

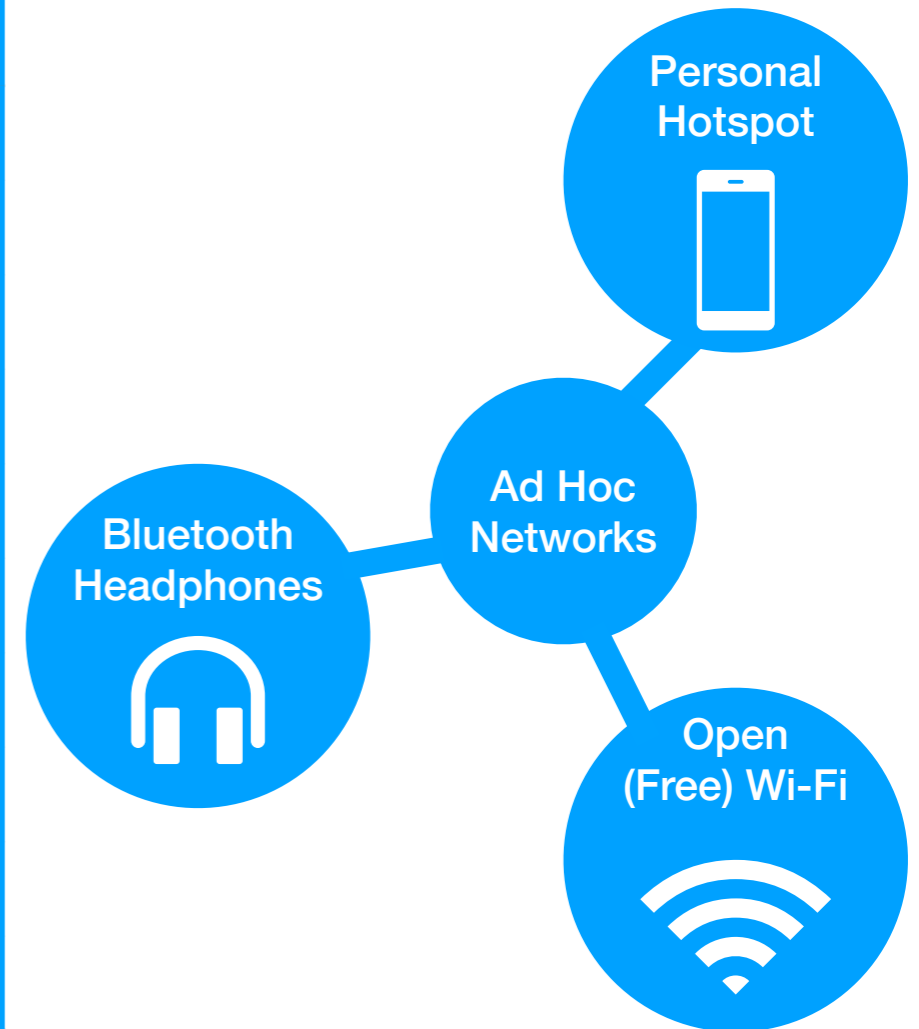
# Knowledge Organiser

Learning Aim A: Modern Technologies

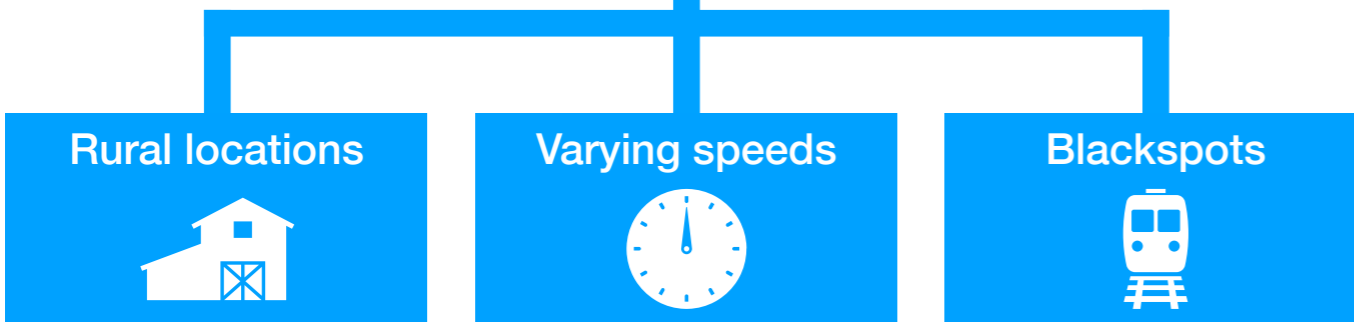
# 01 Ad Hoc Networks

## Key Terms

<b>Bluetooth</b>	A short range technology that connects multiple devices.
<b>Ad Hoc Network</b>	A wireless network that does not require fixed hardware.
<b>Personal Area Network</b>	A network of computers based on or around a person.
<b>Tethering</b>	Where a smartphone acts as an internet access point.
<b>Personal Hotspot</b>	Using a phone's internet connectivity on another device.
<b>PIN</b>	'Personal Identification Number'
<b>Encrypted</b>	Means that data cannot be read without a key.
<b>USB</b>	A standard for connection sockets on computers.
<b>Insecure</b>	A connection vulnerable to interception.
<b>Streaming</b>	A continuous flow of data sent over the internet.



## Issues affecting availability



## Advantages

- More devices can be added any time.
- Can be set-up anywhere.
- They require limited set-up.

