Universal broadband from on high
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GOT a broadband internet connection yet? Have you joined the swelling ranks of netizens who've realised that dial-up simply doesn't cut it? Talk to anyone who has replaced their 56Kbps modem with a high-speed cable or ADSL connection and they'll tell you there's no going back.

They'll liken it to moving from a Volkswagen Beetle to a turbocharged Porsche, or from black-and-white television to colour.

Broadband internet offers much more than dial-up services ever could.

As well as providing an always-on connection, it delivers graphics, streaming video and audio, and large files, in the blink of an eye.

Gone are the days of clicking an icon and then wandering to the kitchen to make coffee while you wait for whatever you've requested to appear on your screen. Happiness is broadband.

For many people, though, the dizzy delights of the broadband world are out of reach.

For those living somewhere not served by Telstra or Optus cables, or not connected to an ADSL-enabled telephone exchange, life is not so happy.

The good news is dependence on dial-up in such areas will not last forever.

There are some interesting wireless technologies, such as WiFi and the newer WiMax, that will extend the reach of broadband.

Bypassing traditional copper telephone lines, these technologies offer broadband speeds to just about anyone in a service area. Unfortunately, a lot of areas are not covered.

Then there is the option of satellite. Sitting in geostationary orbit above the equator, these birds deliver broadband speeds to users almost anywhere on the planet. Such services have two downsides, though — cost and delay.

Competition and government regulation have led to some attractive packages for users in remote areas, the cost of two-way satellite internet connections is high, and heavy users can expect a hefty monthly bill.

Also, because satellites sit so high above the earth, the time taken for signals to bounce to and from them results in delays.

This can be annoying when doing things like videoconferencing or playing networked computer games.

In future, broadband connections could be delivered by another means.

Experiments are under way on using everything from slow-moving aircraft to hovering blimps to bring broadband internet to anyone who wants it — at an affordable price.

Serving as a network hub in the sky, these services relay signals between ground-based stations and users.

Because they're easier to launch than satellites, costs are reduced and lower operating altitudes remove much of the annoying delays.
These craft may well fill a gap in broadband service coverage. One such service, backed by NASA, is called Helios. Its backers plan to use unstaffed planes cruising at altitudes of between 15km and 20km above the earth to provide cost-effective broadband services to entire cities and towns.

The designers hope the solar-powered craft will be able to stay aloft for more than six months, slowly circling a set spot and providing constant, reliable internet access across an area about 50km in diameter.

Operating at that height the craft will be out of reach of potentially troublesome weather patterns and will happily cruise with minimal human intervention.

Unfortunately, development plans for the craft hit a snag last June when a prototype plane crashed over the Pacific Ocean. However, scientists are convinced the concept will work.

A variant on the orbiting broadband service involves blimps parked over target areas and kept in place by solar-powered engines.

One early proponent of this approach, Sky Station International, appears to have run out of funding before it could put its ideas into operation.

However, the concept has a number of fans. The blimps would sit about 20km above cities and serve in much the same way as a very tall tower, beaming services to anyone within reach.

Blimps are very easy to launch, cost-effective compared with satellites or solar-powered planes, and could sit quietly in place for months, if not years.

Because most of the complexity associated with providing the broadband services is in ground stations, orbiting craft could quickly be replaced without noticeable interruption to users.

Most plans allow for spare craft to be either in the air or ready to launch the moment a problem is encountered.

Such orbiting internet hubs will never provide broadband connections to everyone, but there is a role for them in getting services to people beyond the reach of traditional methods.

Supporters say such delivery services will augment, rather than compete with, the likes of cable and ADSL.

They may be years away from commercial reality, but pilotless planes and blimps could become a vital link in the global internet.