

# Service with a dial

Everyone wants to be on the Internet these days. Like mobile phones, getting connected is cheap; but it's important to know who will give the best service, and how much you will really end up paying. Wendy Grossman puts the leading access providers to the test

Computers seem to come alive when they're hooked up to others. A simple telephone call placed via a modem can put new worlds onto your screen and make your old computing days seem isolated.

## On-line basics

The Internet is a computer network: it's so named because it interconnects other computer networks. These include well-known commercial services, such as CompuServe, America Online (AOL), Delphi, and CIX, as well as government institutions, corporate networks and the British Joint Academic Network (Janet). When you hear about things like the World Wide Web, FTP, Telnet or e-mail, these are all applications which run on the Internet the way your word processor or spreadsheet runs on your PC.

There are essentially two types of Internet access: direct and gateway. A direct Internet service provider (ISP), such as Demon or Pipex, sells you a raw connection. Typically, it will supply you with software that will access, at the very least, e-mail, the Web and FTP. Better suites will include Telnet and

some kind of Usenet newsreader. A few will include useful but technical utilities like Ping (for testing connections) and Finger (for finding users on line).

Until recently, most commercial on-line services were gateway services. CompuServe, AOL, Delphi and CIX all offer Internet access via their own interfaces and machines. Sometimes this is an advantage. For example, CIX's Usenet gateway allows efficient collection of Usenet messages so you can read them conveniently offline; AOL builds its Web browser into the system so you can follow a topic of interest from internal AOL services to external Web sites.

These days, every service is rushing to integrate with the Internet, especially the Web. CompuServe is building direct Web access into its navigator software, and MSN revamped its entire service only months after its launch to remake itself as an Internet service.

Unless you want to do specific things – like set up your own computer as a Net site – the type of service you use doesn't really matter technically. Where you'll see a difference is in cost and ease of use. On-line services such as CompuServe typically give users a certain number of hours free and then charge for each

hour above that level. Direct ISPs, other than IBM's Global Network, normally charge a flat rate per month.

They can afford to do this because users pay for the link-up through their phone bills. Most direct ISPs now have pretty good national coverage, but you still have to pay for those long local calls. You still have to pay phone bills for those on-line services, too, but because they use their own systems, performance is usually faster, and most of them have utilities to make searching system-wide easy. The Internet is also developing such services, some of which are quite good.

One other concern is security. The Internet began as a way to connect five regional supercomputing centres in the US, so time on these very expensive machines could be shared by all the researchers in a region. This means that it was designed to make it easy to share, not protect, information.

Though many stories of Internet risks are exaggerated, you should, nonetheless, be as careful about the information you give out on line as you are in real life. The commercial on-line services and the IBM Global Network say their security is better because they use closed, proprietary systems rather than the open Internet standards.

## Current trends

When Demon Internet started in late 1992 with a charge rate of £10 a month, it set the benchmark for British ISPs. ISPs have in turn put pressure on the on-line services, which also have each other to compete with. The result is a lot of downward pressure on prices.

The growth of the Internet has also attracted the attention of the telephone companies. AT&T recently announced its Worldnet service in the US, and BT is slowly wandering into the consumer market in the UK.

Unless you're truly dedicated to supporting local business, or you have a local supplier that offers a truly excellent service or local call access in an unpopular area, you're probably going to be better off with a bigger company. On the Internet, speed is everything, which is sad because many feel that the small suppliers are the backbone of the Net.

The exceptions are the Irish Republic's Ireland Online service, which offered Windows-based Internet access as far back as 1993, and the Scottish Almac, which is similar to CIX (see the following page) and offers a strong conferencing system and ISP facilities. Also worth looking at for direct ISP service is Cambridge-based Cityscape, which started life reselling a Pipex feed but has recently been bought by Demon, and the London service Easynet, which supplies a feed to the Internet café Cyberia. We also like the PC User Group's service, which offers good technical help and good software that automates everything.