## Disadvantages

- More open, so they are less secure.
- Unorganised, with no device in control.
- The more devices, the slower the speed.

# 02 Cloud Storage

Cloud storage is where files created and used on one or more computers or devices are **stored and managed remotely**. The files are stored on **servers** so that they can be accessed **via the internet**.

Key Terms	
<b>Server</b>	A computer that delivers data over a network (the internet).
<b>Downloading</b>	The process of transferring from a server to computer.
<b>Uploading</b>	The process of transferring from a computer to a server.
<b>Synchronising</b>	When files on two devices are updated to be the same.

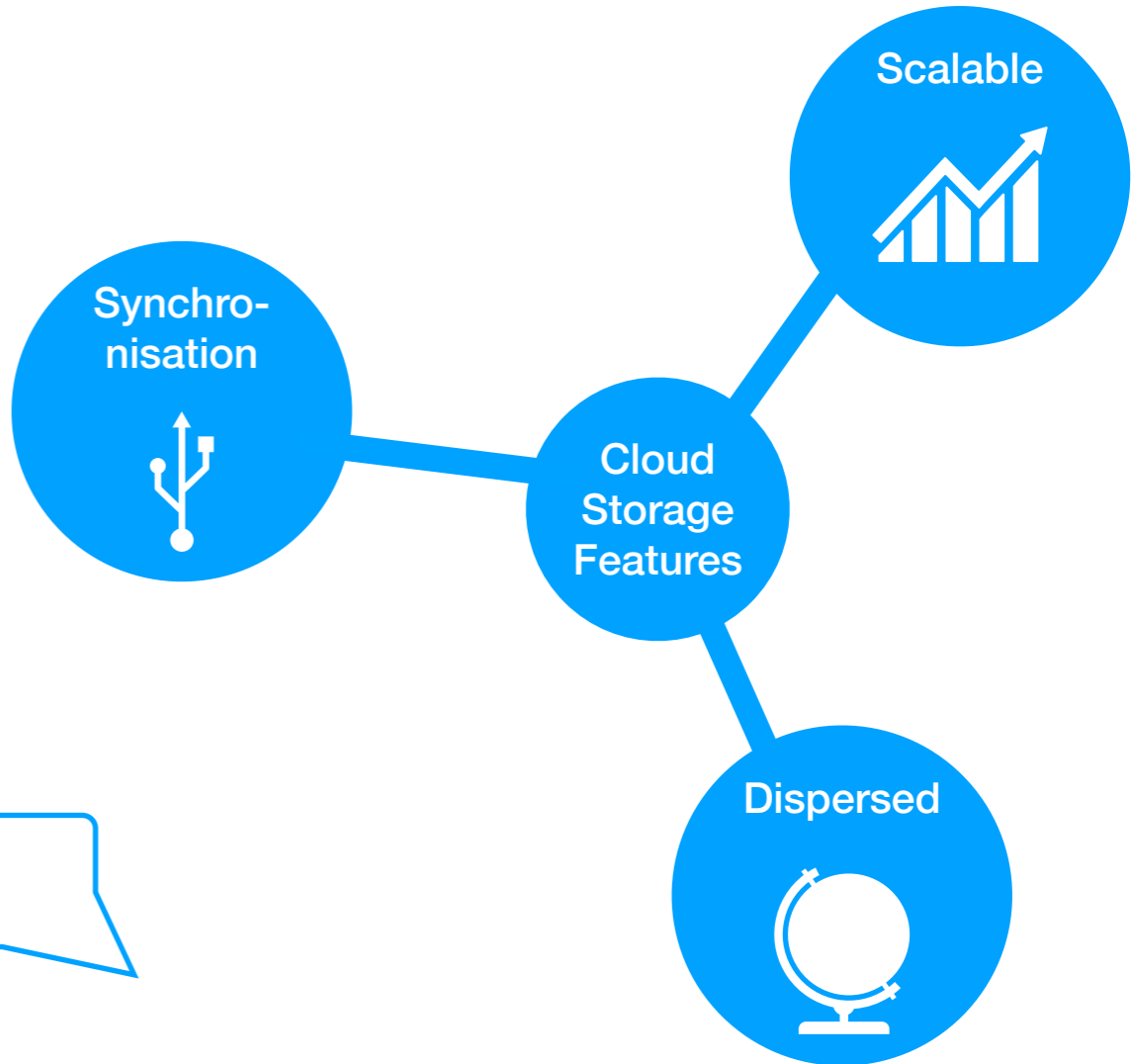
Advantages	Disadvantages
You can access your data from any device on the internet. It is scalable, meaning more storage can be added easily.	You cannot access your files without the internet. You have no control over how your data is stored by providers.

