Edexcel

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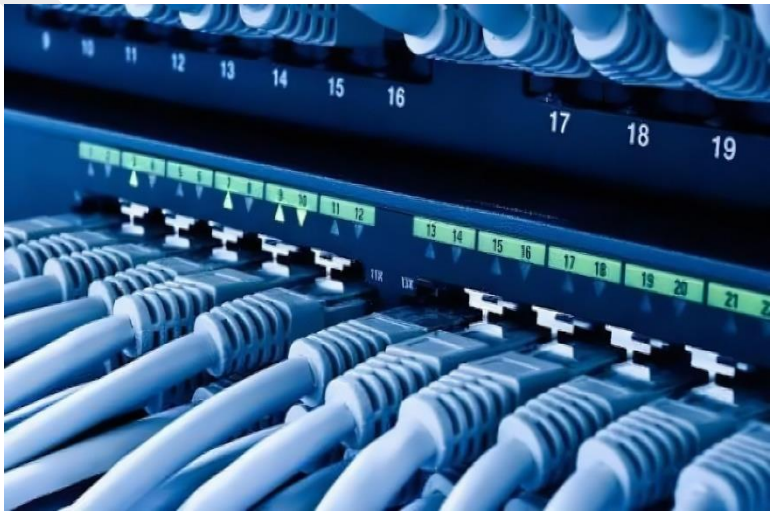
Unit 3

Operating Online



Chapter 06 – Risks to data and personal information

▲ **Figure 6.1** The amount of data communicated online in order to carry personal and financial information is almost unimaginable

Unauthorized access

Unauthorised access refers to unauthorised users gaining access to networks through self-initiated attempts or creating malicious software. They can also target devices to create botnets, which use resources for harmful purposes like **malware** spread.

Deliberate damage by malware

Ransomware is malware that threatens to delete user files or restrict access to resources until payment is made to an anonymous account, often distressing users and putting pressure on them to act quickly.

▲ Figure 6.2 Ransomware

Accidental deletion

Users can sometimes delete files or even the entire contents of a drive by mistake. This can happen if:

- They press a key on a keyboard by accident
- They format media on the wrong storage device
- Their device loses power unexpectedly.

Theft of personal data

Criminals use several methods to steal personal data.

PHISHING

Phishing is a criminal technique where criminals send emails posing as legitimate organisations, requesting personal information and payment details from users by responding or clicking on a hyperlink.

Compliments of the season

I am the Head of Corporate Investment at Investments and Securities Dubai.

I do have an authorisation of a client who is an African leader with difficult political position to seek for individuals with financial management understanding to handle his wealth devoid of his name.

If you have experiences or projects in need of funding do let us have a description of your experiences alongside your address and business name so we can discuss a lot more.

Sincerely

Mukhtar Hassan

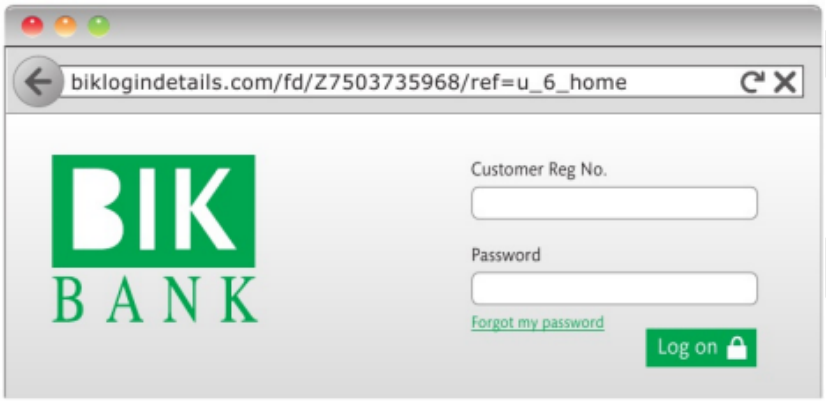
▲ **Figure 6.3** Some phishing emails are less believable than others; the email address can be a giveaway as to the authenticity of the sender

PHARMING

Like phishing, pharming is a technique used by criminals to gain personal information and payment details from users. Criminals create fake versions of trusted websites to trick users into entering their login details, which are then used by the criminals to access users' accounts.

There are two main methods by which users are directed to a pharming site.
■Internet traffic going to the real website is redirected to the fake website, so that users think they are visiting the real thing.

■Often, the URL of a pharming website is designed to be very similar to the URL of the real website. This means that if a user misspells the URL when typing it into the address bar of their web browser, they could go to the pharming site by mistake.



▲ **Figure 6.5** Users should always check the URL of websites that they visit to make sure that they are not fake websites

SUBJECT VOCABULARY

webform a data entry form on a web page
internet traffic data transferred between computers connected to the internet
domain name server a computer connected to the internet that translates domain names, such as pearson.com, into IP addresses

Methods to secure data and personal information online

Firewalls

Firewalls regulate network traffic by examining network addresses and ports, comparing them to a list of rules set by network administrators. They prevent unauthorized access and protect against malware, as explained in Unit 2 Connectivity.

Encryption

Encryption uses a key to scramble data into an unreadable form. If encrypted data is intercepted on the network, it is useless unless the interceptor has or can identify the key. See Unit 2 Connectivity (page 90) for more information about encryption.

Passwords, pins and biometrics

Passwords, PINs and biometrics are used online to authenticate a user so that they can access an online system, Users should make sure that their password is:
■More than eight characters long
■A mix of letters, numbers and symbols
■A mix of uppercase and lowercase letters
■Made up of random characters (that is, not common words, names or dates)
■Changed frequently

■something that they have not used before.

When entering a password or a PIN, the characters are often **masked** so that anyone watching the screen cannot see what is typed.

SUBJECT VOCABULARY

masked hidden

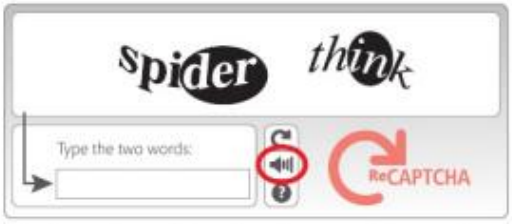
Captcha tests and security questions

When users create an online account, they may be given a test called a **CAPTCHA** test. CAPTCHA tests are used to make sure that data is entered by a human and not by an automatic software program known as a **bot** or web robot.

