

More businesses embracing use of virtual reality

By JAMES HANNAH
THE ASSOCIATED PRESS

FAIRBORN, Ohio

The pillars glide by as you float through the courtyard of an ancient palace. Moments later, the world turns blue as you slip along the ocean floor and poke through the Earth's crust in search of oil.

The journeys take place in Room 278 at the Joshi Research Center, a data-crunching, virtual-reality hub where visitors are immersed in a dizzying array of computer-generated 3-D images.

Long a darling of the military, aviation and video-game industries, virtual reality is being embraced by more businesses as the falling cost of computer power makes it more affordable.

Manufacturers of farm equipment, car seats, mufflers and other products have joined automakers and aircraft manufacturers in using the technology to speed up and improve product design, train workers and configure factories and stores.

The \$2 million Vis Lab at the Joshi center opened in October at Wright State University just outside Dayton, allowing businesses to outsource virtual-reality work without having to buy the technology themselves. Companies pay \$1,000 a day to use the lab and its high-powered computers.

The floor of the Gulf of Mexico floats in the air there on a screen 8 feet by 14 feet, about the size of a small billboard, awash in the glow of a deep-sea blue. It twists and turns, revealing cracks and fissures. Then it nearly pokes the viewer in the eye, or seems to.

A Houston energy company this year will feed seismic data into the center's computers. The company will sink virtual probes through the virtual crust looking for salt domes that may hold oil deposits. That could give the business an idea of where the oil is — or isn't — and save millions of dollars in drilling costs.

In virtual reality, high-performance computers connected to projectors throw alternating left-eye-right-eye images of a 3-D object on a large screen in a way to create depth. Viewers wear specialized light-polarizing glasses that synchronize the images to complete the 3-D effect.

In immersive visualization, images are projected on all four walls, the ceiling and the floor. As viewers move and turn their heads, the images change to create the illusion of walking or floating.

"It's reaching a level of maturity," said James Oliver, director of the Virtual Reality Applications



AP PHOTO

Troy Cobb sits at the computer controls of the 3-D room at the virtual-reality lab in the Joshi Center at Wright State University in Ohio.

Center at Iowa State University. "And you can get a very compelling virtual-reality system without having a huge, huge budget."

The center at Iowa State has been used to lay out the floor plans of new factories for maximum efficiency and to design tractors, mechanical cotton pickers and other farm equipment.

"When you stand in one of these immersive rooms, it's as if you're standing in front of the vehicle itself," Oliver said.

Farm equipment maker Deere & Co., based in Peoria, Ill., is using virtual reality at the Iowa center and its own labs to test-drive products not yet built and make sure the equipment will be easy to maintain.

"These experiences help identify design problems with products or work environments that traditionally might not have been noticed until prototypes were built," company spokesman Ken Golden said. "Our vision in VR is to have only one physical build of our products before we move into production."

Mechanical simulation, which is used, for example, to predict the crashworthiness of a new car design, is a \$1.5 billion business and is growing at 10 percent to 12 percent a year, said Marc Halpern, research director at Gartner Inc. He says using virtual reality is less expensive and quicker than building and testing complex prototypes.

Virtual-reality systems gained popularity in the 1980s, but they usually required clunky headsets that produced fuzzy images and a stuttering effect as the computers struggled to spew out the data necessary to create the effect.

Now, advancements in projectors, computer software and graphics cards can produce higher-resolution images, and the computer power needed is cheaper.

Safety first

Automakers working to develop pre-crash systems

By KEN THOMAS
THE ASSOCIATED PRESS

DETROIT

Called the Kanagawa project, automakers in Japan are studying a system that alerts drivers to the presence of children in a busy urban neighborhood.

As part of the experiment, Nissan Motor Corp. is placing bracelets on young children that relay signals to vehicles in the area. Drivers passing through are told, "Children nearby, please be careful."

The Nissan project, like others in the auto industry, reflect the increased focus on developing ways of preventing crashes and fatalities. From the stages of the North American International Auto Show, new "pre-crash" safety technologies are emerging that target the crucial milliseconds before a crash or help drivers avoid the crashes in the first place.

"As we go forward in the safety area, pre-crash technologies are the next big area," said Robert Yakushi, Nissan's director of product safety and environmental.

In the United States, more than 43,000 people die annually on roadways — the equivalent of an airplane crashing every day with nearly 120 people aboard — and fatality numbers have remained largely stagnant for the past two decades.

Safety officials have improved restraint systems such as seat belts and air bags to the point that many believe more research should be focused on the pre-crash systems that help tell the driver and the vehicle when a crash is imminent.

In addition to the basic restraints, most vehicles now



AP PHOTOS

Ford Motor Co. is experimenting with new safety features, including a four-point harness system, top. The system also would include a shoulder-harness airbag, above.

have antilock brakes and automakers have been putting anti-rollover technology such as electronic stability control on vehicles in recent years. The government has proposed mandating ESC on all new vehicles by 2012.

"Safety is not a static concept and our approach to improving it cannot be static either," said Transportation Secretary Mary Peters during a visit to the auto show on Monday.

Reflecting the advancements, Peters announced plans to upgrade the consumer crash test program to take into account ESC, lane departure warnings and other technologies.

Safety remains a competitive issue for manufacturers and a major selling point at dealerships. A recent poll conducted by AP-AOL Autos found that 21 percent of consumers wanted side air bags as an option, the most popular choice, followed by 20 percent seeking antilock brakes.

The telephone poll of 1,004 adults was conducted Dec. 19-21, and the margin of sampling error was plus or minus 3 percentage points.

In Detroit's auto show, the interest in advanced safety measures was apparent.

Volvo Cars introduced an XC60 crossover concept with a radar system that monitors vehicles about 20 feet in front

of the car. When a collision is likely, the technology helps the driver avoid a rear crash by automatically activating the car's brakes.

Volvo, a division of Ford Motor Co., is expected to introduce the safety technology on vehicles in two years and the upgrades could help reduce whiplash injuries, said Fredrik Arp, Volvo's president and chief executive.

DaimlerChrysler AG's Mercedes-Benz division offers advanced safety features on its ultra luxury vehicles, the S-Class. One uses long-range and short-range radar to avoid crashes by automatically hitting the brakes if the driver fails to stop in time.

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