The story behind the world’s premier multidisciplinary citation resource

The year was 1996. The U.S. National Commission on Libraries and Information Science reported that only 44.6% of the public libraries were connected to the Web. Dr. Ian Wilmut and his team created Dolly, the world’s first sheep cloned from adult cells. And OhioLINK, a leading-edge library consortium, asked Thomson Scientific to partner with them in developing intranet access to the ISI Citation Indexes.

This partnership brought about much more than a customized solution for a valued customer — it signaled the beginning of a new approach to searching for research information. The intranet solution for OhioLINK quickly developed into the premier Internet resource Web of Science. One of the first subscription-based products on the Web, Web of Science took full advantage of recently developed linking technology to unleash the unique strengths of citations and cited reference searching.

Now, researchers could use citation data to its fullest potential as they searched multiple years of multidisciplinary data backward and forward in time and discovered the connections between ideas, authors and papers. Straightforward queries and quick, comprehensive results became the new standard for anyone with a Web browser and Web of Science access.

Today, in 2007 at 10 years old, Web of Science is a key part of the integrated ISI Web of Knowledge platform. Continual innovation spurred by customer demand has made it the starting point for millions of fast, easy searches. Along the way, Web of Science has also become a repository of powerful search, analysis, and bibliographic management tools, making it the heart of a responsive research solution that yields precise information for librarians, scholars and researchers worldwide.
The purpose:

Using the Web to deliver the full power of citation databases

When the Ohio Library and Information Network (OhioLINK) first broached the idea of developing intranet access to the *ISI Citation Indexes*, nobody imagined it was history in the making.

At the time, the consortium subscribed to the magnetic tape format of the *Science Citation Index*, *Social Sciences Citation Index*, and the *Arts & Humanities Citation Index*. Multi-year searching was possible — but only through a library's proprietary network or online vendors. Librarians or information specialists conducted searches for researchers because access to the information was, by today's standards, complex, cumbersome, and costly.

Although there were few commercially available subscription-based products on the Web, the team soon saw an opportunity to create a revolutionary Internet information resource. "OhioLink was looking for delivery of citation information in a way that had never been done before," notes Keith MacGregor, Executive Vice President, Academic & Government Markets. "We saw this as a unique opportunity. It was the first time that searching could be brought directly to the end-users in such an easy-to-use interface," says John A. Adams, Director, Product Development, *ISI Web of Knowledge*.

The challenge:

Getting up to speed

Although the *Web of Science* approach was revolutionary, it was based on another novel concept developed in the 1960s by Dr. Eugene Garfield — cited reference searching. Dr. Garfield used a hyperlinking concept to develop the original *Science Citation Index* in 1964. With the advent of the Web as a search tool, technology finally caught up with Garfield's innovation, and researchers at all levels could find and easily link to the connections within scholarly literature.

The development team soon realized that *Web of Science* would require a unique search engine — one that could let users quickly search multiple years of data and multiple disciplines, while using cited reference searching to its full potential. Speed was of the essence, and in a matter of a few months a proprietary search engine was developed. "This new search engine was developed for a very special purpose," said Sandro Cifelli, Vice President Software Development, Academic & Government Markets. "It was much faster than anything else we had worked with, and completely tackled the challenge of citation searching."

When *Web of Science* was launched for intranet and Internet use in April of 1997, it was the leader in a new search paradigm. Before that time, librarians spent a great deal of energy generating focused, highly targeted search queries. The burden was on the librarian to pinpoint the exact information needed.
As time went on, the burden shifted to the system. Because Web of Science made information more accessible, anyone could construct a search — not just a librarian or other expert searcher. It became possible for users at all levels of experience to start with a simple, general search and then refine the results to find just what they want — and find it fast. Capabilities expanded — and expectations rose accordingly. As Kathy Borton, Manager, Product Design and Documentation, says, “Times have changed. Today’s products need to be ‘walk-up usable.’ They need to be like ATM machines.”

