

CAS Turns 100

by BARBARA BRYNKO

It's not every day that a company celebrates its centennial. Such a milestone is rare in business and nearly unheard of in the information technology industry.

So kudos are in store for Chemical Abstracts Service (CAS), a division of the American Chemical Society (ACS), which has survived the ebbs and flows of the economy, technology, and time. In 2006, CAS reported \$270 million in revenues and in 2007, a history that spans an entire century.

CAS has long been recognized as an innovator that keeps pace with the needs of the science community, the publishing field, and the changing information technology. CAS set up its headquarters in Columbus, Ohio, on 55 acres next to The Ohio State University's Columbus campus in the 1950s. CAS's home base now houses about 1,300 employees and nearly half of them are scientists in the fields of biology, chemistry, and information science. The company also has operations in Europe, Japan, and Asia, continuing a 100-year tradition of global reach. Today, the quest for "globalization" may have just made its way to the top of many other corporate agendas, but CAS has "been there and done that" for more than a century. Even the first issue of *Chemical Abstracts (CA)* that was published in 1907 featured summaries of international literature.

The Secret Formula

So what is CAS's secret to success? "I'd have to say it's the kind of people we hire," said Robert J. Massie, CAS president since 1992. "We've been blessed for



Chemical Abstracts Services' complex in Columbus, Ohio

100 years with people who have been drawn to our global mission."

"The company focused on quality and seriousness of purpose, which is rolled into our DNA here," said Massie. "We have an unusual mix of people who are drawn to our mission as stewards of unique scientific assets serving the global scientific community."

Massie is a prime example of such stewardship. When he joined CAS 15 years ago, he brought a background of rich experience with him: president of The Thomson Corp.'s Gale Group, senior executive with Torstar Corp. (Canada's largest newspaper/book publisher), management consultant with McKinsey and Co., international attorney at Covington & Burling (Washington, D.C.), and even attorney at a law firm in Tehran, Iran, during the end of Mohammed Reza Pahlavi's reign.

The same stewardship holds true throughout the ranks at CAS. Longtime staffer Ida Copenhaver, now director of editorial coordination, started working at CAS more than 35 years ago. She remembers the days of carting "baskets of hard copy" from one department to an-

other, dictating and translating content, and having a central keyboarding area. "Electronic publishing ushered in a whole different way of doing things," she said. As she has seen firsthand, rolling out new technology means training staff properly and giving them a chance to adapt to new hardware and software. One of the best aspects of her many jobs at CAS over the years is the challenge that each one provided and the opportunity to try out plenty of new technology.

"Today, we also have a very capable senior management team," said Massie, "a mix of business executives and scientists." Likewise, some of CAS's key figures were true innovators in their time: G. Malcolm Dyson, CAS research director from 1959 to 1963, brought the idea of a registry system for substances to fruition; Fred A. Tate, CAS assistant director from 1961 to 1980, pushed the technical development for the company; and Dale Baker worked his way through the ranks starting as a part-time office boy in 1939, becoming director in 1958, and finally retiring in 1986. He helped CAS successfully transition from a subsidized operation of ACS to a financially self-

sufficient division, enter the computer age, and become a leader in scientific information. According to Massie, Baker was “a man of big ideas and a personal touch.”

Perhaps some of this legacy of stability can be traced back to ACS, the company that has always taken a long-term view of publishing. Being a division of ACS basically kept *CA* afloat for the first 50 years, according to Massie. *CA* was a money-losing proposition, but ACS knew it was investing in quality services. First and foremost, *CA* was a journal of the ACS. It began life as part of *Journal ACS*, and it became part of the high-quality journal atmosphere, he said. In 1956, *CA* became CAS, an operating division of the ACS, and has been self-supporting ever since.

A Long List of Innovations

During its first publishing year with William A. Noyes at the helm in 1907, *CA* included nearly 12,000 abstracts that covered international literature. In 2006, *CA* hit the 1-million mark for published abstracts.

CAS's document records now total more than 25 million. More than 3 million organic and inorganic substance records were added to the CAS Registry database alone, creating a total of 30 million-plus identified molecular substance records, 1.5 billion predicted and experimental properties, and nearly 12 million reactions. There are 27 million bibliographic records from journal and patent literature and more than 170 million citations.

CAS has also recently introduced several patent-related enhancements. It completed its implementation of the IPC (International Patent Classification) Reform enacted by the World Intellectual Property Organization for its patent classification system to help users search patent information more effectively across countries, including those from China, Japan, and Korea.

