

The gathering brainstorm

It is unregulated, untested, more dangerous than its proponents would have you believe — and soon to become even more powerful. **Mark Anslow** reports on the inexorable march of Wi-Fi

In early summer of 1997, computer scientist and former Dutch military radar engineer Vic Hayes joined the end of a long line of scientists and smiled at the camera. The shutter clicked, celebrating the official launch of the first international Wi-Fi standard.

Known officially as IEEE 801.11, what Hayes had created was a universally accepted way of linking up computers by using high-frequency microwave radio waves. Once connected, the machines could then share information, including internet access and email.

Originally designed to connect together cash-registers at checkouts, the ambitious scientist made no secret of his desires for the new technology. 'I see Wi-Fi being used for everything eventually,' he was quoted as saying, but not even he could have predicted how widespread his invention would become.

By 2008, experts predict that there will be 53 million Wi-Fi enabled devices in Europe alone. One in every five UK adults already owns a Wi-Fi enabled laptop, and 80 per cent of secondary schools in the UK have installed the technology throughout their buildings. McDonald's recently announced that free Wi-Fi facilities would be available in all its restaurants, and the growing 'Mu-Fi' initiative — where entire municipalities receive Wi-Fi coverage — has already made Norwich the UK's first 'Wi-Fi town'.

The technology is sold to the public as the ultimate convenience tool: it allows you to grab a coffee and check your email on the go, to print photos without using a wire or listen to music on speakers not even attached to a computer. In schools, teachers can already give lessons using Wi-Fi white-boards, and in

the near future hand-held Wi-Fi terminals will enable children to 'interact' with digital lesson. In the words of the technology's industry group, the Wi-Fi Alliance: 'Simply put, Wi-Fi is freedom.'

But freedom at what cost?

Wi-Fi appeared on our shelves without having to undergo any tests or safety checks whatsoever. This was partly achieved because Vic Hayes and his team developed Wi-Fi to use an unlicensed part of the radio spectrum — freed-up airwaves designed to encourage more widespread public use of wireless technology. As long as the technology met basic requirements on interference and compatibility, consumers were free to buy and use Wi-Fi devices as they and the manufacturers saw fit. In the UK, the spectrum used by Wi-Fi (2.4 gigahertz) became available for unlicensed use in 2000.

Denis Henshaw, professor of physics at the University of Bristol, finds it remarkable Wi-Fi-enabled equipment could have come to market without having to undergo any trials.

'If you are a drug company marketing a new drug, you have to go through years of testing to