The foundation:
Setting standards of quality and relevance

Web of Science offered more than speed — it offered reliability and high quality content. “What separates Web of Science from other available offerings? The foundation of quality and selectivity … the organization and classification of highly relevant data. The Web is the most recent delivery mechanism, but the information, the standards that guided its selection and compilation — that is the foundation and always will be. These standards existed way before 1997 and Web of Science.” states MacGregor.

John Adams agrees: “Being able to rely on your results is essential. The biggest number of search hits or the biggest number of Times Cited articles isn’t necessarily the best result. A researcher needs to know if the results are from influential authors and publications — if the cites are from scholarly journals. After all, if some irrelevant journal cites an article, is it really an indication of influence? With Web of Science — and ISI Web of Knowledge — you know you’ll get relevant results.”

The innovations:
Meeting — and exceeding — customer expectations

Thomson Scientific continuously enhanced Web of Science with a host of updates to meet changing technology standards. Web of Science became an integrated, information solution that enabled users to link to other Thomson Scientific resources as well as to external databases and Web sites. Award-winning tutorials helped users take full advantage of all the capabilities. In fact, customer expectations, fueled by the endless possibilities of Web of Science, were the key to many improvements.

“One thing now taken for granted that was then unique,” Keith MacGregor says, “is linking from one database to an external database. It was brought about by customer interaction and demand. We began to link to other databases, to full-text links, to library links that customers needed. Customers showed us the way to go — customers took the lead. Web of Science is the result of customer-focused innovation.”

The next step:
Integration into ISI Web of Knowledge

Each Web of Science upgrade widened its capabilities as well as the scope and opportunity for discovery. As Web of Science continued to evolve, it led naturally to the next logical step — the comprehensive research platform ISI Web of Knowledge. Customers said “I wish I had one place to go for all the information I need”. And ISI Web of Knowledge was the response.

Now users could simultaneously search journal articles, websites, patents, proceedings, and many more types of data essential to the research process. A common interface and powerful tools made searching, analyzing and managing information a seamless, integrated experience.

“Web of Science was now part of a fully integrated research experience,” said John Adams. “It was really the catalyst behind the development of ISI Web of Knowledge. It set the tone and established the foundation. A lot of tools that were first offered on Web of Science — the Analyze Tool and Refine Results are good examples — are now available throughout the whole ISI Web of Knowledge platform. Web of Science set the standard.”
“We continue to work to make Web of Science and ISI Web of Knowledge relevant to researchers, librarians and other users worldwide...to make information easy to get and understand.”

— Keith MacGregor, Executive Vice President, Academic & Government Markets

The result:

A powerful workflow solution that anticipates and meets today’s research needs

As Web of Science reaches its 10-year anniversary in 2007, it continues to evolve through ISI Web of Knowledge. Throughout the years, an abundance of new content and features have given searchers innovative and effective options for finding the information they need.

In 2004, the Analyze Tool provided users with the opportunity to mine important information out of their bibliographic searches to discover trends and patterns and identify top authors, institutions, journals and more. In 2005, Century of Science extended users’ access to critical scientific data back to 1900.

In 2006, the Citation Report provided users with yet another powerful analytical tool, letting them easily capture citation activity and identify trends. And a suite of authorship tools and the integration of EndNote® Web made it easier than ever for searchers to refine and manage their results, quickly pinpointing the information they need.

What lies ahead? Later in 2007, ISI Web of Knowledge will introduce a totally new approach to research. Not just another upgrade, this new interface provides easy access to the features customers have told us they need the most. Intuitive enough for a novice and powerful enough for a professional, the new ISI Web of Knowledge brings all users novel and dynamic ways to find, analyze and share their research.

TAKE THE NEXT STEP

To find out more about how Web of Science and ISI Web of Knowledge can enhance research at your institution, contact a Thomson Scientific representative at the office nearest you.