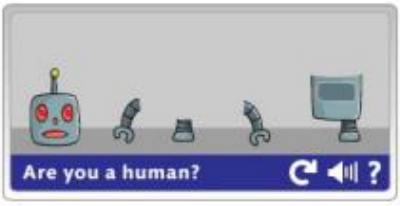
SUBJECT VOCABULARY

CAPTCHA a computer program or system that can identify whether a user is a human or a computer
bot a computer program that can interact with systems or users

▲ Figure 6.7 Image identification CAPTCHA tests are another way of checking that users are human



▲ Figure 6.8 CAPTCHA tests can play audio versions for users who cannot read the text



▲ Figure 6.9 CAPTCHA tests can ask users to complete more challenging tasks

Anti – malware

Anti-malware prevents malware from accessing or operating on computers. It scans computer files in **real time** and allows users to scan files, folders, disks or whole systems.

ANTI-VIRUS

A **virus** is malware that uses networks to spread to connected devices. Viruses are spread via communication software such as email or web browsers or by being loaded into a computer's memory from external storage such as USB flash drives. However, they have unique **virus definitions** that can be identified by anti-virus software.

▲ Figure 6.11 A virus checker can quarantine an infected file so that it cannot infect other files

Anti-virus software constantly checks files that are downloaded and loaded by a computer for signs of virus definitions. If the anti-virus software finds a match, it **quarantines** the file so that it cannot be run.

ANTI-ADWARE

Adware displays unwanted adverts to users. Anti-adware software detects, quarantines and removes adware.

ANTI-SPYWARE

Spyware secretly monitors and records computer data and user input. Criminals can then analyse this information to identify a user's passwords for websites, or financial data such as credit card numbers and security codes.

Access rights and file permission

Permissions can be set for access to files, folders or drives, allowing users to read only or read and write to the file.

SUBJECT VOCABULARY

real time processing data within milliseconds of it being input and making the output available almost immediately
virus malware that uses networks to spread to connected devices
virus definitions sequences of code that are found in computer viruses
quarantine isolate a suspected virus in a protected area of storage where it cannot harm other files

SUBJECT VOCABULARY

adware software that displays unwanted adverts
spyware software that monitors and records data and user input

SUBJECT VOCABULARY

permissions authorisation settings that provide the ability for a user or users to access files, folders or drives

Secure websites

Hypertext Transfer Protocol (HTTP) is used to exchange data between a web server and a client (that is, a computer that is accessing the web server). However, data transferred using HTTP is not secure, so **Hypertext Transfer Protocol Secure (HTTPS)** was developed. HTTPS authenticates **payment servers** and provides encryption using Secure Socket Layer (SSL) and, more recently, Transport Layer Security (TLS).

▲ Figure 6.13 A green padlock is used by most browsers to indicate that a website is secure

SUBJECT VOCABULARY

legitimate website a website that is operated legally

Email attachments

Users should always be careful when opening email attachments or hyperlinks in emails and other messages. This is because some are fake and designed to steal users' personal information (see page 98). Users should ensure that their anti-malware software is up to date and be especially careful if:

- They do not recognise the sender
- The text is general, impersonal or irrelevant to the user
- The text contains spelling or grammatical errors
- The attached file is an **executable file** such as an .exe or .zip file
- The text contains a message telling the user to do something immediately
- The user does not recognise the URL.

SUBJECT VOCABULARY

executable file a computer file that can be run as a program
hover over use the mouse to position the cursor on an object on a computer screen without clicking on the object

Backup procedures

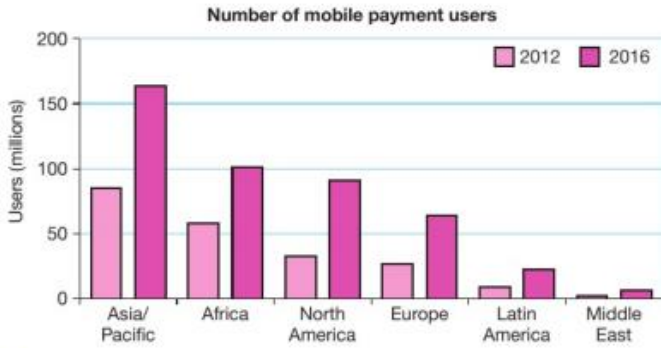
Backups are data copies stored on external devices or online storage, providing security even if the original device fails or is damaged. Users must decide on the number and frequency of backups, as regular backups require more storage space, while less frequent backups may result in data loss.

Loss of files or damage to files can be caused by:
■Theft
■Flooding or fire
■ Malware
■ Power cuts.