## CompuServe

CompuServe is the oldest and most steadily profitable of the commercial on-line services. Its headquarters are in Columbus, Ohio, and it is owned by US tax-preparation specialist H&R Block. Block announced plans this March to spin off CompuServe as a separate, public company.

CompuServe has the broadest range of services on the market. You can chat while watching text-based radio-style commentary on a live match in the tennis forum, play multi-user games, or hang out in any of the many UK forums. You can check stock prices, weather or AA Roadwatch; search (expensively) periodical databases; or scan the commercial news wires.

CompuServe is especially strong on technical support – almost every hardware or software manufacturer has a forum on the system. This means patches and upgrades are readily available. In addition, you can research a product with existing users before you buy it.

Besides all those internal services, CompuServe offers direct Internet access. The service makes it easy: you download its free Netlauncher package and it takes the dialer settings from your existing CompuServe Information Manager software installation. The company also offers a no-frills, cut-price, Internet-only service.

The one problem with CompuServe is that the service has expanded faster than its network. This is a common problem at the current industry growth rate, and CompuServe has promised an extensive upgrade to its network this spring.

**The broadest range of services coupled with reasonable ease of use. Strongly recommended as a first choice for professional and business users.**

## AOL UK

AOL UK is a newcomer to the UK, having started here at the beginning of 1996. Its US counterpart, America Online, has more than five million users. The UK service is jointly backed by the publishing conglomerate Bertelsmann and the US service. One disadvantage for users who like to use standard software,



whether Internet-related or general comms-based, is that AOL works only with its own client.

AOL is colourful but somewhat lightweight. Its focus is social: any user can set up a public or private chat room, and the list available in the evenings is extensive. To get to any of them, you call up a list and pick one. All services come equipped with chat facilities, so while you're competing with 74 other users in a trivia game, you can chat with them behind the scenes.

The information services are weaker. A number of publications, including *Entertainment Weekly*, *The Independent* and the *Daily Mirror*, have on-line archives and message boards. There are also entertainment listings from several cities, including London. We particularly like the service which will mail you news stories clipped by keyword – or did, until we found it filled up the mail box.

AOL signed several deals just before we went to press. One, with Microsoft, means that the default Web browser provided with AOL's own software will be replaced with Internet Explorer. In return, Microsoft will put AOL on the Windows 95 desktop, giving users the kind of easy access they have now to MSN. In addition, AOL has signed licensing deals with Netscape (for the Netscape browser) and Sun (for the Java programming language).

The big drawback with AOL is that its button-pushing ease of use masks some very poor design choices, especially in the mail and message board software. The company says these will be improved in the next version. But worse than these niggles is the absence of any offline reader facilities and no plans have been announced yet for their introduction.

**A social, rather than information, system; AOL is colourful and fun but it needs better – and especially automated offline – software.**



**CIX**

CIX, or Compulink Information eXchange, is the oldest electronic conferencing system in Europe. In late 1995, it added a direct Internet service. CIX's many thousands of conferences cover all sorts of topics, from hardware and software support to fishing.

The audience on CIX tends to be more technically oriented than most others, so you'll probably find that you have to do a certain amount of skipping over the computer jokes. But it is a very fast and efficient system to use, and the loyalty of its 'CIXen' has created a real community feel.

One important advantage with CIX is that users can set their own conferences, public or private; a number of businesses, trade associations and even political parties, use the system in that way.

The interface is text-based and can seem unfriendly at first. However, it is very flexible and experienced users can take advantage of an array of shortcuts and macro facilities. Most new users are accustomed to seeing CIX filtered through their offline reader (OLR). The best of these offer graphical interfaces that make most of CIX's facilities easy to use.

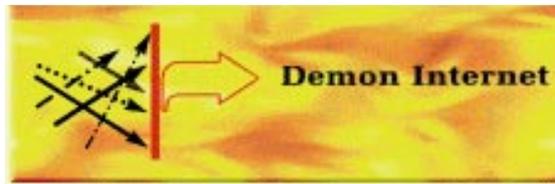
CIX has no gateways to other information services. But it does have text-based Internet access, which includes well-designed gateways to the Web, Telnet, Gopher search servers and other such facilities.

