent looking for information and leaves users with more time to perform critical tasks. Search should leverage information about the user – job role, location, interests, prior searches – to ensure that the most pertinent information is delivered first.

Relevant: Nothing causes users to abandon search faster than seeing results which aren't relevant to them. Enterprise search technology needs to include tools to enable relevancy tuning to deliver search results that represent the needs of every individual user.

AI-Driven: Whether it be allowing users to search using natural language or providing recommendations based on prior user activity, AI dramatically simplifies the process of finding relevant information.

How it Works

**Make It Available
Where Users Work**

The other components of the BA Insight Software Portfolio that SmartHub works with are:

- **Connectors**. Create a single unified search index to provide your users with a single place to find information from all the sources they need while respecting security entitlements placed on content in those sources.

- **AutoClassifier**. Leverage both AI and rules-based techniques to analyze and tag all of your content – documents, posts, images, and video – to enrich the search index for increased findability.

- **Smart Previews**. Provide users with the ability to quickly locate the relevant content within documents and attachments.

Key Features

SmartHub delivers on the promise of providing Internet-like search within your organization, particularly when it works with the other components of the software portfolio. It provides a wide variety of capabilities including:

- **Bot**. The SmartHub Bot serves as a digital assistant to guide the user through their search experience. It can be used in place of a traditional search bot to provide an entirely new way to search. Users can be prompted with recommended searches and for information to filter results. The Bot can offer Featured Content in response to searches to highlight the most relevant results. When searches yield no results or too many results, the Bot leverages analytics to offer assistance.

- **Natural Language Query**. One of the biggest impediments to successful enterprise search is the limitation of keyword search. Users don't understand (and don't want to understand) the complexities of search engine syntax. SmartHub leverages AI to understand requests framed in natural language, determine the user's intent, and deliver the correct results. It bridges the gap between what the user needs and how queries are processed by search engines.

- **Personalized and Relevant Delivery**. SmartHub takes advantage of each user's context to deliver personalized search results in multiple ways:

  - <u>Zero Search</u>. Proactive delivery of highly relevant content can provide users what they need before they execute a search. The dimensions of the users' personas are used to determine the content that is best for them – i.e. these results fit someone with a particular job role, these are best for someone with specific interests, and so forth.
  - <u>Dynamic Relevancy Tuning</u>. SmartHub provides tools for both Administrators and Users to tune relevancy. Administrators can make enterprise-wide configurations that suit the needs of the majority of users, while individual users can decide what is most relevant to them at that particular moment and modify how relevancy is calculated using graphical controls.
  - <u>Preferences</u>. Users are provided with tools to allow them to modify the elements of their persona which are used to personalize content delivery, giving them ultimate control of their search experience.

- **Analytics**. Applying Machine Learning to information captured about user search behavior enables SmartHub to make intelligent recommendations to users. As users type in the search box, SmartHub automatically suggests similar searches which have been run previously and have yielded positive results. Personalized content recommendations point users to content which has been found to be relevant by other, similar users. Additionally, a comprehensive set of reports provide search administrators with information that can be used to ensure that enterprise search is delivering what users need and to increase user adoption of search.

- **Availability**. In order to provide maximum value, enterprise search needs to be available to users where and how they work:
    - Implementing enterprise search as a separate destination is disruptive to users. With SmartHub, users can access AI-driven search in the way that makes most sense based on their current activity and needs. SmartHub can be accessed standalone or directly from within the applications where users work – Outlook, Teams, Dynamics, Salesforce, ServiceNow, SiteCore, and others. Users don't have to stop what they are doing to search for and access the information they need. SmartHub delivers it right where they are, making enterprise search an integral part of the way users work.
    - SmartHub is fully mobile responsive out-of-the-box, so users have full access to enterprise search from their phones or tablets.
- **Identification of Results**. Delivering the most relevant results is critical, but users also need tools to understand each of the items returned by search without having to download and open each result. SmartHub provides this in multiple ways:
    - <u>Document Summary</u>. An understanding of the core meaning of a document is used to generate a summary of that document. SmartHub allows users to view that summary to quickly understand whether that particular item contains the information needed.
    - <u>Smart Previews</u>. When used with SmartHub, Smart Previews enables users to quickly and easily identify the relevant content contained within documents or attachments. Search terms are automatically highlighted and a Hit Map shows the users pages with relevant content.
    - <u>Similar Documents</u>. BA Insight's AutoClassifier applies Natural Language Processing to determine the key concepts contained within documents. SmartHub leverages that information to present the user with documents that contain the same key concepts but do not match the user's search. This brings value to the user by providing additional relevant results.
- **Auto-Complete**. In much the same way as it is with many internet sites, as users type in the search box, SmartHub provides dynamic suggestions, machine learning-driven query recommendations based on prior successful searches by other users, available metadata values that match what the user has typed, and results such as People or Content. Users can select any of the suggestions and be taken immediately to the search or content they have chosen.
- **Multi-Index Search**. Sometimes it's not possible for all content to be available in a single search index. Data residency requirements may prohibit it, some sources of content may not be suitable for indexing, or in some organizations multiple search engines may be in use. SmartHub Search Orchestration sends queries to multiple search engines simultaneously, interleaves the results, and consolidates facet values so that users get a single unified search result.
- **Flexibility and Control**. SmartHub lets you decide how users will interact with search and how it should respond:
    - The SmartHub User Interface is built on standard web technology (HTML/CSS/JS) so that it can be adapted to fit the needs of your organization without requiring specialized development skills. All components of SmartHub are mobile responsive, so users can access enterprise search from any device.

- o The Intelligent Engine is the "brain" that drives SmartHub and allows you to control how queries are delivered to the search engine and how returned results are presented. Tools for relevancy tuning, synonyms, multi-index support, and other key features are encapsulated in this Intelligent Engine.

Summary

SmartHub, along with the other products in the BA Insight Software portfolio, allows you to deliver internet-like enterprise search which satisfies the key criteria found in the most successful internet search experiences:

Connected. With our growing list of 70+ indexing connectors, SmartHub provides users with a single place to search, providing access to information from all the relevant systems deployed in your organization.

Personalized. Capabilities such as Zero Search and Dynamic Relevancy allow results to be dynamically tailored based on an understanding of the context and preferences of individual users.

Relevant. The SmartHub Intelligent engine allows both administrators and end users to tune relevancy so that the most important results are delivered first.

AI-Driven. SmartHub and other BA Insight software leverage AI to provide the best possible search experience. User intent is determined based on an understanding of the requests made in natural language, and content and queries are recommended via analysis of prior user activity. The key concepts contained within documents are distilled into summaries for user understanding. All of this combines to deliver an internet quality search experience.