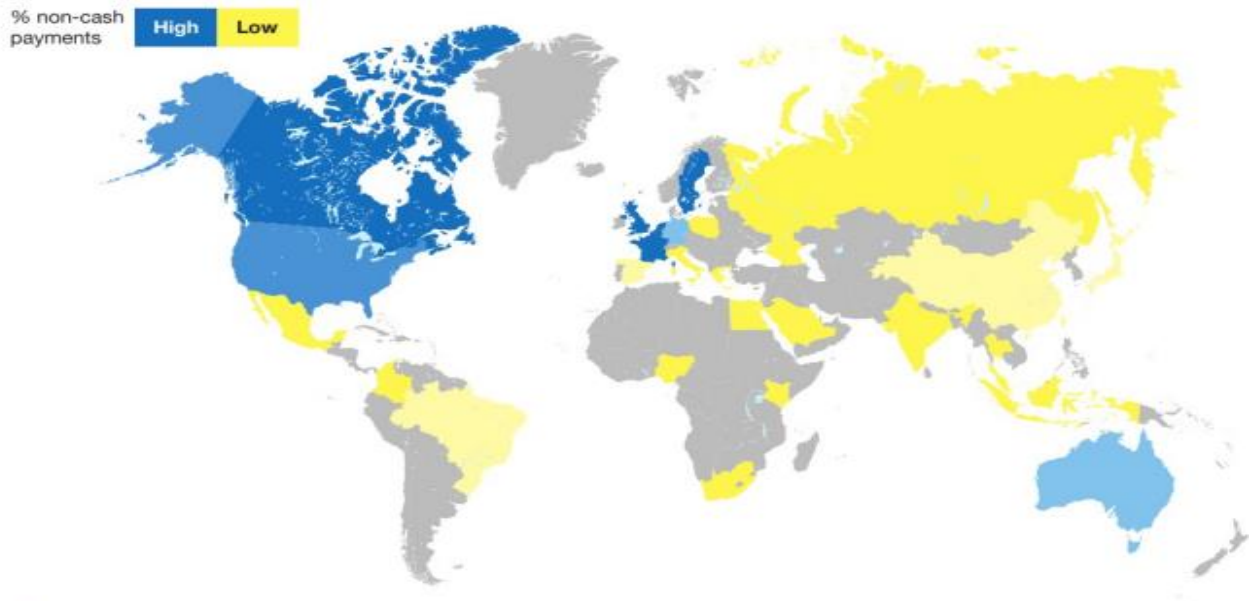
Good ideas for backup procedures are as follows.
■Set automatic backups.
■Do not use optical media because they deteriorate over time and are fragile.
■Schedule backups for late in the evening when users will not be using the data that is being backed up to avoid conflicts.
■Create more than one copy.
■Keep one copy of a folder containing important files backed up using online storage.
■Store copies at multiple locations.
■Store important data in a fireproof safe.

Online payments systems

▲ Figure 6.14 Many countries are moving quickly towards a **cashless society**



▲ Figure 6.16 Mobile payments are a growing area



▲ Figure 6.15 The percentage of people using non-cash payments differs in different countries around the world

Online – third party payment process

PayPal and Skrill enable users to create accounts for online payments, enabling easy and faster shopping through email identification and systems that link with online applications.

SUBJECT VOCABULARY

payment processor a computer that authorises financial transactions

Bank cards

Bank cards allow customers to pay for goods and services online and in shops. When paying online, you usually need to enter the:

- Card number
- Expiry date (and sometimes the start date) of the card name on the card
- Three- or four-digit card security code (CSC).

▲ **Figure 6.17** A bank card contains a number of security and identifying features

▲ **Figure 6.18** Systems are used to authenticate people using payment cards online

Contactless cards using NFC

Contactless cards utilize NFC technology for data transfer without PIN or user authentication. When a card **reader** is in range, **contactless** cards accept up to a limited amount for fraud prevention.

SUBJECT VOCABULARY

reader a piece of electronic equipment that can read information that is stored or recorded somewhere, for example, on a card

contactless users can use a contactless debit card or credit card to pay for things by waving it over a machine, without using a pin number

SUBJECT VOCABULARY

smartwatch a watch that provides data connectivity and often uses sensors to provide feedback to the device about its environment

10 MASTERCARD® IS A REGISTERED TRADEMARK OF MASTERCARD INTERNATIONAL, INC.

Chapter 07

Impact of the internet

The internet

The internet is not the same thing as the World Wide Web. The internet is the interconnected network of computers that provides many online services to users. The World Wide Web is just one use of the internet.

Protocols are used by applications to transfer data across the internet. These protocols include:

- IMAP (internet message access protocol) for email
- FTP (file transfer protocol) for sending files
- SSH (secure shell) for secure remote logins

■ VoIP (voice over internet protocol), used for voice call services like Skype
■ XMPP (extensible messaging presence protocol), used for messaging services like WhatsApp
■ HTTP (hypertext transfer protocol), used for the World Wide Web.

SUBJECT VOCABULARY

protocols rules that allow the exchange and transmission of data between devices

Impact of the internet on individuals

Internet and sources

The internet has revolutionized people's lives and work by providing greater access to information and services, including news, sports, and weather. It allows information to spread quickly, ensuring up-to-dateness. Unlike television and radio, the internet offers both advantages and disadvantages.

▼ Table 7.1 The impact of the internet on individuals' access to information services

TELEVISION AND RADIO		INTERNET
Only broadcast at certain times	→	Available all the time
Only a few channels	→	Millions of channels
Content decided by editors	→	Not always edited
Only available within range of a transmitter	→	Access from anywhere with a connection
Limited access to news from other countries	→	More open access, though some content is geo-restricted
Held to enforceable standards	→	Not always held to enforceable standards

SUBJECT VOCABULARY

meme a photo, a piece of video, a joke or similar content that spreads quickly on the internet
interactivity the ability of a computer to respond to input

As well as access to news, sport and weather information, users can also use the internet to:
■ Access booking systems for travel, leisure and entertainment
■Do their shopping and banking
■Study using virtual learning environments (VLEs), with online support from teachers and other students.

Employment

SKILL REQUIREMENTS

Employers now mandate employees to use the internet for work, necessitating the development of new skills. Journalists must now post, update, and interact on social media, blogs, and smartphones, requiring strong typing and proofreading abilities. Teachers must also be familiar with internet-based information and services to teach students and manage online risks.

NEW JOB OPPORTUNITIES AS THE NATURE OF JOBS CHANGES

The internet is revolutionizing various professions, offering new job opportunities. For instance, plumbers can now offer smart systems controlled by digital devices, extending their skills. This shift in work requires skilled workers to support this development, including training, advice, and maintenance of digital devices and software. This shift in work is transforming the way people work.

JOB LOSSES

If employees do not keep updating their skills in the use of the internet, they may not have the skills required to carry out new work.

Working practices

COLLABORATIVE WORKING

Collaborative working allows work to be split into a number of individual tasks, each of which can be done by a different employee. This has benefits and drawbacks.

■ Benefits
• Each employee can focus on one task.
• Employees become experts in their area through (narrow) experience or training.

■ Drawbacks
• Employees do not share their skills and expertise.
• Employees have reduced understanding of the whole project.

