INFOLUTION
SOLVING INFORMATION COMPLEXITY

Research

No matter what type of organisation you work for or what type of function you perform; research is becoming more important and demanding. Development cycles for new products, in almost any industry, are being shortened. The number of patent filings increases exponentially. Marketing departments have to be on top of their competitors moves. Business analysts need to be aware of financial and economic developments in order to provide sound advice. All of these decisions require efficient and effective research.

Performing good research depends on finding things fast and on being comprehensive and accurate. No organisation commands enough language skills to be able to scan through the entire universe, yet you need to quickly find the needle in the haystack. Overlooking even just one tiny bit of information could be fatal. Search technologies depend primarily on statistical rules; typically these rules are not very helpful when it comes down to finding the needle, unless you know exactly how to describe it. During your research you recognise that the more exploring you do, the more you learn; that's where a new type of search techniques becomes relevant.

Infolution Research is ideal for the described purpose. It is perfectly suited to meet the demands of today's research. It can search through structured and unstructured text data whether they reside within the enterprise or outside. It can search in any kind of data repository from knowledge databases as well as across the Intranet to the Internet.

Infolution Research makes users effective and efficient in finding what they are looking for. Results are delivered at a high level of precision and recall. Using associative help, the solution dialogues with the user and helps the user find the answers by continuously making choices as to which path to follow in order to narrow down choices. By its ability to put information into the right context, information turns into knowledge. The software also provides a unique capability of summarising any type of document or multiple documents into one. The result can dynamically be tailored to meet the needs of the respective audience or user. For example, one researcher may be interested in a comprehensive summary with a technical focus, while another researcher is in need of a summary with a business angle. The self-learning capability of **Infolution Research** is able to learn about a user's profile over time and adapt to his specific needs.

Infolution Research is an innovative solution, which is unique in many ways. It helps researchers by not only recognising content, but also by interpreting it. Information is at the fingertip of all team members. This allows for effective knowledge sharing and it ensures that knowledge is not vested solely in one particular employee.

Infolution Research makes users more efficient and more effective. The software provides an open API to allow for integration into existing software environments, where researchers are already working. The intuitive user interface does not require user training. Together with the associative help functionality, it allows for immediate productivity.

The benefits of Infolution Research are impressive:

- Speedy access to information.
- High accurary and relevance.
- Automatic content summaries.
- Scalability with data sizes.
- "Filters" separate relevant from irrelevant information.
- Intuitive interfaces.
- Associative help.

Infolution offers a very attractive solution to research departments. The portfolio is complete with very powerful software, services and support. Infolution's fast response times to queries and support are recognised as second to none by their customers.

Example

Infolution Research is used by a multinational company that operates in the food and beverages industry. The company is the market leader in its specific industry segment. The company deploys Infolution software specifically in its product development research entity, where more than 100 users (spread across multiple locations and continents) have the task of developing new products based on its marketing research.

Previously, the company had decided to store all its internal research information electronically. Today they use Infolution software to initiate searches in this information pool, which contains both structured and unstructured data. In a second application, the Infolution software will also be deployed for searches on the Intranet. In its third phase, the user plans on using Infolution Research to become its "super search engine" across all data sources including the Internet.

The positive feedback on the Infolution software confirms its ideal positioning for research facilities. Two special features turn out to be the key differentiators for Infolution's system:

- The semantic concept in combination with the intuitive user interface turn out to be very powerful, especially when further refined search is done.

- The automatic summary feature across multiple documents is unique in the industry. It allows the user to quickly determine which documents need to be researched more in detail.

The fact that Infolution offers optional services and support contributes significantly to the overall solution.

The technology

Infolution Research is making use of the **Semantic Search Engine** which utilises semantic algorithms, statistical rules (Boolean and Bayesian), linguistic technologies and self teaching and learning capabilities. There are four major components to it:

Harvest: Data collection from various sources is done with intelligent software utilising a semantic analysis of the text surrounding the actual link. This allows Infolution software to determine the context in which the data stand and ultimately determines the priority of the document for the user.

Analysis: The core of this module is the first ever scalable and commercially viable semantic processor. It operates similar to the human brain understanding and classifying content – and it is capable of learning as it goes along. In other words: not only does it understand the meaning of a user query and the context of a found document, but it can also correlate the two.

Storage and retrieval: An SQL compatible database is the core of the storage module, which is operating on a semantic basis. It allows retrieving more from a document that just the actual content. It allows, for example, summarising a document tailoring it to the intention of the initial request. This is possible because not only facts are stored, but also the relation between them.

Access Control: A conditional module is incorporated that will follow the access control list of the underlying data storage. Infolution uses this information to safeguard that both documents and indexes are only visible to authorised users.

The Infolution engine works continuously, doing the above four functions and updating its files as soon as documents are added or modified. The architecture is such that it provides unlimited scalability and high performance, which are critical for searches in large websites or across content rich, multiple websites. The engine prepares data for the main functions of the Infolution Research solution: search and summarize.

Search may be regarded as a matching function: in search, queries are matched with document indexes. Search can be applied to structured and unstructured text documents across multiple languages.

Summarize: During the retrieval process, users will encounter one of the most visible benefits of the system: its capability to automatically create a summary of a document. This feature is one of the most spectacular elements of the Infolution software. It is based on a document synthesizer which can take any number of documents and present a summary as a virtual document. The summary can easily be changed in length without loss of coherence. Also, it can easily be rewritten at any point in time placing an emphasis on different topics as required by the user and his profile.

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The following features of **Infolution Research** make it a very powerful solution for companies of any size:

Scalability: Infolution supports up to 8 WWW servers, 128 file locations, 4 CPUs and allows more than 1000 users to share knowledge.

Industry standard platforms: Allows integrating Infolution technology into existing infrastructures. Not only can it be installed on existing servers, but also does it come with a documented open Application Programming Interface (API) to allow for tighter integration into existing software solutions.

Multi-language support: Allows international companies to standardise across borders. In total 72 languages are supported by Infolution.

User Interface: The rich user interface is especially designed for professional use. It supports the user with dynamic context interactive visualisation. The search engine finds the conceptual context of a search and gives the user a number of intelligent alternatives by relating queries. The contexts of the results are shown in an intuitive three-dimensional graph, in which more important concepts appear to be closer to the user than less important ones. Using visual cues, like mouse-over effects and animation, the system clarifies how and why certain concepts appear.

Infolution bv
Schouwschuit 37
1613 CJ Grootebroek
The Netherlands

Phone: +31 (0)228 52 40 70
FAX: +31 (0)228 52 40 74
www.infolution.com

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