



## Networking your computers

July 2007

**As soon as you've got more than one computer in your firm, you might want to consider what additional benefits you can gain by networking them together.**

**Our E-Business Advisers discuss:**

### 1. What is a computer network?

A computer network is simply a way of connecting two or more computer together, alongside any printers and other devices you might have.

This connection may be physical, via network cables, or via a wireless connection, using a technology known as "Wi-Fi" - Wireless Fidelity.

Often, a computer network is described as a LAN - Local Area Network, by which is meant a network that is just within one physical location such as a building.

As it is also possible to network computers via other telecom links, it is perfectly possible to have a network with machines in different towns, or even on different continents - these would both be WANs - Wide Area Networks.

It is also possible to use the Internet as a connection route for these WANs - and this networking is called a VPN - Virtual Private Network.

There are several different types of networking structure, but the commonest in small and medium sized firms are:

### Peer to Peer

This is where two or more PC's are connected to each other via a "hub" - a small connection box.

This is inexpensive, fast to set up and is used for smaller networks.

Data tends to be saved on the individual PCs, with no centralized storage.

You can get many of the benefits of larger networks by using this simple methodology.

They are easy to set up - the Windows XP operating system, which is in very common usage, makes the process very straightforward.

### Client/Server

This is a very powerful set up for larger network systems. It allows for central administration, centralized data storage and backup etc.

It is typically used where a firm has several PCs on one site. It normally requires the purchase of a dedicated, special type of computer called a server or file server.

The individual PCs connected to the server are known as clients.

The file server allows different users to access the files it holds - but if two users try to access the same file simultaneously, only one will be able to save any changes that they make. This is called file locking.

This is a safety feature, to ensure that there is only one master copy of a file. The second user



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will be able to read the file, but won't be able to save any changes that they may make.

## 2. What are the benefits of a network?

There are many benefits of having a computer network:

- You can easily share files

If you use a Peer to Peer network, there are three ways of doing this:

- Attach a file to an email and send it to another user
- Allow users to have access to folders on other PCs (Folders can be password protected for security).
- You can view and update database records across your network. Often, accountancy software functions in this way.

If you use a Client/Server structure, data files will be held centrally and will be available to all.

- You can easily share Internet access

With any network type, it can be set up so that all users can share Internet access via your broadband connection.

You could also set the system up so that you can send emails, both internally and externally.

If you connect your network to the Internet, it is absolutely essential that you install a "Firewall" - see "Firewall" and "Hacking" Fact Sheets in this series for more detail.

You will also need to install and update anti-virus software - see "Computer Viruses" Fact

Sheet in this series for more details.

- You can share printers and other devices

This will save you money by avoiding the need to buy a printer for each PC,

- It makes backing-up your system much easier

If you have a network, you can arrange to backup either different folders on different machines if on a Peer to Peer network, or the data files on your server on a Client/ Server setup.

As this process can be automated to run overnight, it makes back-ups much easier - and more likely to be done!

- It increases staff productivity

Your staff will be able to service customer needs more quickly by having access to all the data that they may need.

If they are working on one centralised data store, you avoid the possibilities for error and time wasting of multiple entries of the same data.

And - no more running around with floppy disks or memory sticks to share data!

## 3. Cable or wireless networks?

LANs were, until relatively recently, always installed using cabling, and this still remains a viable and robust method.

However, wireless LANs have become more popular recently. They are often easier & cheaper to set up and maintain than cabling, but do have both advantages and disadvantages.



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## The advantages are:

- Wireless LANs can be very useful in older listed buildings where you cannot drill through walls, or where leases don't allow this
- They can offer greater flexibility - e.g. a laptop could be used anywhere within the building.
- If you need to move staff around, a wireless LAN makes this very easy to achieve as compared to a cabled LAN.

## On the disadvantage side:

- Wireless LANs are generally slower than cabled LANs. Often, in larger wireless networks the backbone of the network will be cabled to get around this issue.
- Sometimes, signal quality difficulties may be experienced, e.g. from radio interference from machinery, or because of thicker than usual walls etc.
- It is important that security is taken into account - wireless LANs can be as secure as cabled ones, but they need to be set up correctly to achieve this.

## 4. Useful Links

See also Fact Sheets in this series on:

“Virtual Private Networks - VPN”

“Wi-Fi - Wireless Fidelity”

“Firewalls”

“Computer Viruses”

and “Hacking”