By the end of 2006, SciFinder Scholar was installed at more than 1,300 universities in 53 countries. CAS has also acquired rights to 19th-century content

of *Chemisches Zentralblatt* records, which adds thousands of records to CAS's collection prior to its official 1907 publishing debut.

CAS's Top Four Milestones

Massie pointed to four milestones in the company's history, each of which ad-

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ded to the foundation and development of the firm. First, “the American Chemical Society needed a reference work to highlight the research being done by American and European scientists,” he said. That's essentially how CAS was born.

Second, in the 1960s, CAS pioneered the use of electronic databases. The company took the lead in credibility in that arena. “This was the first electronic database that was used as a publishing tool,” he said.

Third, CAS developed its online search service. CAS recognized that “as a publisher, we needed to go online and make direct contact with our customers,” he said. As a scientific organization, ACS understood the fundamentals of this business situation.

Fourth, in 1984, STN was designed for information professionals. The organization was able to reflect the changing needs of the online industry, he said. In 1965, when the CAS Registry was launched, it made it possible to assign unique registration numbers, actually the largest substance identification system around. When ACS and FIZ Karlsruhe signed an agreement in 1983 to form an international online network, STN (science and technology databases covering chemistry,

life sciences, engineering, and patents) was launched a year later. In the 1990s, searching in scientific databases was “exponentially popular.”

By 1995, SciFinder gave scientists direct access to CAS databases without a need to learn a command language. And more innovations followed: SciFinder Scholar (SciFinder designed for academic institutions), STN AnaVist (interactive analysis and visualization software to view information in scientific literature and in STN databases), and STN Easy (quick, easy access to the basics).

Still Growing After All These Years

CAS is expanding its global reach, said Massie, noting that 50 percent of CAS's revenues come from outside the U.S. The market has changed with China, India, and Asia, but the continuity remains with English as the preferred language of science.

Not long ago in the 1940s and 1950s, the CAS staff edited and indexed abstracts on index cards manually. By the 1950s, CAS set up a Roto Table to give editors quick access to indexes. Long before direct online input of data, the Mohawk 1181 data recorder stored substance names on magnetic tape as each was typed; direct online searching from CAS arrived in 1980, when CAS ONLINE was created to let scientists and researchers search the CAS Registry database with the Hewlett-Packard 2647A terminal. Today, it's all push-button ease.

In honor of the occasion, CAS is taking a little time to rest on its laurels. It was named a National Historic Chemical Landmark, which will be officially awarded this June. And Massie is taking some time to assess the first 100 years and contemplate company strategy for the next 100 years.

“If we look back 10–12 years, we experienced stable growth that improved our service and content,” he said. “The question remains how to invest wisely for the future. This is our focus now.”



1907

Chemical Abstracts begins publication with editor William A. Noyes Sr.

Austin Patterson/Editor



1909

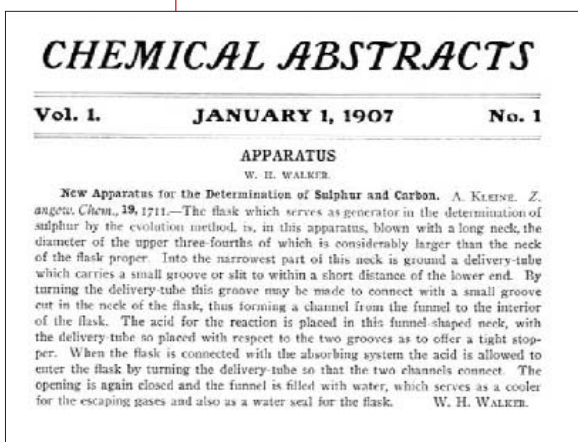
Offices move from the University of Illinois to The Ohio State University in Columbus, Ohio

1956

Chemical Abstracts Service (CAS) becomes a self-supporting division of the American Chemical Society, with E. J. Crane as first CAS director



Manual indexing



Offices in the McPherson Chemical Laboratory



Dale Baker/Director



1961

CAS introduces Chemical Titles, the first periodical to be organized, indexed, and composed by computer

New building at Ohio State



Computer output



1965

CAS Chemical Registry System begins operation

Mohawk 1181 data recorder



1984

CAS works with Germany's FIZ Karlsruhe to introduce STN, the first global database network for scientific and technical information



Offices on Olentangy River Road



HP 2647A terminal

1980

CAS introduces CAS ONLINE, with online access directly from CAS



1995

CAS introduces SciFinder, offering direct access to electronic information by scientists

2005

CAS introduces CAS Mobile for real-time interaction with CAS information with wireless handheld devices



Robert J. Massie

2007

CAS celebrates its first centennial