This week, I'd like to talk about the new broadband connection to the Internet known as ADSL.

Before I start, a clarification. Data transfer speeds are sometimes measures in kilobits per second, and sometimes kilobytes per second. 8 kilobits per sesond equal one kilobyte. Where I use the abbrevation kbs, I mean kilobits per second.

In 1997, the PC world was, as it is now, full of new developments. If you had enough money, you could buy the latest bells-and-whistles computer with 32Mb of RAM powered by a Pentium 166 Mhz processor. It could well have one of Seagate's 2.5Gb hard drives, and the operating system would be Windows95, which in its OSR2 version finally acknowledged the existence of the Internet that Microsoft had hitherto tried hard to pretend didn't exist. To connect to the Internet, you would use a 56kbs (kilobits per second) modem. We've come a long way in the last five years - processors of over 1Ghz, 40 and even 80Gb hard disks, RAM ten times faster and ten times greater in capacity, and the latest offering from Redmond, Windows XP, which wouldn't even run on your old P166. However, in one respect, time has stood still. The performance of most people's Internet connections hasn't changed at all. You are still using a 56kbs modem. OK, so it's smaller and cheaper than the US Robotics Courier I bought all those years ago, and it may be easier to install, but it won't hoover data off the net any faster.

It's not that the technology hasn't been available. For those fortunate to live in an area where it is an option, cable modem has been around for some years, but it hasn't been without its problems. It is expensive, and not much faster than dial-up, especially at peak times. Another solution appeared to be satellite - this has been promoted for those areas without fixed land line telephones. But, quite apart from the expense it has a big problem. Unless you are going to set up your own satellite transmitting station, communication from your end back to the Internet still has to be by good old telephone. This has severely limited its appeal. Another solution, one I used myself for quite some time, is by RDSI, or IDSN (Integrated Services Digital Network) if you prefer. This is a digital dial-up connection, available, unlike ADSL which I'm coming to, on virtually every Telefonica land line (except, so I'm told, in Vergel) It gives a dependable 64kbs. You need the installation of a special splitter box by Telefonica, and you need a RDSI modem. Most of the Internet deals, including "free" accounts are equally available for RDSI customers as they are for normal analog customers, and you still pay for your Internet phone calls, although you have the advantage that you can make or receive a voice call at the same time. Therefore, RDSI has always been a minority option and is set to decline even further as more and more people sign up for ADSL.

So, what is this ADSL that I, and others, keep talking about? ADSL

stands for Asymmetric Digital Subscriber Line, which probably means nothing to you, so let's keep it simple. If you have ADSL, your Internet connection is completely independent of your telephone, even though both come into the house through the same socket. You will have a permanent (all the time your computer is on) connection to the Internet at a maximum speed (normally and nominally) of 256kbs for incoming data and 128kbs for outgoing. The speed difference is the Asymmetric part of ADSL, and is of no real life importance since almost everybody downloads far more from the Internet than they ever upload. ADSL is set to transform Internet connections - it is (comparatively) cheap, with a flat rate fee, always available and, in theory, much faster than what has been available previously.

Telefonica have steadily been making their network ADSL capable. Most, but not all, of the area covered by The Freebie has been converted in the last year. Things have improved rapidly recently. I applied for my ADSL connection last November and finally got it this May.
However, I know of people who, having applied within the last month, already have their connection. There is a web site (links at the end) where you can check the availability of ADSL for your own number, but an even better way, if you want it, is to contact an ISP and ask them. The major Spanish Internet Service Providers (including Telefonica themselves) are competing vigorously for ADSL customers, with the result that there are some really good deals around. If you want the standard 256kbs/128kbs connection, and you're prepared to do your own installation, then the extra hardware needed will be provided either free of charge or at a much reduced price.

My own ADSL contract is with Telefonica. Since the physical wire into my house is still their responsibility irrespective of who my ADSL ISP is, I reckon that if something goes wrong I'm in a good position as one party won't be able to blame the other! Therefore, the details I'm giving are for my connection through Telefonica. Prices seem to be changing daily, so keep an eye on things and make sure you get a good deal. In my own case, I had to have my RDSI connection disabled and my line ADSL enabled. That cost me 32EUR on my phone bill. I was given the router, some microfilters which enable me to use my voice phone while I'm on line, a network card to fit inside my computer, all the cables and some installation software. This all arrived by courier one Thursday evening. A couple of weeks previously, I had received a letter containing all my personal settings. I had no trouble installing the router, configuring it and getting it to work. But then again, I'm supposed to know what I'm doing! I think the average computer user could, if they read and followed the instructions (in Spanish!) carefully, get themselves connected. In any case, if you don't think you can manage it, Telefonica (or Terra or Wanadoo) will arrange for somebody to visit your house and install it for about 90EUR. From now on, the cost of my Internet connection will be 42EUR a month. This compares with 90EUR that I was paying Wanadoo for my Tarifa Plana (flat rate) RDSI connection.

It all sounds wonderful, doesn't it! Surely, you must be thinking to yourself, there must be some drawbacks. Yes, you're right, there are three that I can think of. Firstly, you can't have more than one ADSL connection. Unlike a dial-up or RDSI, you can't use your "spare" account if your main one fails for any reason. Also, if you move house, you will need to start all over again in your new one. The second drawback is that the minimum contract is for 1 or in some cases 2 years. Even if you don't use the service, you'll still have to pay the monthly fee, and if you're not happy, you can't simply change providers. The third second drawback is one that the ISPs are playing down, and which certainly isn't an issue in these early days, but may well prove to be a problem once ADSL becomes popular. The problem is that of contention. When you connect by a dial-up or RDSI connection, the wire between your house and the ISP is for your exclusive use. There may be congestion from there forwards, but nobody else shares your phone line. With ADSL this isn't the case. Think of your mains water supply. Normally, the pressure at your house is reasonable, but if everybody in your area turns their taps on at the same time the pressure will drop. That is contention. You are contending with others in your area for the available capacity of the water main. So it is with ADSL. Each 256kbs/128kbs line can be shared with others. For BT, the contention ratio is declared to be a maximum of 50 to 1. In other words, if you were all downloading at the same time, you would be sharing the 256kbs connection with up to 49 others. Naturally, the system knows which computer to send which data to, but the speed drops - as low as 5kbs in theory. Telefonica, Wanadoo and Terra haven't (as far as I know) declared a contention ratio. Instead, they have guaranteed a minimum throughput of just 10% of the theoretical maximum, in other words 25.6kbs or, if you prefer, just over 3 kilobytes per second, or even less than you can get through a dial-up. This is much less impressive than the figure of 256kbs which is the theoretical maximum, or even the 20+ kilobytes pre second which I'm currently experiencing. However, it's my guess that as more and more ADSL connections are enabled, speeds will drop. Just how far remains to be seen.