What can be stored in the cloud?

Photos and videos

Data back-ups

Documents



# 03 Cloud Computing

## Advantages

## Disadvantages

Doesn't require local computing power, meaning they can run on any device/computer.

Requires a stable internet connection. Without this, online applications are inaccessible.

Cloud computing is when applications like Microsoft Office are **installed on the cloud instead of your computer**. This means they do not require any computing power but do require an internet connection.

### Synchronised

Applications/files can be accessed from any device.

### No installation

Can be used entirely in a web browser.

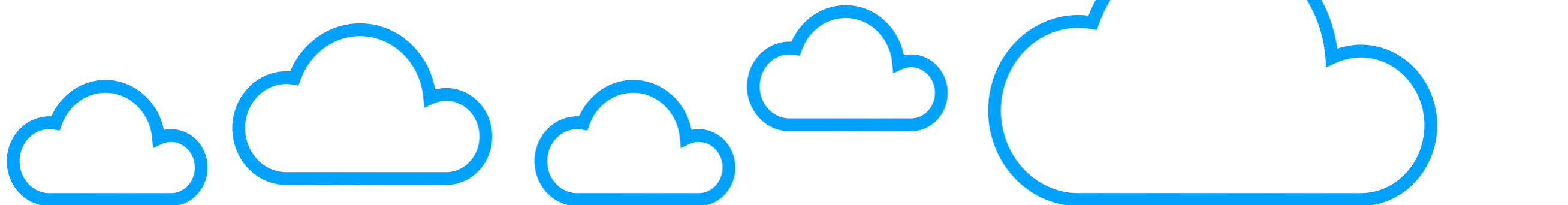
## Benefits of Online Applications

### No updates

Updates are managed automatically.

### Cost effective

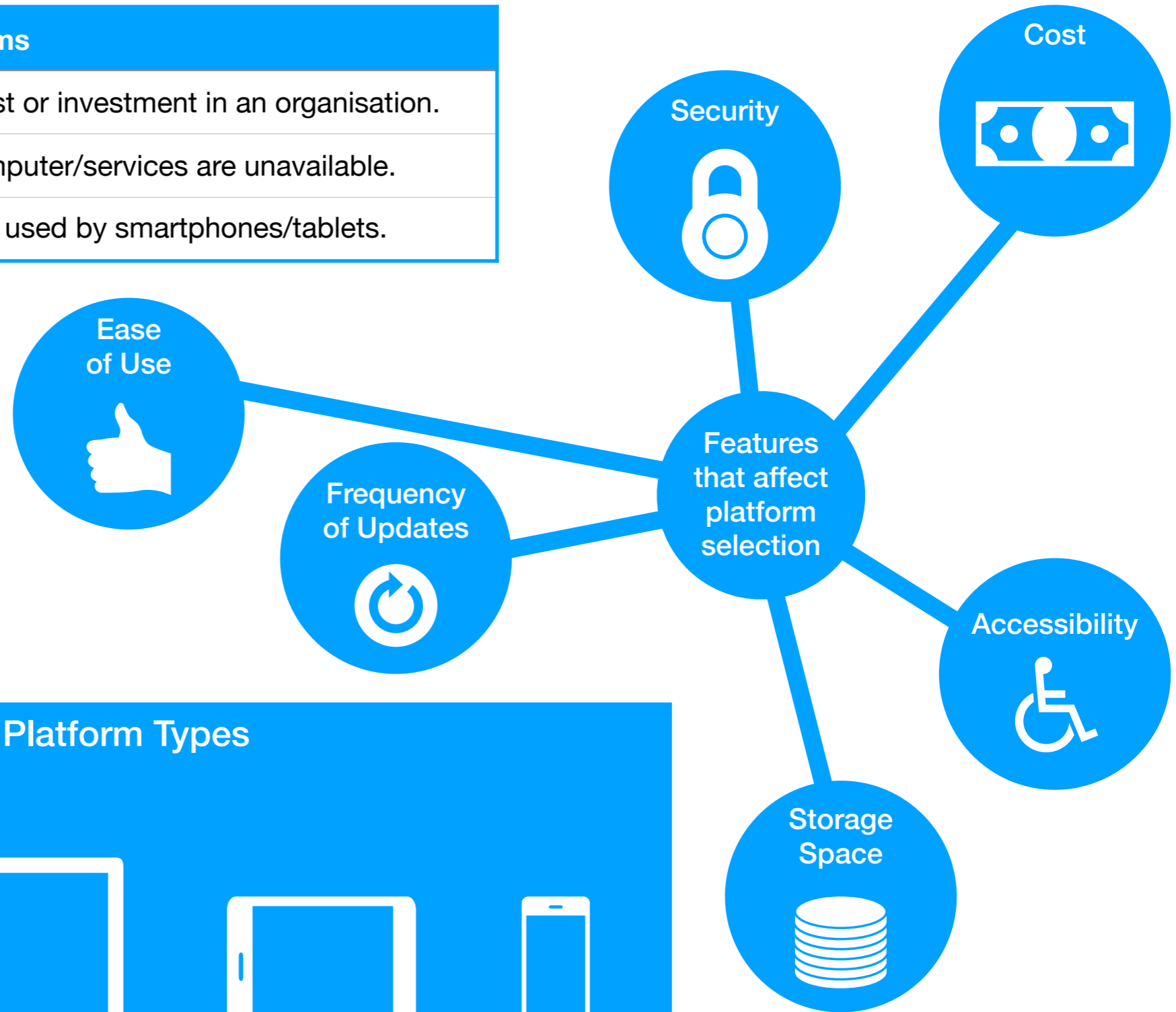
Organisations only pay for what they need.