CIX also has a fast and efficient Usenet gateway which is supported by a number of its OLRs, making it very convenient.

The CIX Internet service can be bought separately or, alternatively, it comes bundled with access to the conferencing system. There are some differences between the two, notably regarding the local phone access.

CIX's conferencing system user base hasn't grown much in the past few years, but the company says that now it has redesigned its system to be scalable – part of the work that it carried out when it was developing the Internet service – it intends to market itself more heavily.

**The conferencing system is a strong cybercommunity with a lot of user loyalty; its best features are its speed and the open design that lets users set up their own conferences. The Internet service is competitive.**



**Demon**

When Demon opened its modems in July 1992, there were no ISPs in the UK serving the consumer market. Being first gave the company an edge, and it has always led the direct ISPs in size.

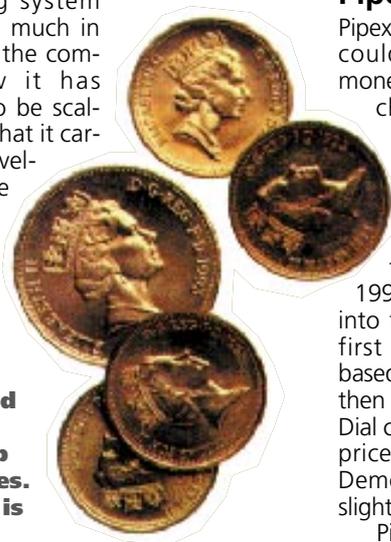
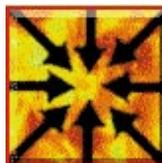
It also set the standard price everyone else tries to match – £10 a month.

Demon is still the largest direct ISP-only service in the UK. Its UK user base is eclipsed only by Compuserve, which theoretically offers Internet access to all its 250,000 UK users; there's no telling, though, how many of them actually use it.

Demon's software has been problematic – while being the most complete package offered, it was a cobbled-together bunch of arcane programs. The good news is that Demon now offers the Turnpike package, which has all the same facilities previously available but with a Windows interface. We found it quite impressive.

The one area in which Demon trails behind the other providers is in Web space: users don't get any, at least for free. On the plus side, you do get your own IP number. This rather esoteric feature, rare among ISPs, means you can set up your machine as a host.

**Demon set the standard for its sector of the market and remains the leading UK ISP for single users.**



**Pipex**

Pipex didn't believe Demon could possibly make any money at the prices it was charging when it first started. At the time, Pipex was the only competition, and its focus was selling very expensive access to the corporate market. In 1994, the company moved into the consumer market, first through Cambridge-based reseller Cityscape, and then on its own through its Dial consumer service. Dial is priced a little higher than Demon but seems to give slightly faster throughput.

Pipex is a player in almost

every aspect of the Internet industry. Taken over by the US company UUnet in late 1995, it built the network for MSN and it also supplies the Internet feed to a number of resellers, including The Direct Connection, the PC User Group and, until it closed, the BBC Networking Club. A number of local suppliers, like Brighton's Pavilion, also buy their Net feed from Pipex.

The key flaw in Pipex Dial is the software. The mail client, Mail-It, is unpleasant and clunky, although it will let you compose messages offline (you can't send them without closing the software, then connecting). Along with that you get a copy of Netscape and FTP and Telnet clients. No newsreader is supplied, so you'll have to find one yourself.

Although the software can be tweaked to run with Windows 95 with help from technical support, the company says an upgrade is needed to make Dial fully compatible and this will be available soon. The system notifies you automatically when upgrades are available. Of course, you can replace any of the software supplied – but you have paid for it in Pipex's £50 sign-up fee. **Good, fast service from a leading player; pity about the software.**

**IBM Global Network**

IBM Global Network was first supplied with OS/2 Warp, but a Windows package is now available as well. The free software is more or less like everyone else's, but we were impressed with the surcharged package, which has good facilities for using more than one system. The one infuriating thing about it is that when you disconnect it shuts everything down – you can't disconnect to read Web pages offline.