Collaborative working also allows more than one person to work on a task at the same time. This also has benefits and drawbacks.

Benefits
• Expertise is shared.
• Employees can check each other's work.

Drawbacks
• It can be difficult for lots of people to agree.
• It can be difficult to co-ordinate the work of many employees.

FLEXIBLE WORKING

Flexible working is a way of working that suits an employee's needs. This is possible because employees can use the internet to access systems from anywhere with an internet connection at any time of day.
Flexible working has benefits, but it also has drawbacks.

Benefits
• Employees can work at a time of day that is right for them and take breaks whenever they need to.
• Employees can fit their work around their family life.

■ Drawbacks
• Employees do not meet face to face as much, which can reduce their understanding of each other and their employer.
• Employees may not manage their work effectively, which could affect their home life or cause exhaustion.

The flexibility provided by the internet also enables employees to work when they are travelling. For example, mobile working allows employees to work on their way to and from the office. It also allows employees who work on the move, such as repair engineers and salespeople, to access to up-to-date data when on-site or at a client's location. This also has benefits and drawbacks.

■ Benefits
• Employees can access up-to-date information.
• Employees can work from anywhere with an internet connection.

■ Drawbacks
• Employees could become exhausted if they work longer hours than expected when travelling.
• They may not have access to the same facilities or resources as employees who only work in one place.

Social impact

SUBJECT VOCABULARY

social network applications software that allows social interaction and the creation of links between users based on shared characteristics and interests

Social interaction

Humans are naturally social, requiring interaction with others. The internet provides opportunities for communication through online gaming, video, instant messaging, and social networking. However, concerns arise about the potential harm to communication and emotional understanding in virtual environments. Psychologists and child behavior experts are studying the effects of developing social skills in virtual environments. Some argue that connecting with others online is beneficial, as it broadens cultural awareness and broadens perspectives. However, some argue that socializing online may lead to connecting with people who share similar thoughts or are suggested by **social network applications.**

Cyberbullying

Cyberbullying refers to the use of the internet to send hurtful messages, images, or multimedia to upset or embarrass someone. Online bullying can be equally distressing as offline bullying, with bullies often hiding their identity. However, most online communication is easily monitored and can be found by identifying the device used.

Physical activity

Online access reduces travel and physical activity, potentially impacting health. However, some argue that location-based games like Pokémon Go and fitness communities can promote physical activity, as users can receive encouragement from others. This could potentially encourage regular exercise in daily life.

▲ **Figure 7.5** Some uses of the internet encourage users to be physically active

Staying staff online

To stay safe when using the internet, users should follow three main rules.

- Zip it
- Block it
- Flag it

▲ **Figure 7.6** Governments in many countries have launched online campaigns to help young people stay safe when using the internet

ZIP IT

Keep your personal information private and do not share it with strangers. This includes being careful about what personal information you share online. Examples of personal information you should not share include your:
■ Location
■School name
■Phone number
■ Real name
■ Photos
■Mailing address or email address.

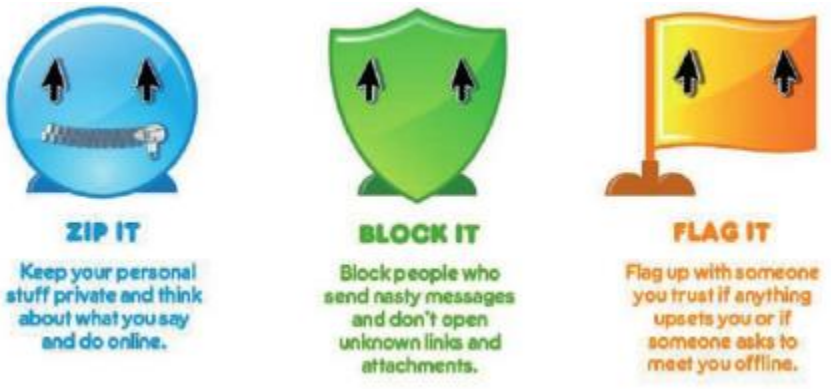
You can use **privacy settings** on social networks to stop strangers from viewing your profile. You should also use a strong password that you change regularly and never give it to anyone, even your friends.

BLOCK IT

Always block offensive messages or friend requests from strangers on social networking sites. Do not open suspicious attachments or links, and you can use safe search filters to reduce the chance of seeing age-inappropriate content.

FLAG IT

You should always tell an adult if something online upsets you or if someone you don't know requests to meet you. Users can also report grooming behaviour to national crime agencies.



▲ **Figure 7.7** Follow these rules to help you stay safe online

SUBJECT VOCABULARY

privacy settings a method that allows users to control who can see information from their online profiles

DIGITAL FOOTPRINT

Your **digital footprint** is the impression that you leave online. Much of what you share online can be recorded forever, either on archive sites or as backups.

Content can be easily viewed by people whom you did not expect to see it. It can also be copied and shared easily, which means that it could become available to more people than you expect.

Ask yourself the following questions before sharing content online.

Would I show this to my parents or grandparents?
■When I am looking for a job in the future, what will employers think if they see this?
■Could people misinterpret this, either now or in the future?
■Am I happy for this to be shared by people that I don't know?
■You can minimise your digital footprint by:
■closing your old social media accounts and requesting that all archive data is deleted
■searching for your own name online and see what information about you is publicly available
■asking website owners to remove old content that is out of date, irrelevant or false
■reading the terms and conditions when you create online accounts, because some services still have rights over your data even after you close your account.

Benefits of working from home

■Benefits to individuals
■Can spend more time working or resting, because they spend less time travelling to work.

■No need to wear a uniform or business clothes, which reduces cost.
■Can work at a time to suit them.
■Can work on tasks for longer periods of time without distractions from colleagues or scheduled meetings.
Can work in a comfortable environment.
■Can organise work around social or family commitments.

Benefits to organisations
■Can attract a talented, motivated workforce.
■Can employ people who are located anywhere because they do not need to travel.
■Do not need to buy or rent office space or furniture for employees.
■Workers do not have to commute, so will not be delayed getting to work by weather or transport issues.
■Workers may work more effectively at home.