# 04 Platforms and Services

## Key Terms

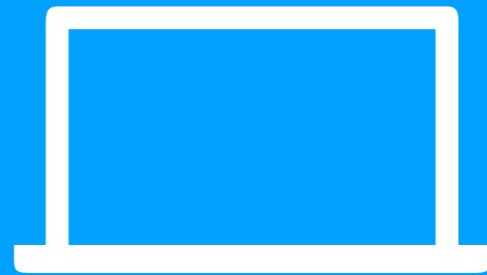
<b>Stakeholders</b>	Those with an interest or investment in an organisation.
<b>Downtime</b>	A period when a computer/services are unavailable.
<b>Geo-data</b>	Location information used by smartphones/tablets.



## Common Platform Types



Desktop PC



Laptop



Tablet



Smartphone

# 05 Cloud + Traditional Systems

## Key Terms

<b>Synchronisation</b>	When files on two devices are updated to be the same.
<b>Notification</b>	A message that notifies the user of a change or update.
<b>Online</b>	Connected to/uses the internet.
<b>Offline</b>	Not connected/doesn't use the internet.

Why is it useful to synchronise content across devices?

Access files anywhere



Share files with other users



Watch media across devices



## Popular Cloud Storage Platforms

Microsoft OneDrive



Apple iCloud

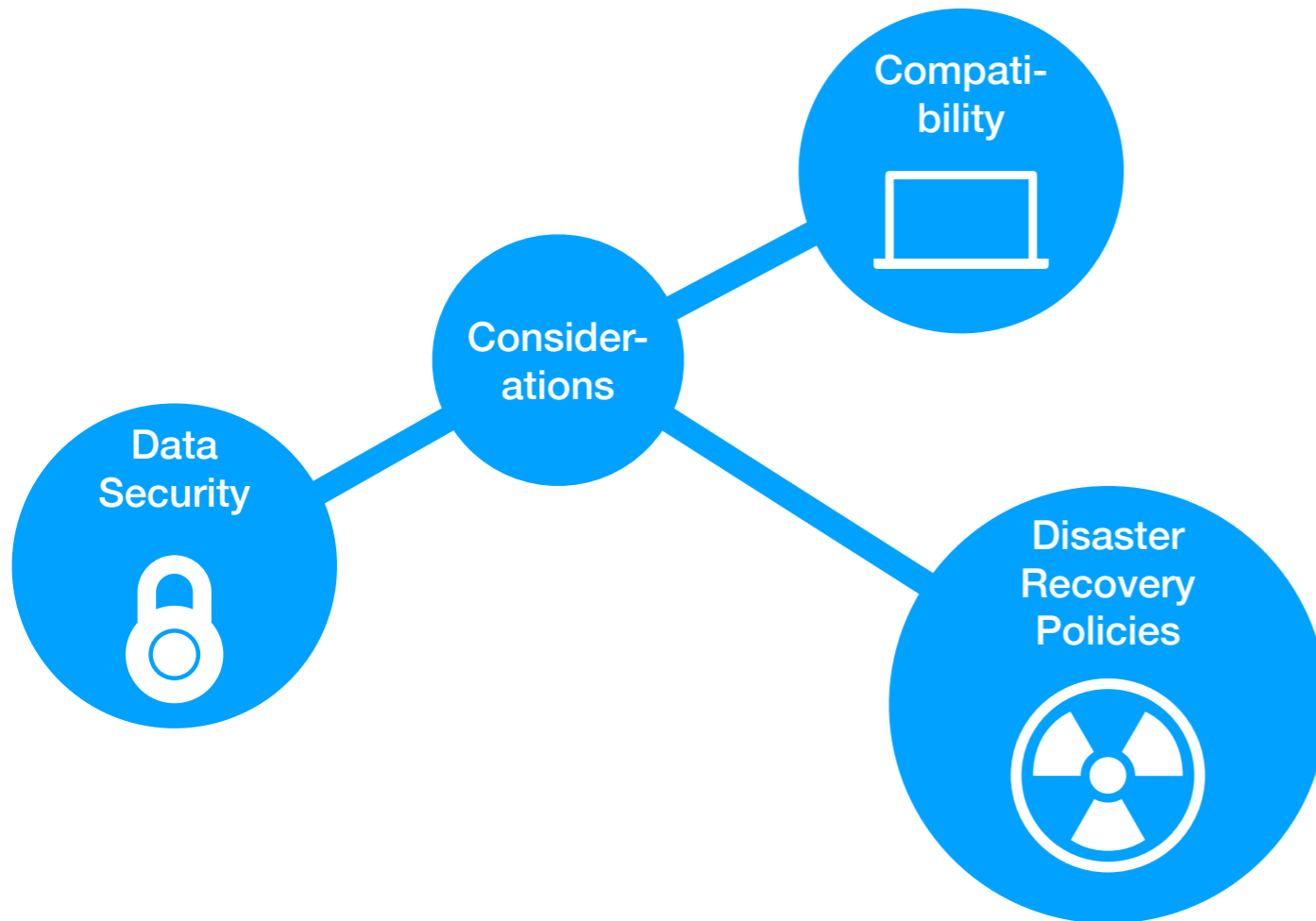


Google Drive

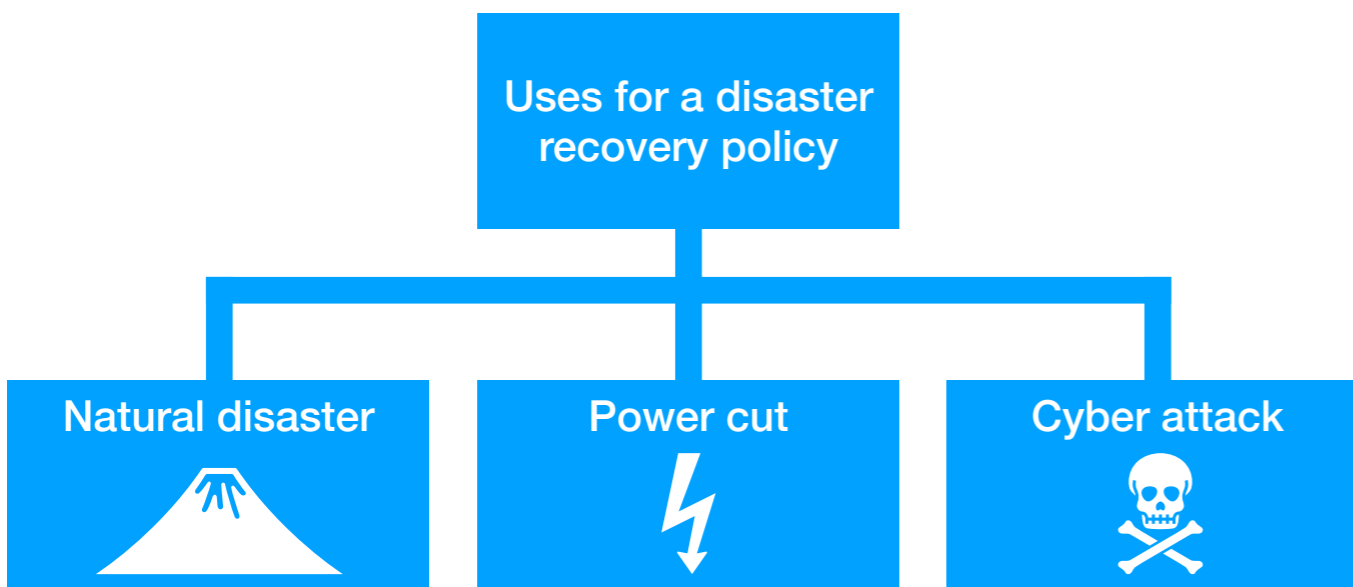


Dropbox





A disaster recovery policy is typically designed to **set out the actions** that will need to take place **after a disaster**, for example a cyber attack or a natural disaster, to **restore an organisation's services** quickly.



