## Backup and recovery systems

### Data storage media

#### http://www.techfresh.net/wp-content/uploads/2007/11/mf_nu2_1.jpgRemovable storage

These tend to be systems that are organised and controlled by the user of the data. For example, the user can back up a file onto a pen drive or can copy the contents of their personal PC onto a CD or DVD. This is fine but it puts the emphasis of remembering to take the backup and the secure storage of the data onto the user and humans are less reliable than machinery.

#### Remote storage

Remotely storing data on something like cloud storage can be done automatically at pre-set times. The data is automatically sent at the requested time to the remote server who then is responsible for its security ad storage. The user has also got the ability to send data to the remote server as and when they wish.

### Backup frequency

The frequency of the backup depends on the method employed.

On-site magnetic backup, such as magnetic tape, tends to be performed once a day (usually at night) using an automatic backup feature in the backup software. Three generations of tapes are kept; this is known as the ‘grandfather, father, son’ principle. This means that, should something happen to the data, the grandfather is used to restore the data along with the addition of the transaction data that has taken place since the grandfather was taken. If the grandfather fails, the father is used and, should this fail, the son is available. If the business has to deal with a large quantity of data then backups are taken more often.

If the method is portable, such as a pen drive or DVD, backup tends to be carried out as and when it is required. For example, when someone completes a piece of work they might make a second copy on a portable device.

### Archiving

An archive tends to be the backup of data for long-term storage. The user does not expect to retrieve this data but it is there in case they have to. In this storage the medium has to have a long shelf life. Online storage, in this instance, might not be appropriate as it is a utility provided by a company and no one can be sure as to how long this company will continue to function.

### Automated versus manual systems

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| System | Advantages | Disadvantages |
| Automated system |  Do not have to remember to take the backup   Automated systems usually compress the data |  Reliance on a system to take a backup   Usually harder to retrieve the data   Required specialised software |
| Manual system |  More control of the data in terms  of security |  Must remember to take the backup |

## Factors affecting the choice of backup method

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| Factor | Points for consideration |
| Cost |  How often do you have to back up?   What volume of data needs to be backed up?   How often must the backup be carried out?   What is the lifespan of the backup media?   What type of backup is needed – full backup or incremental?   Do you want to pay extra expense to have the backup equipment on your own site?   Do you want to pay monthly for an online service?   Do you need backup software?   Does the method allow for data expansion – future-proofing? |
| Availability |  Do you need access to it when you travel? Is it portable?   Do you need Internet access to retrieve it?   Is the system reliable and not prone to failure? |
| Ease of use |  Do you want online backup where it is collected, compressed and encrypted and then automatically transferred back to the remote servers?   How easy is the recovery process?   Can on-site backup be carried out with minimum disruption? |
| Data security |  Internal or external storage – which is more secure?   Is the location of the storage secure?   What security is applied to the actual data? If using online storage, is the data encrypted?   How reliable is the company providing the backup service – could it cease trading in the future and, if so, what happens to the data it deals with? |