IBM has always had a global network to service its own compa- ▶



ny needs and it is this network it is expanding now that it has gone into the Internet access business.

Like CompuServe, IBM continues to build its own network rather than relying on other companies to expand its facilities. The company claims this means it can offer better speed and reliability. Instead of routing packets of data all over the Internet, IBM says it routes the data directly to the nearest point on its network to your actual target before handing it over to the Internet proper. The company also claims this gives it better security.

The drawback is the cost of the service – extra hours above the base amount cost more. In return, however, you do get global access, something no one else but

CompuServe provides.

**Slightly more expensive ISP-only service, but with global access.**

**MSN (Microsoft Network)**

Microsoft doesn't like to leave any part of the market untouched, so a couple of years ago it decided to get into the on-line services business. But what it didn't foresee was the Internet, which meant its service had to be revamped almost as soon as it was launched.

MSN has been fairly successful in the US, where it offered Internet access from the day it was launched, at the same time as



Windows 95 was released last year. In the US the service claims it has signed up 750,000 users, although in the UK it has been pretty much of a damp squib.

One problem is that the system is desperately slow. For example, it takes four minutes to load the main menu, without which you can do nothing. In addition it has few contents and it is overpriced, costing twice the price of US access.

The company says this is all about to change. The new version is based on Internet protocols and is claimed to be much faster. New content deals have been signed with companies like Paramount

and NBC, and there are plans to produce live, on-line events to cover the Windows 96 show, the London Marathon, the FA Cup final and Euro '96. Pricing has been revamped so you can pay as little as £4.95 a month for three hours of access or £14.95 a month for unlimited hours.

At the moment, the big disadvantage is that you must have Windows 95 to access the service – there is no client available for any other operating system. In a few months' time Web users will be able to buy access to MSN's contents at a reduced price.

We are also concerned about the security of MSN accounts: when we lost our password, a friend was able to convince the ser-



vice to issue a new one. This should not happen, especially since your stored credit card details are used whenever you buy anything on MSN.

**Not really a UK service – yet; only Windows 95 users need apply until the MSN Club service is available through the Web.**



**Offline readers**

Because of the cost of phone calls in the UK, users have to count every minute of on-line access. This means the most important bit of software any service can have is an offline reader (OLR), which lets you automate the business of logging on and collecting and sending messages, so you can do the time-consuming part of reading and writing offline.

CIX and CompuServe both have many third-party OLRs. On CIX, type HELP OLR at the main system prompt. On CompuServe, look for TapCIS (GO TAPCIS), OzCIS (GO OZCIS), or, if you prefer UK products, try the Ashmount series of OLRs (GO ASHMOUNT). Delphi also has an OLR or two available.

Offline Usenet newsreaders have been around only for the past year or so. If your service provider gives you the on-line reader WinVN or no newsreader at all, take a look around the Net for Free Agent. If you're a CIX conferencing user, you're already home free if you use either Ameol or Virtual Access, since both include Usenet facilities. Demon's package, Turnpike, has an offline Usenet newsreader built in, as does Winnet, from the PC User Group.

Tools to automate the Web are also beginning to appear. Watch out for Web Whacker; we haven't had a chance to try it yet, but it is supposed to download entire chunks of Web sites and store them offline in the correct directory tree, so you can read it all offline.