### Advantages

They can reduce the amount of time it takes to recover following a cyber security disaster.

They set out the roles of each person so everybody knows what to do following an attack.

### Disadvantages

It is not always possible to think of single risk that could occur before an attack is carried out.

Once the policy has been created, it needs to be continually updated.

# 07 Maintenance, Set-Up and Performance

A cloud server is usually maintained **automatically by the cloud service provider**. They ensure the **virtual machines** running on their servers are healthy and operating efficiently.

Most cloud computing solutions have **web-based dashboards** that allow users to monitor their performance.

## Key Terms

<b>Virtual Machine</b>	Software applications that behave like a physical computer.
<b>Administrator</b>	A person responsible for configuring and maintaining technologies.
<b>Spam</b>	Electronic junk mail, usually sent with a commercial purpose.
<b>Downtime</b>	A period when a computer/services are unavailable.

Downtime can be caused by:

Interrupted internet connectivity



Cyber attacks



Scheduled updates



### Setting up a traditional server requires:

Purchase of hardware

Building hardware

Operating system/application installation

Stable network connection

### Setting up a virtual machine requires:

Selecting a provider

Creating an account

Selecting performance requirements

Supplying payment



## Benefits of Collaborative Technologies

## Global and multicultural workplace

Communicating and collaborating using technology can help build relationships between people of different ages, gender, religion or culture.

## Inclusivity

Where technology has functionality for those with physical limitations. For example, people with visual impairments can take advantage of being able to enlarge text.

## 24/7/365 working hours

Having employees work from anywhere in the world means longer working hours. For example, live chat agents working in different time zones will be working 24/7/365.

## Team flexibility

Teams can be made up of a variety of employees, like casual staff. These staff might be on short-term contracts or freelance suppliers who are self-employed.

## Version Control Features

## Workflow

Only one person can work on the document at one time. Other users can only view the document.

