Starlight: Making Information Visible

Visualization Technology Improves Information Discovery

Businesses, governmental agencies, the intelligence community, and individuals are bombarded by information on a daily basis. In many cases, the information contains value; often it does not. Having the ability to uncover the "aha" in that mountain of information could generate millions of dollars in business revenues or perhaps prevent a major terrorist attack from happening.

Starlight, a novel and powerful information visualization software developed at Pacific Northwest National Laboratory, can help to untangle the complex, multifaceted problems facing information analysts dealing with enormous quantities of information and data.

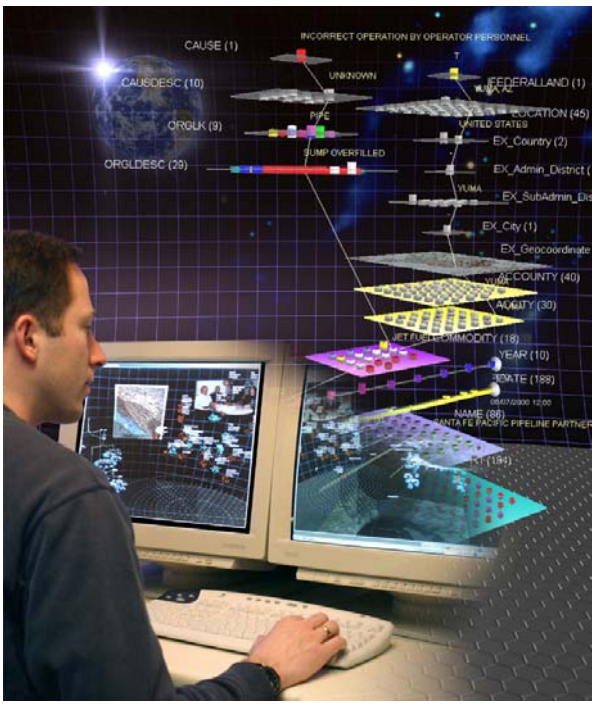
Illuminating the Path Ahead

Visualization tools have now moved far beyond simple charts and graphs that display a handful of facts. They have become the method of choice for understanding many complex business issues. Pictures are no longer worth just a thousand words; in some cases, they yield millions of dollars worth of valuable information.

Starlight offers a powerful new approach to addressing the problems associated with information overload. The Starlight visualization tool doesn't just manage huge volumes of disparate information, but also recasts the information into forms more conducive to problem solving. This enables rapid and effective visual interpretation of the complex relationships existing among the contents of such collections. By focusing on relationships between meaningful pieces of information, and placing those relationships into meaningful contexts, Starlight illuminates the path ahead in the field of information technology.

We have 32 federal agencies that have classified systems. The problem is that each of these agencies' classified systems is stovepiped. You need to have the data from these 32 information sets available, and high speed computers using software systems like Starlight to run this information quickly, because you can't analyze it with ordinary human beings reading it.

—Congressman Curt Weldon, chairman of the Subcommittee on Military Readiness, on MSNBC.



The Starlight Information Visualization System launches a new generation in visualization technology by uncovering key relationships hidden in large, complex, dynamic information collections. Starlight is available for a wide range of applications, including government intelligence, business and competitive intelligence, strategic planning, intellectual property management, fraud detection, network analysis, epidemiology, bioinformatics, aviation safety, and law enforcement.

Starlight's Competitive Advantage

Starlight's key advantage lies in the way that it combines multiple information visualization technologies into a single, tightly integrated information management and analysis environment. While other commercial products address individual aspects of complex problems in a stovepiped fashion, Starlight's comprehensive, integrated solution enables such problems to be addressed holistically. This approach creates a synergistic effect that enables information workers to explore and interpret information at unprecedented speeds.

In addition to its novel and powerful approach to visual information analysis, Starlight incorporates several other features that distinguish it from the competition. First, Starlight includes an integrated information preprocessing system, called the Starlight XML Engineering Environment (XEE), capable of performing a range of information collection, conversion, restructuring, and enhancement operations. XEE's capabilities include functions such as automated named-entity extraction from text, date/time normalization, and text categorization and summarization.

Solving Many Problems

Starlight is the ideal tool to address a variety of problems in different domains. Current applications include government intelligence, computer forensics and network intrusion, law enforcement, and web analytics.

Starlight can help companies protect and promote intellectual property through analysis of information from patent collections, web searches, research papers, and news service monitoring. Companies considering investments in intellectual properties need to be assured that their ventures are sound, that their approach is leading edge, and their technology is viable and mainstream. This type of challenge is an excellent fit for Starlight's capabilities.

Starlight enables users to work alone or in collaboration with others, either at individual workstations or in a group presentation setting.

The U.S. Army's Intelligence and Security Command is using Starlight to perform "all-source" intelligence analysis. Starlight's information integration capabilities make it uniquely well suited to analyzing the contents of complex, multisource intelligence collections. With its integrated information extraction and geo-spatial analysis tools, Starlight users can quickly discover the "who, what, when, and where" aspects of complex, dynamic situations.

Protecting the homeland is paramount after terrorist attacks on September 11 on the World Trade Center and the Pentagon. Starlight's ability to sift through mountains of data provides analysts with a valuable tool to trace and identify terrorist activities and help prevent possible enemy attacks on U.S. soil.

Computer network security has become an increasingly pressing issue for many organizations. Starlight can enable network analysts to quickly achieve and maintain an in-depth understanding of network vulnerabilities and security status.

The Federal Aviation Administration is using Starlight to promote aviation safety by analyzing the hundreds of reports of incidents and accidents. Also, one of the world's largest engineering and construction companies plans to employ Starlight in bid and proposal management. The objective is to achieve intelligent bidding by continuously analyzing important factors that may impact projects that a company is seeking.

About PNNL

PNNL is a U.S. Department of Energy Office of Science laboratory. PNNL's mission is to deliver science-based solutions to DOE and the nation through the outstanding research and development capabilities of its staff, excellence in operations, and high-value partnerships. Located in Richland, Wash., PNNL has approximately 3,800 researchers and staff.

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