**Terms & conditions**

|                           | Sign up fee                         | Rates  | Web space  | Supplied software   | Telephone number | E-mail address               | Notes   |
|---------------------------|-------------------------------------|--|------------|---|------------------|------------------------------|---|
| <b>AOL</b>                | None                                | £5.95/month, £1.85/addl hour                             | 2Mb        | Own client, plus download internal Web browser                    | (0800) 376 5432  | getaol@aol.com               | First month's fee waived, first 10 hours free; you can use standard Internet software over your AOL connection; no VAT applied                |
| <b>Bogomip</b>            | £25                                 | £12/month  | 1Mb        | Bogomip front end, Eudora, Netscape, Newsxpress                   | (0800) 137536    | info@mail.bogo.co.uk         |   |
| <b>Cityscape</b>          | £50 with the software               | £180/year or £15/month minimum                           | 1Mb        | Eudora, Netscape, WinVN, Trumpet Winsock                          | (01223) 566950   | sales@cityscape.co.uk        | Software is registered; includes installation routine   |
| <b>CIX conferencing</b>   | £25                                 | £3.60/hr peak; £2.40 off-peak                            | n/a        | Use any general comms package; many OLRs available                | (0181) 296 9666  | cixadmin@cix.compulink.co.uk | Official OLR Ameol costs £45; sign up on line   |
| <b>CIX Internet (IP)</b>  | £10                                 | 1p/minute; £15/month minimum                             | 256Kb      | Full Internet suite available for £30                             | (0181) 296 9666  | sales@compulink.co.uk        | Sales and technical support 9am to midnight, Mon-Fri  |
| <b>CompuServe</b>         | none                                | start at \$9.95/month                                    | 1Mb        | CompuServe Information Manager                                    | (0800) 000200    | 70006.101@compuserve.com     | Worldwide access over own network; broadest range of services; also available plain Internet access over Sprynet, prices start at £3.95/month |
| <b>Delphi</b>             | none                                | £10 or £20/first 4 or 20 hours; hourly charge after that | n/a        | Use any general comms package                                     | (0171) 757 7080  | ukservice@delphi.com         | OLR available; SLIP/PPP based service under discussion  |
| <b>Demon</b>              | £12.50                              | £10/month  | n/a        | Windows Turnpike £20  | (0181) 371 1234  | sales@demon.net              | Free technical support 9:00-21:00; unlimited e-mail addresses per account   |
| <b>Direct Connection</b>  | £7.50                               | £10/month and up   | 500Kb      | Free/shareware supplied   | (0181) 297 2200  | sales@dircon.co.uk           | Shareware registration adds £5; also resell Quarterdeck Internet Suite  |
| <b>Easynet</b>            | £25                                 | £11.90/month or £118.80/year                             | None       | Easynet front end installer plus shareware                        | (0171) 209 0990  | admin@easynet.co.uk          | Seven-day customer support  |
| <b>Fourthnet</b>          | none                                | £110/year  | 250Kb free | ZIMACS, Netscape, WS_ftp, WSIRC, Telnet                           | (01252) 345441   | sales@fourthnet.co.uk        | Mail and news handled through special software (supplied) to speed connections; SMTP and POP3 available on request                            |
| <b>Frontier Internet</b>  | £25                                 | £10/month  | n/a        | Eudora, WS_ftp, Netscape  | (0171) 242 3383  | sales@ftech.net              | Seven-day technical support   |
| <b>Global</b>             | £10, none for quarterly/annual subs | £10/month, £89.99/year                                   | n/a        | Winsock, Super Mosaic, custom setup routine                       | (0181) 957 1005  | enquiries@globalnet.co.uk    | 1Mb Web space available for £20/year  |
| <b>IBM Global Network</b> | none                                | £10/3 hours or £20/30 hours; £3/additional hour          | n/a        | Internet Access kit, licensed Netscape, Eudora Lite, or OS/2 Warp | (0800) 973000    | internet_europe@vnet.ibm.com | Kits available for Mac, OS/2 and Windows (£26); worldwide access  |
| <b>Internet Discovery</b> | £12.50 incl VAT                     | £15/month incl VAT                                       | n/a        | Pre-configured OneDisk mail software                              | (0181) 694 2240  | sales@idiscover.net          | London rates £7.50 sign-up and £10/month  |
| <b>MSN</b>                | none                                | £4.95/3 hrs +£1.95/hr, or £14.95 unltld                  | n/a        | Bundled in Windows 95   | (0800) 750800    | n/a                          | Annual rate £149.95, no VAT added   |
| <b>PC User Group</b>      | none                                | £6.75/month e-mail & news; £8.25/month IP                | 1Mb        | WinNET Plus, Internet Explorer                                    | (0181) 863 1191  | info@win-uk.net              | Offline reader available; user group offers Internet training courses   |
| <b>Pipex Dial</b>         | £50                                 | £15/month  | 500Kb      | Pipex Dial, Netscape  | (0500) 474739    | sales@dial.pipex.com         | Partners in Europe and merger with UUnet technologies give international access   |
| <b>Research Machines</b>  | £25                                 | £120/year in advance                                     |            |   | (01235) 826868   | salesdesk@rmplc.co.uk        | Primarily schools and parents; filtered Usenet feed and blocked Web sites   |
| <b>Sonnet</b>             | £25                                 | £12.50/month   | 5Mb        | Shareware and PD  | (0181) 664 6000  | enquire@sonnet.co.uk         |   |
| <b>Tel-Me</b>             | £49                                 | £9.95/month plus query charges                           | n/a        | Tel-Me client, Netscape   | (0800) 991155    | telmeinfo@phonelink.com      | Credit checks, weather, maps, stock quotes all displayed graphically  |
| <b>UK Online</b>          | none                                | £9.99/month, £14.99 family, incl VAT                     | 1Mb        | Internet Explorer, Netcetera (news)                               | (0645) 000011    | sales@ukonline.co.uk         | Family/home focus; four mailboxes/account; restricted Usenet feed   |



