

# Revving up a smarter search engine

Software screens junk,  
locates related info

By Mary Jane Credeur  
STAFF WRITER

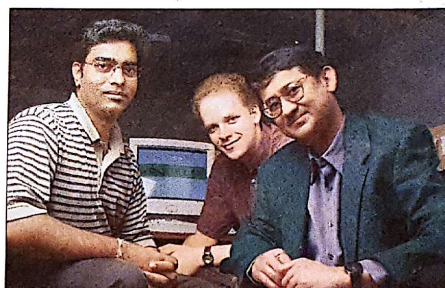
Former University of Georgia students and their professor are hoping to sell large businesses on an intelligent search engine that can scour the Internet and find only relevant information.

Professor Amit Sheth has been working on the technology behind his "semantic Web" engine since the mid-1990s, and last year received a patent to protect the software behind it.

"It can give meaning to the data on the

Internet, and determine what the user means when he searches for terms," said Sheth, who in mid-1999 created a company called **Taalee Inc.** with the help of former students. "The basis of semantics is not just the object, but its relationship with other things, and that is how the human brain works."

For example, if someone were to search for the words "President Bush" using the Taalee search engine, the software would prompt the user to select which Bush — the current or former president — he or she is searching for. It would offer sites with information not only on the president of the United States, but also First Lady Laura Bush, twin daughters Jenna and Barbara, and



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Florida Gov. Jeb Bush, the president's brother. The software also would know that George W. Bush is the former governor of Texas.

Sheth's patent is the first of its kind

**Team Taalee:** Yash Warke, left, Clemens Bertram and UGA Professor Amit Sheth of Taalee Inc., now Voquette Inc.

issued for semantic-search technology. The concept of semantics — attaching meaning to search terms based on their relation to other words that precede or follow them — is so popular that UGA recently introduced a course on it that is taught by Sheth.

Shortly after Sheth incorporated

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Taalee (pronounced tah-LEE), the founders raised \$2.4 million in venture funding led by a California firm and attracted a handful of customers in specialized industries, including NASA and a government intelligence agency which is using the engine to run searches on pilots and flight crews to determine whether they have been convicted of felonies or linked to violent organizations.

Taalee, brought in more than \$1 million in revenue during 2001, Sheth said. After several failed attempts at raising further venture capital from local investors, Sheth and co-founder Ajay Chopra, chairman of California video storage and distribution firm **Pinnacle Systems Inc.** (Nasdaq: PCLE), considered selling the company.

Several months ago, Taalee was acquired by a California audio/video software maker called **Voquette Inc.**, which had been a Taalee customer for more than a year.

The combined company now operates as Voquette and is run by CEO Phil Monego, who was the first CEO of **Yahoo! Inc.** Monego previously ran interactive TV company **NetChannel Inc.**, which was sold to **America Online Inc.** in 1998 for \$25 million in cash. Before its merger with Taalee, Voquette had raised \$23 million in venture capital from a slew of investors including California investors **21VC Partners** and **IMinds Ventures**, **Citigroup Investments Inc.**, and Taalee's earlier investor, Redwood.

### Smarter searches

The Taalee search engine works by using reliable sources like Congressional Web sites and news wires to gather its semantic data profiles, which are also called metadata. As soon as a person in its database changes positions — such as former First Lady Hillary Clinton becoming a New York senator — the software automatically updates its 'profile' on that person.

The engine also works for business news by creating corporate profiles with information lifted from financial data sites and earnings reports.

"It knows who is the CEO of Intel [Corp.], who is on the board, how the stock is doing and that the company is a semiconductor maker," Sheth said.

Compare this with today's search engines like **Google Inc.** and **Yahoo!**, which conduct searches based solely on text. A search for a vague term such as "white house," for example, will generate returns for the presidential residence at 1600 Pennsylvania Ave., house-painting tips, spoof sites and dozens of bed-and-breakfasts across the country. These returns are based on the categorizations that hundreds of content editors for Yahoo! and Google manually create for each site on the Web.

"That's a whole lot of wasted time and manpower," said Yash Warke, a UGA grad who is now director of prod-

uct marketing for the company. "If a specific word doesn't appear in an article, that site won't generate a hit. You end up missing a lot of relevant articles."

Traditional search engines cannot distinguish between proper nouns, nor can they distinguish between different forms of a word — like a palm tree or the palm of one's hand.

"Google does not understand that some words are things and other words are names of people, and that the same name can mean 10 different things or people,"

said Sheth, who now serves as chief technology officer of the company.

### Limited applications

But Taalee's software is far from replacing plain old text search engines anytime soon.

The Taalee engine is limited in the sources it searches for news, and would not be practical for finding anything outside mainstream media. For example, searching for information for a sixth-grader's science report or trying to find Web sites for specialty furniture shops would confuse the software — neither of these subjects have necessarily had media coverage.

In fact, the software may be too limited in its reach to transform general use of search engines, says Internet expert Graeme Payne, of **Ernst & Young LLP's** technology practice.

"On the Web, there is no nomenclature that everyone has agreed to, and you have to consider the human element," Payne said. "Humans can take huge amounts of data from all these different points and quickly extract from it the items that we need. Software cannot do this."

Payne points out that current methods of Web searching certainly have their flaws. For one thing, it is impossible to keep a completely accurate and up-to-date catalog of actively maintained sites. And some engines, like Yahoo!, allow owners of sites to pay fees for higher placement on search returns.


"That's like selling space at the front of the dictionary to the highest bidder," Payne said.

Yet Sheth believes the Taalee engine can transform certain sectors, such as broadcasting or print media companies that serve large markets and have huge amounts of data that is archived.

There are no immediate plans to make the Taalee engine, which costs between \$10,000 and \$1 million or more, available to the public like Google and Yahoo!, although Sheth says that may be a possibility in the future.

Voquette executives are now trying to raise another round of venture funding in the \$4 million to \$6 million range. The company plans to hire 10 new sales and marketing employees in the coming months, which would bring the staff to 30.

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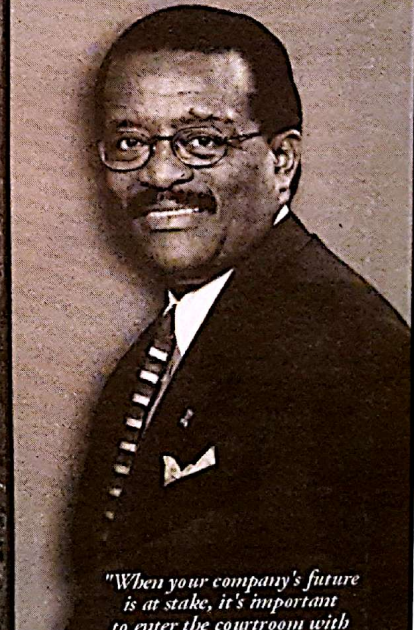
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