

● **MYRON KRUEGER** admits he is sold on the idea of VR - it definitely works, he says. The public and the technical community like it - "It has already changed how people think. I have long touted it as a **CULTURE-DEFINING TECHNOLOGY**. Eventually, it may well become that".

Yet there are big problems. One is that equipment is not user-friendly enough. People who use it are still **GOGGLED, GLOVED, SUITED AND TETHERED** - hardly a completely natural experience.

"The current headmounts certainly distance you from the world that they portray as well as from your local colleagues. They make you look so foolish that there are many people who would not use it if the technology were free."

There are problems with the resolution of the current goggles and the glove is not ideal, he said. Other devices are still in preliminary stages and as yet are not satisfying.

The greatest strength of the current technology is that people can turn their heads to look around the graphic world in a natural way - and the greatest weakness is that they cannot move their bodies around the world as naturally.

Sometimes the experience can be unpleasant. "That unpleasant real world experience - being lost - has been recreated in the graphic reality." It's possible to have one eye inside a building and another outside it - a pretty

uncomfortable feeling.

VR is still stuck in the world of the mouse, data tablet, joystick and trackball and, importantly, current head-mount systems are too slow - there is a delay between when you move your head to when the graphic world changes. "Making the experience immediate is not a peripheral issue. It is as central to VR as the frame rate is in film."

While VR will grow and evolve it may not immediately take off, Krueger says. It may face a VR winter - or it could slowly wend its way into the market in the manner of most technologies.

The field needs a good demo. It should allow an untethered participant to walk naturally around a graphic environment encumbered only by the head-mounted display itself. It should operate at **REAL-TIME SPEEDS**.

And the graphic world should be **FUN**.

Virtual Reality research has triggered a general interest in 3D activity. And while the future of head-mounted VR is still promising, it awaits a killer application. The ultimate display in everyday office environments will be a technology that fits the way people work with each other, rather than how they interact with computers.

"Until the head-mounted display can meet that standard it may be relegated to niche applications or entertainment where special clothing can be considered part of the drama."

Myron Krueger sees the VR world of multimedia as a place of practical but exciting applications. He has been right before...

**MYRON KRUEGER** has been described as a **computer visionary** who implements his predictions. Catherine Masters reports on his views on **Virtual Reality** and its problems now...

