



See how CMP helped Symantec Get There:



InformationWeek
BUSINESS INNOVATION POWERED BY TECHNOLOGY

Emotiv Focuses On Brainwaves To Control Computers

The company comes out of stealth mode with a developer's kit to help build products that use thoughts and emotions to control a computer instead of a keyboard or joystick.

By Michael Singer, [InformationWeek](#)

March 7, 2007

URL: <http://www.informationweek.com/story/showArticle.jhtml?articleID=197800715>

A start-up company with roots in the science and entertainment industries is making its debut on Wednesday with a software product that translates thoughts and emotions and uses them to control a computer instead using of a keyboard or joystick.

San Francisco-based Emotiv is coming out of stealth mode with three software developer kits and an initial focus on entertainment applications, such as video games. Other industries that could use the technology include interactive television, accessibility design, market research, medicine, and security.

Founded in 2003 by two scientists (Director of the Centre for the Mind and professor Allan Snyder and chip-design pioneer Neil Weste) and two technology entrepreneurs (Tan Le and Nam Do), the group said it saw a huge market for using brainwaves to control computers.

"People have tried to change the way we interact with computer games such as Dance, Dance Revolution and the wands used with the Wii gaming console," Tan Le told *InformationWeek*. "Though most interfaces, such as keyboards and controllers, are relatively basic and non-intuitive."

The developer kits include a lightweight headset with multiple sensors and a wireless transmitter that allows the wearer to roam around the room freely.

The company is expected to release more details about the project and show off working models at the [2007 Game Developers Conference](#) in San Francisco this week.

The company has great backing including \$6.3 million thanks to investors Technology Venture Partners (TVP), Epicure Capital Partners, and the Australian Federal Government.

Emotiv's executive team also includes chief product officer Randy Breen, who is a former VP and head of development at [LucasArts](#) and an executive at Electronic Arts; and VP of engineering Steve Sapiro, formerly of Intel, and chief scientist of Tektronix and CAE Systems.

In addition to Le and Do, Emotiv's board of directors includes Ed Fries, formerly of Microsoft, where he was a founding developer of Excel and Word and then the creator of Microsoft Game Studios and a co-founder of the X-box project; and John Murray, cofounder of TVP. Translating thought into action is harder than it looks. Approximately 100 billion nerve cells, called neurons, make up the human brain. These active neurons cause electrical activity, which can be observed using non-invasive electroencephalography -- or EEG.

Le said Emotiv's technology differs from other products in that it reads both conscious and non-conscious brainwaves.

"In the last three years, advanced mathematical models and improvements in computing power have also helped to increase

the significant processing techniques needed to unfold the workings of the cerebral cortex," she said.

Emotiv's developer kit is broken down into three key areas:

The Expressiv product can identify facial expressions so that characters can respond to the expressions of the player, such as smiles and winks.

The Affectiv software measures players' discreet emotional states and lets the game ramp up or slow down depending on a player's state of excitement or calmness.

The Cognitiv product focuses on a player's conscious thoughts, letting them move or manipulate objects just by thinking about an action, such as push, pull, lift or rotate.

"We are focused mostly on active thoughts only at this time, such as wanting to move a thing," Le said noting that creating interaction based on other autonomic thoughts such as hunger and fatigue are potential expansion areas. So far, Le said, Emotiv's software reads only specific thoughts and not random thoughts that can race through your brain. So if the phone rings during a game, your character on the screen is not likely to try and answer a phone before going onto a higher level.

Le said Emotiv expects to have consumer products based on its technology available in 2008 that will be available for gaming consoles and PC games.

High Availability Windows

Protect Any Server Application. Simple Automated Software Solution.

NoClusters.MarathonTechnologies.com

[Ads by Google](#) - [Advertise on this site](#)

Copyright © 2006 [CMP Media LLC](#)