

“Knowledge is *actionable* information that will allow decisions to be made¹”

Lt. Gen. Peter M. CuvIELLO, U.S. Army CIO

In matters of national security, information is not enough. Nothing less than **actionable** information, presented in the right form, to the right person, will do. The challenge is the information bottleneck that exists between vast collections and sources of unstructured data and the process of converting that data to **actionable** information or knowledge.



the information bottleneck challenge

Today, the intelligence community faces an information bottleneck of unprecedented proportions: large volumes and types of unstructured data that analysts must quickly, thoroughly and precisely scan for relevance to a large number of threats, route to the appropriate subject matter analyst for analysis and assessment, and then distribute precise and actionable information to appropriate military war fighters or civilian first responders. As tough a challenge as that represents, it is only getting worse:

- **Ever-expanding number of threats** — Political insurgencies and new terror groups are constantly arising, broadening the scope of real, implied or hoax threats.
- **Ever-expanding input** — The sources and amounts of unstructured digital data on threats (real, implied or hoax) are increasing geometrically, enabled by new and disparate communication systems that include e-mail, chat, instant messaging, cellular and satcom telephony, print, voice to text communications, and commercial news feeds. This means that there is more information about more threats than ever before.
- **Conventional search technology** — Conventional search technologies (e.g. Boolean, Bayesian) which underlie knowledge management and information retrieval applications are inadequate since they can not distinguish between relevant and irrelevant information. Conventional technologies are not intelligent enough for the job.

Commercial knowledge workers spend almost one third of their time searching for relevant information². Microlanguage has demonstrated³ that conventional search technologies waste up to 80% of that time because the information they return is irrelevant. In the intelligence community, where information is the primary commodity, even more time is being lost looking for relevant information and turning it into **actionable** information.

If there were a way to program the knowledge of the intelligence analyst into a knowledge management application, the application could distinguish between relevant and irrelevant information, and get the right information to the right analyst. The information bottleneck would be overcome, and analysts could spend more

¹ SIGNAL Magazine, August 2001. *Electronics Transform the Army*.

² Infoworld Magazine, January 4, 2002 issue.

³ Microlanguage Whitepaper, *Conventional Search Technology vs. Intelligent Language Processing Technology*.

time analyzing relevant information and acting upon it. What is needed is a next-generation technology that intelligently distinguishes between relevant and irrelevant information and can convert simple data to **actionable** information.

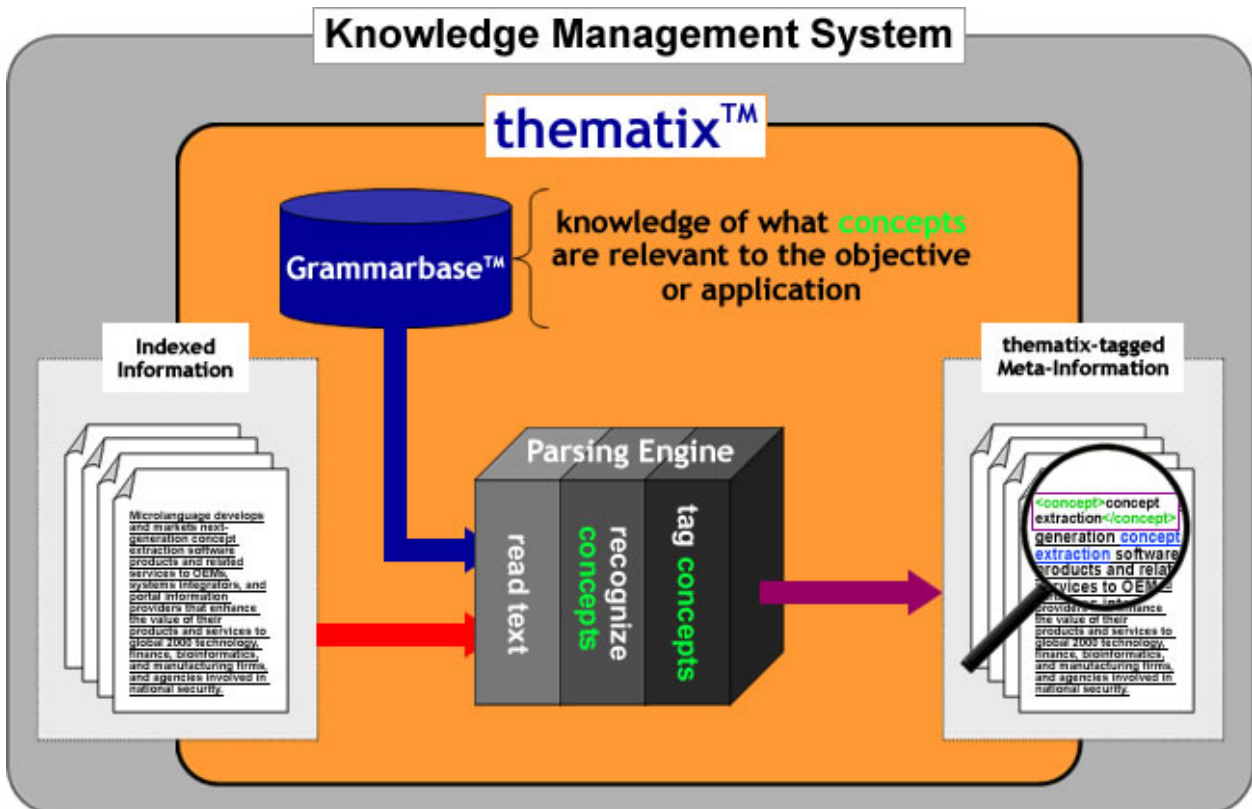
**thematix
the information
bottleneck
solution**

Microlanguage's next-generation, intelligent language processing technology, Thematix, is aimed at applications that demand highly precise filtering of unstructured digital information. Thematix features two components:

- The **parsing engine** breaks incoming information into its constituent parts, such as words and punctuation, so they can each be examined individually.
- The **grammarbase** is a repository of knowledge that gives further instructions to the parsing engine. The analyst's knowledge of what information is relevant and how to use it is programmed into a grammarbase.

Thematix recognizes relevant, **actionable** information, marks it as such, and enables the knowledge management application with which it is integrated to distribute it to the appropriate analyst in 'analyst ready' form: nothing less than the right information to the right person, in an **actionable** form.

As a component software technology, Thematix integrates with third party knowledge management applications, giving them much higher search acuity, while interfacing seamlessly with their document management tools.



the benefits

Thematix technology enables intelligence analysts to focus on knowledge, not on sorting through thousands of bits of information that may or may not be relevant to their specific interest. Thematix enriched knowledge management applications offer several important benefits to the intelligence community:



- **Reduced cost of information sorting**
- **Reduced operator fatigue**
- **Conserved processing time**
- **Closed gap between data and actionable information**

about microlanguage

Microlanguage develops and markets next-generation concept extraction software products and related services to OEMs, systems integrators, and portal information providers that enhance the value of their products and services to global 2000 technology, finance, bioinformatics, and manufacturing firms, and agencies involved in national security. For more information on Microlanguage and Thematix, visit us on the web at www.microlanguage.com, or call us at 610.995.1017.

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