### Connection details

|                    | Connection type                    | Max speed                     | Internet feed            | Points of Presence (PoPs)                      | Network supplied by |
|--------------------|------------------------------------|-------------------------------|--------------------------|--|---------------------|
| AOL                | Dial-up                            | 28,800                        | own                      | 80% coverage 3/96                              | various             |
| Bogomip            | SLIP, PPP, POP3                    | 28,800                        | EUNet                    | London   | n/a                 |
| Cityscape          | SLIP, PPP, POP3                    | 28,800                        | Demon                    | 100% UK plus Isle of Man & Channel Islands     | Demon               |
| CIX conferencing   | login                              | v.34, ISDN                    | BTnet                    | London only                                    | n/a                 |
| CIX Internet (IP)  | POP3 receive, SMTP send, SLIP, PPP | v34, ISDN                     | BTnet                    | 87% of UK                                      | Energis             |
| CompuServe         | login, PPP                         | 28,800                        | UUNet                    | CIS 8 nodes, plus GNS, France Telecom, Mercury | various             |
| Delphi             | login                              | 14,400                        | NEARnet                  | London (plus GNS access)                       | n/a                 |
| Demon              | PPP, SLIP, SMTP, NNTP              | 28,800                        | own                      | 100% UK plus Isle of Man & Channel Islands     | Demon               |
| Direct Connection  | SLIP, PPP, POP3, UUCP, login       | 28,800                        | Pipex, BTnet             | BT LoCall (0345) nationwide                    | BT                  |
| EasyNet            | PPP, SLIP, POP3, SMTP              | 28,800, ISDN                  | BTnet, France Telecom    | National 94%                                   | Mercury             |
| Fourthnet          | PPP (see notes re mail)            | 28,800                        | BTnet                    | BT LoCall (0345) nationwide                    | BT                  |
| Frontier Internet  | SLIP, PPP, POP3                    | 28,800, ISDN                  | Pipex                    | 90% of UK                                      | Pipex               |
| Global             | PPP, POP3                          | 28,800, ISDN                  | BTnet, Global Sprintlink | 85% of UK                                      | Energis             |
| IBM Global Network | SLIP                               | 14,400 (28,800 in 3 UK nodes) | IBM                      | IBM 10/UKnodes                                 | own                 |
| Internet Discovery | SLIP, PPP, UUCP, POP3              | 28,800, ISDN                  | Pipex, VBCNet            | Pipex  | Pipex               |
| MSN                | dial-up, TCP/IP                    | 28,800                        | Pipex                    | 80% of UK, increasing to 100% in April         | Energis             |
| PC User Group      | UUCP, login, SLIP, PPP             | 28,800                        | Pipex*                   | Pipex  | Pipex               |
| Pipex Dial         | SLIP, PPP, CSLIP                   | 28,800                        | Pipex                    | 95% local coverage                             | Mercury             |
| Research Machines  | SLIP, PPP, POP3                    | 28,800, ISDN                  | under NDA                | 23 (own)                                       | Varies              |
| Sonnet             | SLIP, PPP, POP3, SMTP, NNTP        | 28,800                        | EUNet, moving to Xara    | London   | n/a                 |
| Tel-Me             | dial-up                            | 28,00                         | Pipex                    |  |                     |
| UK Online          | PPP, POP3                          | 28,800                        | Technocom                | 80% of UK                                      | Energis             |