Drawbacks of working from home

Drawbacks to individuals
■May be distractions at home, such as family and leisure activities.
■Suffer from a lack of social interaction with colleagues.
■Feel disconnected from the company.

Drawbacks to organisations
■May be concerns about data security.
■May be more difficult to manage and support employees who are not in the office.
■ Employees working at home might not work as hard.
■Can be complicated to organise payments and permissions for workers in different countries.

Figure 7.11 Some organisations like Google™ provide **perks** like sleep pods at their offices to encourage their employees to feel more at home in the office

Figure 7.10 Working from home can also have drawbacks for both individuals and

SUBJECT VOCABULARY

in-video advertising advertisements that appear within online videos
viral marketing a type of advertising used by internet companies in which computer users pass on advertising messages or images through email, sometimes without realising that they are doing so
cookies information that a website stores on a user's computer so that the website recognises the user when they use it again
profile compilation of personal information about an individual

Impact of the internet on organizations

Positive impacts

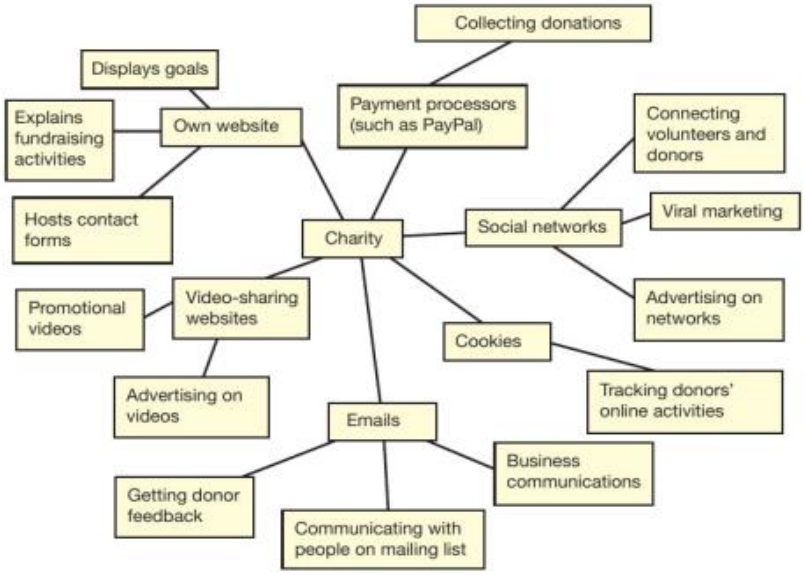
Organisations can enhance communication and interaction with customers and employees through email, instant messaging, and social media, providing real-time updates on product development, pricing, and availability, and publishing live information online.

Access to global market

The internet has revolutionized global markets, enabling organizations to advertise and sell globally, reduce postage costs, and facilitate communication between manufacturers and businesses producing materials and parts.

Access to global workhouse

The internet enables organisations to employ people globally, allowing them to be more selective in hiring, utilizing different skills and time zones, and potentially reducing costs due to lower wages in some countries. This flexibility allows for better utilization of resources and time zones.



▲ **Figure 7.12** A charity can use many internet services to communicate with different groups of people

HOW INFORMATION IS MANAGED AND USED

Big data can be utilized by organizations to understand customer behavior, improve customer experience, and streamline processes. For instance, a computer game retailer can predict game sales based on social media posts, browsing patterns, and ratings, ensuring sufficient stock to meet demand.

▲ **Figure 7.13** Companies often use teams in different time zones in order to provide 24-hour customer support, with all employees working in daylight hours in their local area

Negative impacts

SECURITY ISSUES

Organisations store private, valuable data in central locations, which can be secured with walls, locks, alarms, and security guards. However, employees often work from home, requiring internet access.

They do so use three methods:

■Allowing employees to transfer a copy of the organisation's data to home via email
■Providing remote access to the data stored in the organisation's building, such as by using a VPN
■Storing data on another company's servers and providing access to that data. Each of these methods means that the data is more vulnerable to being accessed by an unauthorised user than it would be if it remained in a central location.

There are three main ways in which unauthorised users can gain access to systems.

■Authorised users reveal their login details, either intentionally or unintentionally, such as by losing paper copies of their login details, saving their login details to a computer that they lose, being pressured into telling someone their details or having passwords which are easy to guess. Organisations

■Unauthorised users intercept the data, either as it is transferred over the internet from the organisation to the employee's computer or as it is transferred within the employee's LAN after it has been transferred via the internet (WAN).

■ Unauthorised users hack into the organisation's systems. To prevent access to their systems from the internet, organisations use authentication, firewalls and intrusion detection systems.

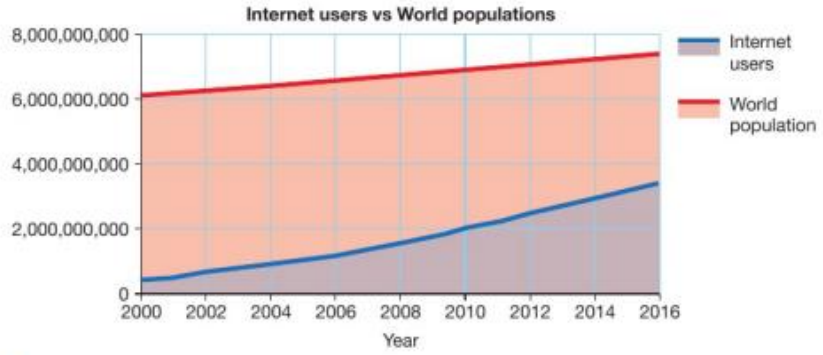
GREATER COMPETITION

In the past, organisations usually competed with other organisations in their local area or their own country. However, the use of the internet means that organisations must now compete in a global marketplace. In some industries, there are more organisations with which to compete. Large organisations can also become less attractive to customers because they may be less flexible than small online businesses.