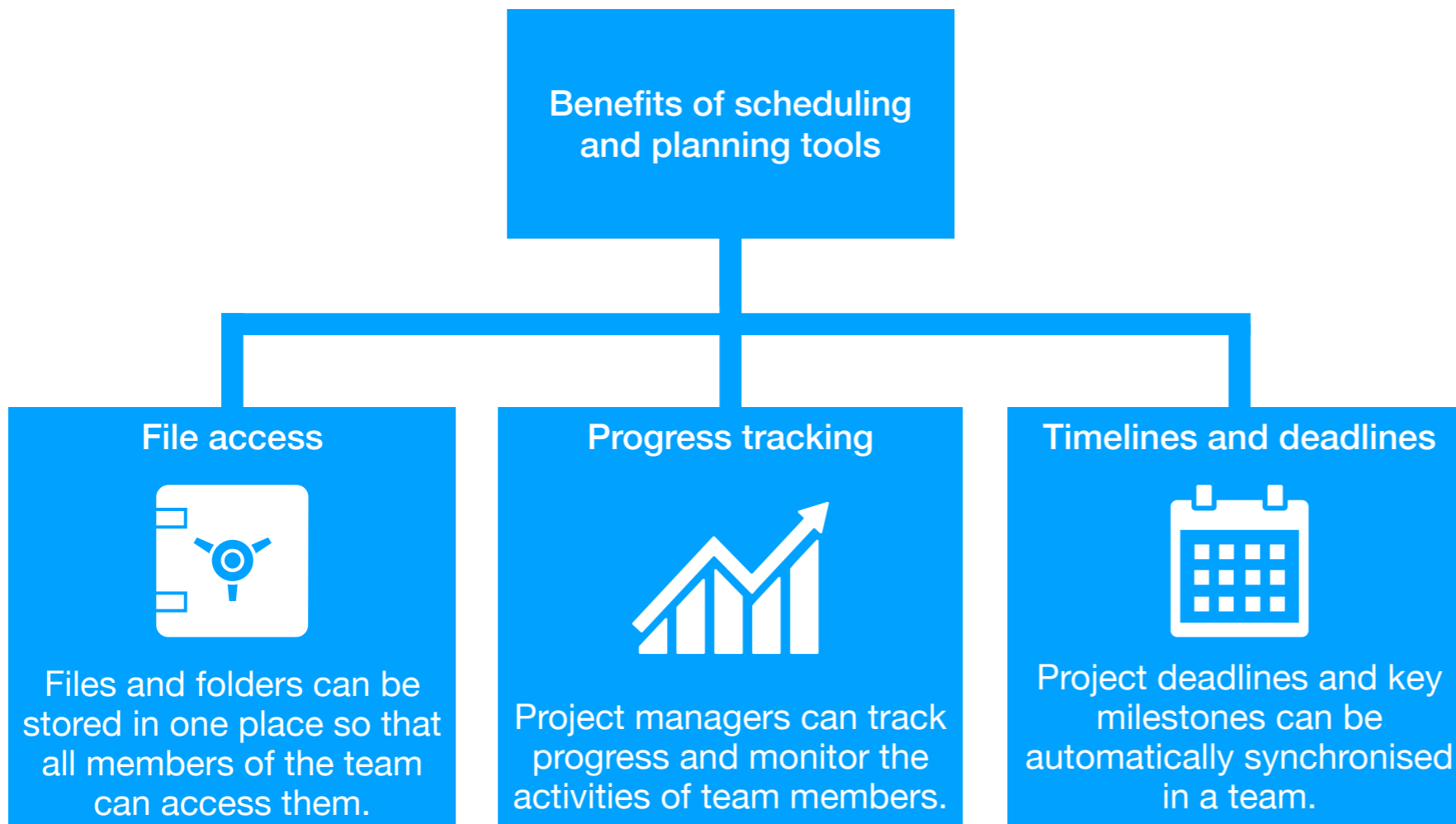
## History

When a log is kept of what has changed and who has changed it. Users have to agree on these changes.

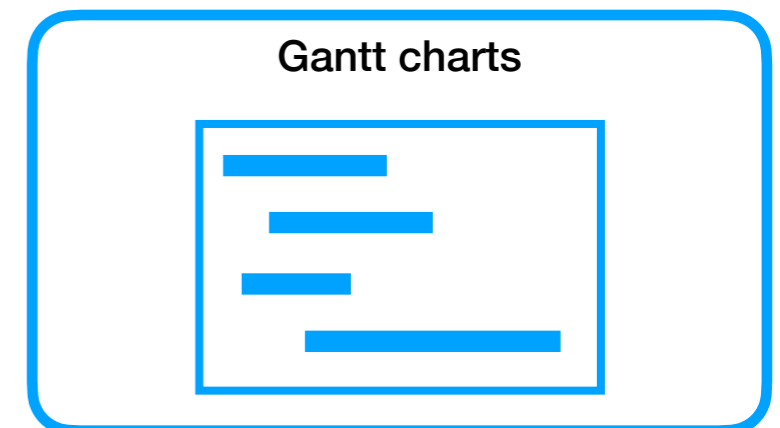
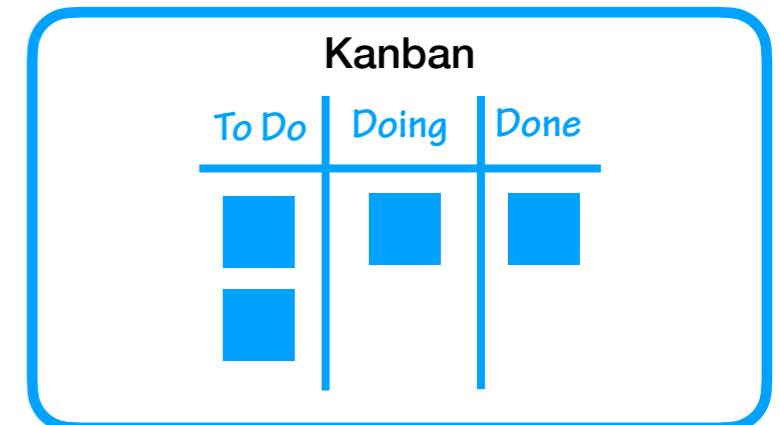
If several people are required to work on the same document, they could each save the document onto their computer, which would create multiple versions of the same document. **Version control prevents a clash** in the different versions of a document **between users**.

# 09 Scheduling and Planning

Key Terms	
<b>Scheduling</b>	Setting start and end dates for a project, which automatically calculates the days needed.
<b>Planning</b>	Allocating tasks and controlling a schedule.
<b>Project</b>	An individual or collaborative enterprise that is carefully planned to achieve a particular aim.



## Scheduling Tools



# 10 Communication with Stakeholders



Why would a business communicate with stakeholders?

To promote products or services with advertising.

