Illinois' Internet edge

Local labs boost next-generation network

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SUN-TIMES WASHINGTON BUREAU

WASHINGTON—Imagine walking into a room that transports you into a three-dimensional space with a car dealer off in Europe and your newest model in front of both of you.

Peek into the trunk and point out a seat design you don't like. The dealer points back.

It's no "Star Trek" dream and such three-dimensional communications could be available in homes in a few years. The technology is part of the rapidly evolving high-tech wizardry that has placed Illinois at the forefront of Internet research.

The University of Illinois was instrumental in developing the original Internet, and experts in the field in the Chicago area want Illinois to preserve that leadership as the technology continues to expand into areas once left to the imagination of science fiction.

The amazing room of virtual reality, called an "immersion cave," was developed at the University of Illinois at Chicago. In a modern version of Alexander Graham Bell's first phone hookup, the UIC campus last month hooked up with caves in Amsterdam and Tokyo and sites across the United States.

Industry took quick advantage of the invention. Three-dimensional caves are now used by Caterpillar Tractor to design earth-moving equipment in Europe and by General Motors to shape car interiors.

Virtual reality rooms popping up around.

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Illinois ahead on Internet

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the globe are among the first applications of high-tech research developed in the Chicago area and the Midwest. Other uses include long-distance teaching.

Once the crossroads of rail transport and now the nation's busiest air traffic hub, Chicago is becoming the center of communication research and high-performance networks. One priority is development of a next-generation network that will be faster, more reliable and carry more data.

"Chicago and Illinois are quite advanced in the next-generation Internet," said Mortenza Rahimi, vice president for information and technology at Northwestern University. "We have an advantage that can't last forever. A tremendous amount of research will be needed to develop the next-generation Internet, and it could be done in Illinois rather than somewhere else."

Recognizing "the Midwest is the heartland of computer research," Sen. Dick Durbin (D-III.) plans a January forum in Chicago for the Illinois congressional delegation. Researchers will demonstrate the technology for lawmakers and take them into the cave.

"Now whether the data gets through depends on whether my 10-year-old son decides to advertise his sailing club to thousands of people," said Gregory Jackson, head of information technology at the University of Chicago. "We may have to wait for him."

To ensure continued research, federal officials helped U.S. labs connect with a 5,600-mile fiber-optic cable network called vbNIS, for the very high speed Backbone Network Service. Jumping in the game, Chicago universities and Ameritech created the most potent regional hookup in the nation, the Metropolitan Research and Education Network.

In addition to now having the largest regional high performance hookup with vbNIS, Chicago also has the largest Internet exchange point in the nation and the federally designated U.S. connection point to high-performance networks overseas.

Through the federally funded STAR*FAP (Science Technology and Research Transit Access Point), Chicago hooks up with Canada, Japan and Singapore and expects soon to be connected to research networks in Taiwan, Norway, South America, Africa, China, Africa and European nations.

Mark Luker, who directed the federal program for researching the next-generation network, said Chicago has "a real richness of people with networking experience."

"There's an edge in the Midwest but they have to keep scrambling to keep it," said Luker, who just left the National Science Foundation.

"It's a rapidly moving competitive field, and people need to work hard to keep up. It's just as easy now in Asia as in Silicon Valley to hook up."