Impact of the internet in the society

The causes of unequal access to ICT

Access to information and communication technology (ICT) is not equal. The difference between those with technology and those without is often referred to as the **digital divide.**



▲ **Figure 7.15** Although more people are able to access the internet than ever before, it is still not available to all

SUBJECT VOCABULARY

digital divide the gap between people who have access to digital devices and the internet and people who do not

■ **Economy and infrastructure**: Countries with advanced economies can afford to invest in the infrastructure required to provide access to networks and the internet. In countries with emerging and developing economies, governments may prioritise other needs, such as food and healthcare, rather than access to digital technologies.

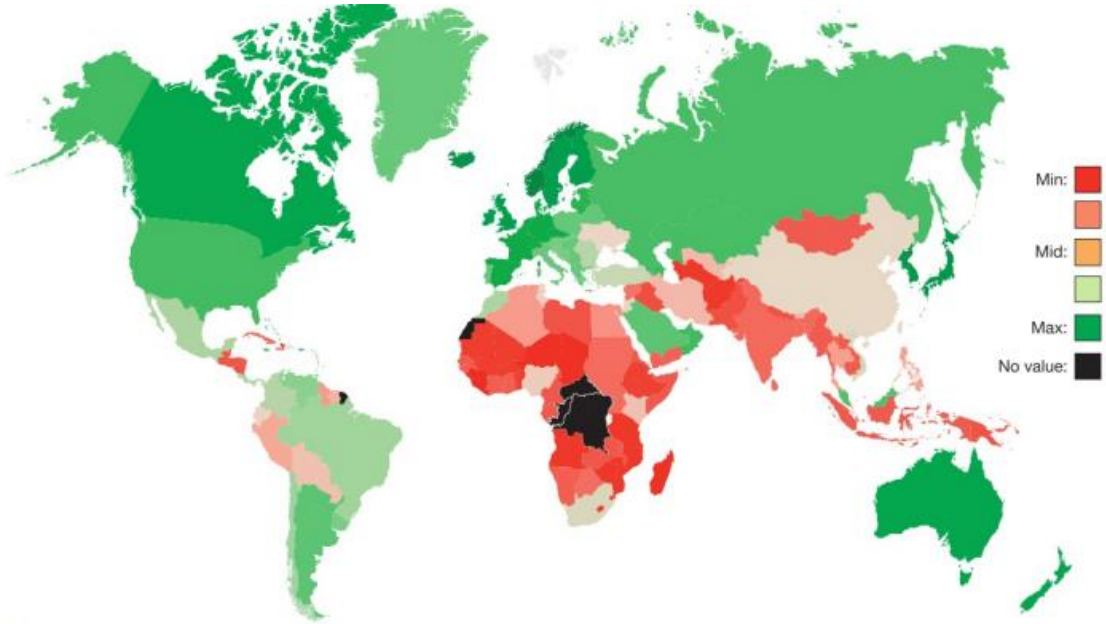
■ Location: People may not be able to access online systems in remote locations..

■ Politics: Governments that want to control access to information can either prevent or reduce access to the internet for their citizens. Some governments do not allow people to visit certain websites or content from other countries.

■ Religion: Some religions ban access to certain technologies.

■Disability: If digital devices are not designed to be inclusive, people with disabilities can find accessing technology more difficult and may have to rely on adaptations to be able to use ICT.

■Social factors: In every region of the world, social factors such as age, gender, education and income affect people's ability to access ICT.



▲ **Figure 7.16** Lots of people in many regions of the world use the internet, but the proportion of internet users is smaller in Africa and South Asia

The impact of limited or no access to digital technologies

If an individual or community has limited or no access to digital technologies, they have less access to communication with other people. This makes them more isolated and can reduce their understanding of different cultures. It also reduces the availability of:

- Goods and services, affecting people's ability to find bargains and good deals
- Entertainment, reducing people's access to popular culture
- Education, reducing people's employment opportunities.

The impact of less restricted access to networks

Online content is controlled by moderators and programs, influencing users' viewing and reading habits. **User-generated** sites like Wikipedia challenge societal beliefs about expertise, allowing ordinary people to post information that may or may not be true. The internet has created billionaires and provided millions of volunteers for free work. It has also impacted law enforcement, as seen in the 2011 riots in England, where mobile phone networks were used to spread messages and organize rioters. Police also used CCTV cameras to record rioters' actions, and footage captured on smartphones was uploaded to photo blogging websites. The internet has also been used by citizens for clean-up events and the **digital humanitarian movement**, as seen in Kenya's 2007 civil unrest and tribal violence. The digital humanitarian movement provided a platform for citizens to record and map attacks, putting pressure on authorities to reduce attacks on citizens.

▲ Figure 7.19 The internet gave citizens the ability to spread information about the 2011 riots in England

▲ Figure 7.20 By 10am on the morning after the third day of rioting, the tag #riotcleanup was the top trending tag in the UK and second worldwide

The gap between information rich and information poor

People who are **information rich** have good access to information. This improves their level of education and enhances their ability to make decisions. In comparison, people who are **information poor** have reduced access to information, which decreases their education and reduces their ability to make decisions.

The impact of the internet on changes in ways of socializing

The rise in internet usage has led to a greater focus on the virtual world, potentially affecting people's thinking and relationships. While it allows people to connect with strangers, it can also lead to isolation from family and local communities. The constant communication of status updates on digital devices has made friendships seem meaningless, as even strangers can be labeled as friends. This has led to concerns about the impact of social media on our understanding of relationships and the importance of personal connections.

SUBJECT VOCABULARY

information rich people with good access to information provided by communication technologies
information poor people with limited access to information provided by communication technologies

SUBJECT VOCABULARY

status update a message or post that a user adds to their own social media page to inform others of something that they consider important enough to share

Chapter 08 - Online communities

Features and functions of different online communities

SUBJECT VOCABULARY

online community a group of people with a shared common interest who communicate online
member someone who is part of an online community

Each type of online community has:
■A **function**, which is what it does for people who use it
■**features**, which enable (or allow it to achieve) its function.

Different online communities provide different features that their **members** can use to interact with each other.