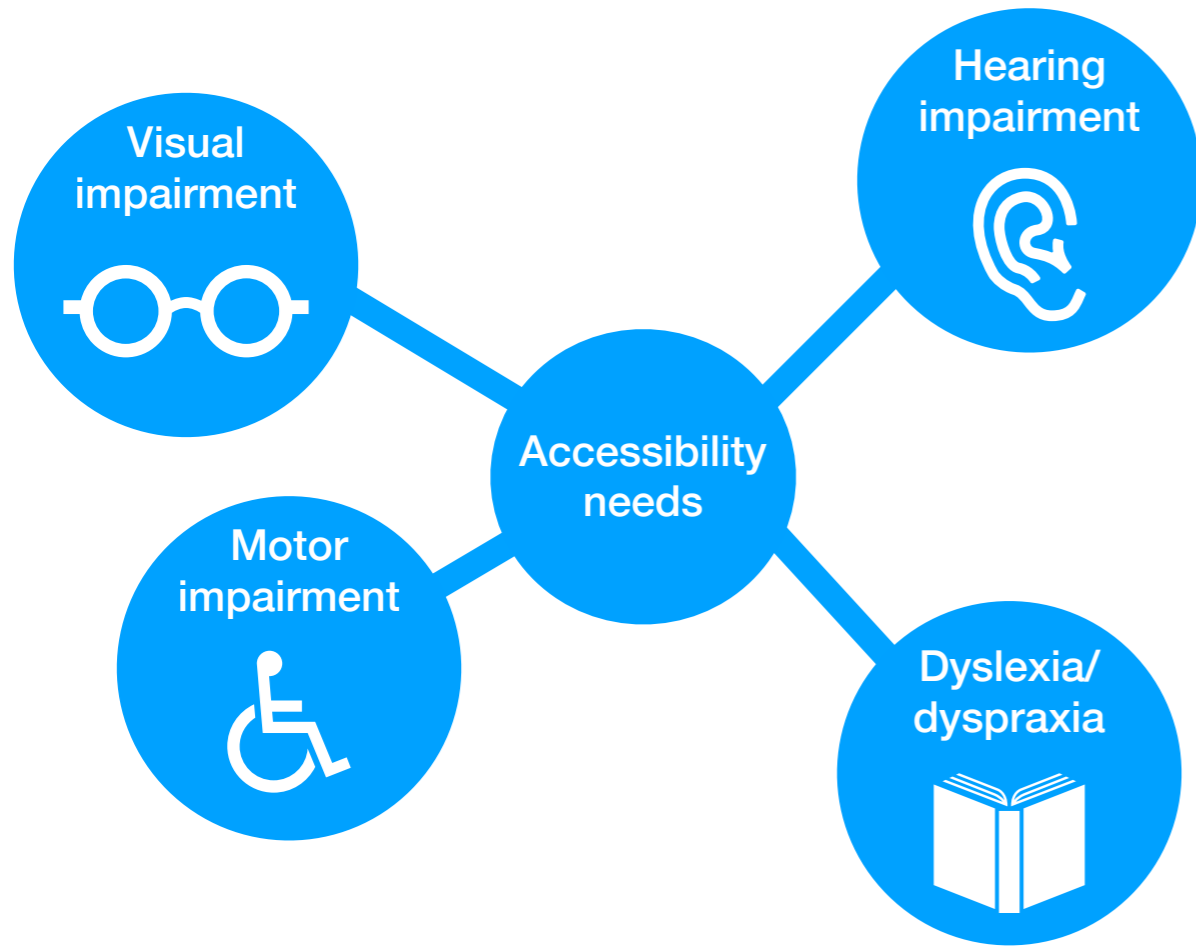
To deal with customer queries/complaints.

To update investors on business finances.

To update employees on business operations.

## Communication Technologies

<b>Telephone</b>	For conversations with individual customers, suppliers, etc.
<b>Email</b>	For conversations with larger groups like employees or customers.
<b>Live chat</b>	To provide support to customers on an informal basis.
<b>Social media</b>	To promote new products and provide general product guidance.



### Workplace Adjustments

Someone recovering from an operation and unable to drive should be allowed to work from home.

A mother with a young child should be given maternity leave in the first instance and then be able to return to work flexibly to suit her childcare needs.

A shop assistant with hearing difficulty should have a hearing loop fitted with a microphone at the checkout, allowing them to converse with customers.

### Accessibility Features

<b>Screen Reader</b>	Reads text aloud for users with visual impairments/blindness.
<b>High Contrast</b>	Uses more contrasting colours for those with visual impairments.
<b>Magnifier</b>	Zooms in on a particular part of the screen for the visually impaired.
<b>ALT Text</b>	Text description of an image for screen reading software.