### Company background

|                    | Started (service/IP access) | Ownership/backing                     | Number of users Q3/96***                    | Growth Q3/96         |
|--------------------|-----------------------------|---------------------------------------|---|----------------------|
| AOL                | US 1985, UK 1996            | America Online, Bertelsmann           | 5 million worldwide                         | 5%/month             |
| Bogomip            | April 1995                  | WEB Ltd                               | not supplied                                | 15-20%/month         |
| Cityscape          | 1994                        | Demon                                 | 3,000-5,000                                 | figures not supplied |
| CIX conferencing   | 1987                        | CIX Ltd                               | 16,000                                      | n/a                  |
| CIX Internet (IP)  | 1995                        | CIX Ltd                               | 3,000                                       | 15%/month            |
| CompuServe         | 1979                        | H&R Block**                           | 4.5 million worldwide (250,000 UK)          | 10%/month UK         |
| Delphi             | 1983; UK 1994               | News Corporation                      | 150,000 worldwide                           | none                 |
| Demon              | 1992                        | n/a                                   | 60,000                                      | 8%/month avg         |
| Direct Connection  | 1989                        | Privately owned                       | 8,000                                       | 10%/month            |
| EasyNet            | Aug 1994                    | EasyNet PLC                           | 5,000                                       | 10%/month            |
| Fourthnet          | 1995                        | Fourthrite Ltd (90%); directors (10%) | not supplied                                | n/a                  |
| Frontier Internet  | Nov 1994                    | n/a                                   | 1,400                                       | 14%/year             |
| Global             | 1995                        | n/a                                   | 3,000                                       | 600/month            |
| IBM Global Network | 1994                        | IBM                                   | 100,000-plus                                | 2%/week              |
| Internet Discovery | 1994                        | Older sister company NSM Services     | unknown                                     | limited to 70/month  |
| MSN                | 1995                        | Microsoft                             | 850,000 worldwide (no UK figures available) | 8%/month             |
| PC User Group      | 1988/1993                   | n/a                                   | 4,500                                       | 10%/month            |
| Pipex Dial         | 1992 (Dial late 1994)       | UUNet Technologies Inc                | 25,000 +1,000 corporate                     | 5-10%/month          |
| Research Machines  | Feb 1995                    | Research Machines                     | 900 (700 schools)                           | 125/month            |
| Sonnet             | 1995                        | n/a                                   | not supplied                                | 15%/month            |
| Tel-Me             | 1994                        | PhoneLink PLC                         | 5,500                                       | 20%/month            |
| UK Online          | Sept 1995                   | Olivetti Telemedia                    | not supplied                                | 'on target'          |

\*\*Plus 30 lines of own in London.

\*\*H&R Block is spinning CompuServe off as a separate, publicly traded company.

\*\*\*Figures for UK unless stated otherwise.