Social networking communities

Social networking is the practice of forming groups in a society. This is something that humans have been doing for a long time before the invention of the computer.

THE FUNCTION OF SOCIAL NETWORKING COMMUNITIES

Online social network communities, including professional networks like LinkedInR and personal networks like Facebook, allow members to connect through shared interests or relationships. These networks, like digital devices, are combining features and use, allowing professionals, businesses, and personal relationships to connect.

FEATURES THAT ENABLE THE FUNCTION OF SOCIAL NETWORKING COMMUNITIES Profiles

A profile is a collection of user information that allows members to decide which information should be public, visible to certain people, or not visible at all.

Profiles can be personalised by members, and they can include:
biographical details such as name, gender, date of birth, location and language
■An 'about you' or short description of the user
■Details about the user's work and education
■Travel history
■Family details such as relationship status, family members and pets
■Contact information such as telephone number, email address and website
■Profile and background images, colour schemes and designs.

SUBJECT VOCABULARY

profile a collection of information about a user

Friend, follow and connect

Different social networking communities have similar features that allow users to add someone to their social network. These can be known by many different names such as friend, follow and connect.

▲ **Figure 8.2** Examples of buttons on social media networks that allow users to add people to their networks

Stream, wall and timeline

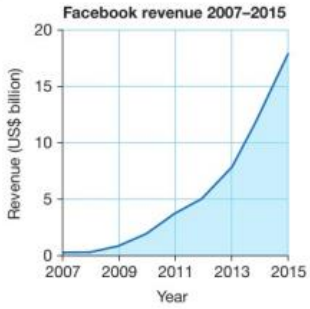
A user's stream, wall or timeline is the place where the posts from members' friends appear.

SUBJECT VOCABULARY

post (noun) a message sent to an internet discussion group so that all members of the group can read it

Status updates and posts

Social networks are powerful marketing tools due to the vast amount of information shared by members. These **posts**, which can be either private or public, enable owners to analyze and sell this data to advertisers, enabling **targeted marketing**, where relevant sponsored posts are targeted to matched members.



▲ **Figure 8.4** Selling the use of members' personal information for targeted marketing is a key part of Facebook's revenue, and helped the business to earn almost US $18 billion in 2015

SUBJECT VOCABULARY

post (verb) to put a message or computer document on the internet so that other people can see it
targeted marketing advertising that is matched to internet users based on their attributes, such as their age group or their gender, or their internet browsing history

Groups, lists and circles

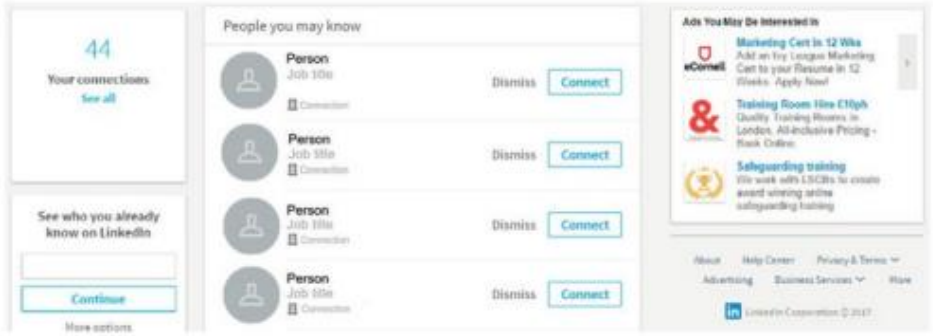
Social networking communities enable members to create named groups, lists, or circles, allowing posts to be visible only to members within those groups, allowing for effective communication between smaller teams and organizations.

Tags

Tags allow members to categorise the content that they create and post on social networking communities. Other members can then search for content using the tags that were added to the content when it was posted.

User suggestions

Social networking communities suggest other members that users might want to connect with. They often do this by analysing a user's interests and the interests of people within that user's social network, then matches them to friends of existing **connections**.



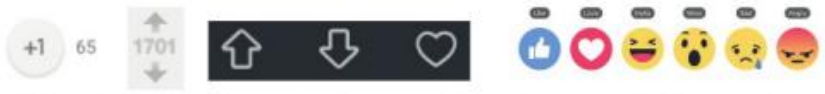
▲ **Figure 8.6** An example of a 'Do you know?' web page on a social networking community

SUBJECT VOCABULARY

tag a label that you can add to a post
connections people or accounts to whom a user is connected

Reactions, ratings, likes, upvotes and downvotes

Social networking communities allow users to express reactions to posts, ratings, likes, upvotes, and downvotes, enabling users to recommend and recommend content. However, downvotes can send negative messages, a concern that social networking communities typically avoid.



▲ **Figure 8.7** Examples of buttons that allow users to interact with a post using likes, reactions and ratings

SUBJECT VOCABULARY

viral something that is circulated widely by being shared through networks to large numbers of internet users

Share

Share functionality in social networking communities enables members to replicate posts, resulting in viral content that spreads beyond the creator's network.

Comments and quotes

Social networking communities provide different ways for members to write comments about other members' posts. This functionality allows members to have online conversations and to communicate with each other.

▲ **Figure 8.9** Examples of buttons that allow users to comment on content

Third-party integration

Many websites now include direct links to social networking sites so that people can easily share the information provided on the third-party website.

ADDITIONAL FEATURES OF SOCIAL NETWORKING COMMUNITIES

Add content to posts

Allowing members to add content such as photographs, videos and URLs to their posts means that members can share their experiences in different ways. This feature usually allows users to preview the content before they post it.

Private or direct messages

Most social networking communities allow their members to send private messages to each other, rather than having to post messages publicly.

Notifications

Notifications tell members about new activities within a social networking community. They help keep members involved with the rest of the community.

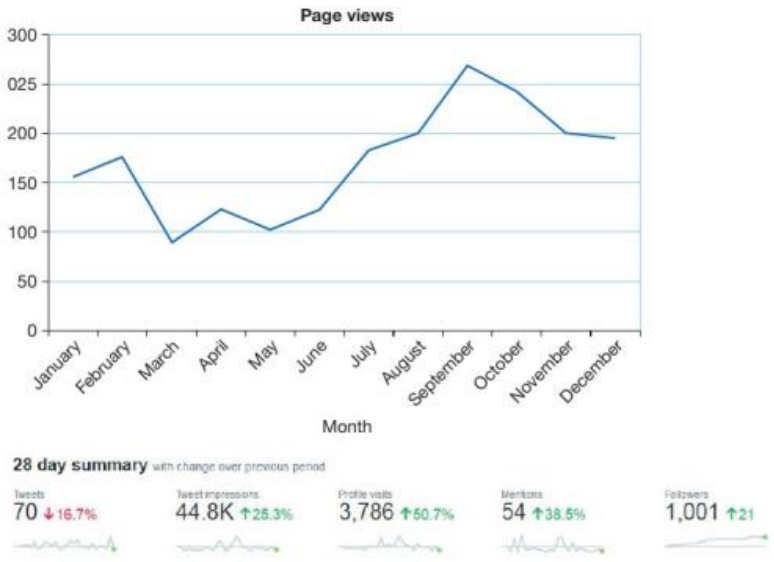
▲ Figure 8.11 Examples of notification icons

SUBJECT VOCABULARY

notification an alert that tells a user about a new interaction or new content within a social networking community

Analytics

Social network analytics services help individuals and organizations identify effective communications, increase network size, and gain new followers. The size and activity of the community also influence promotion, as more members engage, providing a larger market for businesses.



▲ Figure 8.12 Examples of analytics services that are available on social networking communities

SUBJECT VOCABULARY

analytics information that results from the analysis of data

SUBJECT VOCABULARY

Massively Multiplayer Online Role-playing Game (MMORPG) an online video game that allows large numbers of people to play together

multiplayer games games that are played by more than one person, usually online

experience points credits earned by a user for completing one part of a game

forum a website or web page where users can post comments and information and reply to other users' comments

Online gaming communities

Examples of online gaming include PlayStation Network, Xbox Live, Steam@10 and **Massively Multiplayer Online Role-playing Games (MMORPGs).**

THE FUNCTION OF ONLINE GAMING COMMUNITIES

Online gaming communities exist to allow members of the community to play multiplayer games together.

FEATURES THAT ENABLE THE FUNCTION OF ONLINE GAMING COMMUNITIES

The features that support the function of online gaming communities include:

■Links to social media
■User profiles
■Information that allows users to find out how to complete games
■**Experience points** that can be tracked and displayed on a user's profile.
■Discussion boards and **forums** that allow members to discuss tactics
■Statuses that allow users to see if other members are online
■Notifications about what is happening in the game.

Online workspaces

THE FUNCTION OF ONLINE WORKSPACES
Online workspaces exist so that members of the community can collaborate for the purposes of work.

FEATURES THAT ENABLE THE FUNCTION OF ONLINE WORKSPACES

The features that support the function of online workspaces include:

■**cloud storage** and web applications that allow members to work on documents through web browsers
comments that can be left on documents for other users to see and reply to
■ enabling documents to be edited at the same time by two or more members, which allows users to develop the documents together
■Messaging systems so that members can discuss the work
■Shared calendars so users can see each other's diaries and arrange meetings
■Shared **contact lists**
■**Chat rooms** to allow discussion of work
■Systems for booking resources such as ICT equipment, meeting rooms and transport

SUBJECT VOCABULARY

cloud storage storage provided by servers that are connected to the internet
contact list a virtual address book that allows users to quickly access the contact details of friends and colleagues
chat room a place on the internet where users can write messages to other people and receive messages back from them immediately

virtual meeting spaces with the ability for members to:
• Give and watch presentations
• Speak to each other using VoIP
• Use video conferencing tools.

Virtual learning environments

Examples of virtual learning environments (VLES) include Pearson Active Teach, Google Classroom TM 12, Moodle TM, Schoology® and Blackboard®.

THE FUNCTION OF VLES

VLES are used to allow students and teachers to use learning and assessment materials.

FEATURES THAT ENABLE THE FUNCTION OF VLES

The features that support the function of VLES are very similar to those found in online workspaces.

Features of VLEs include:
■ A wall or timeline like those on social networking communities that contains posts by teachers and students

■ A notice board for announcements about the course
■The ability to share audio, video, web links or files
■Quizzes or multiple-choice tests that are often graded automatically tools for submitting assignments.

communication tools, with posts usually moderated by the teacher:
• Forums for discussions
• Chat rooms
• Wikis
• Blogs
• Third-party integration, such as social networking features.

VLES also have the following additional features.

■Log-in system: This is often linked to the school or college's information management systems so that students are logged in automatically if they are already registered on their institution's network. This is known as **single sign on.**

■Document editors: These allow teachers to create and edit documents that students can use and sometimes collaborate on with their teachers.

■**Gradebooks**: These allow teachers and students to monitor progress through course materials and assignments.

■ **Access statistics**: These allow teachers to track how frequently students access and use the VLE's facilities.

User – generated reference sites

User-generated reference sites are information websites created and maintained by communities of members.

WIKIS

A wiki is a website or database that is developed by several collaborating users, all of whom can add and edit content.

The function of wikis

The function of a wiki is to allow members of the community to collaborate in order to build and edit web pages.

Features that enable the function of wikis

The features that enable the function of wikis include:
■Member accounts, which allow users to track which edits have been made by which members of the community
■An edit button, which takes editors to a text editor so that they can edit the content
■Structured language, which allows members to format web pages or add links to other content
■Search tools.

SUBJECT VOCABULARY

wiki a website or database that is developed by a number of collaborating users, all of whom can add and edit content

FORUMS

An online forum is a website or web page where users can post comments and information and reply to other users' comments. Forums are also known as bulletin boards or message boards.

The function of forums

Forums provide members of the community with online spaces for structured discussions. Posts on the forum are arranged in topics or **threads**.

Features that enable the function of forums

The features that enable the function of a forum include:

■Groups, allowing members in one group to have different levels of access or rights to members in other groups
■Moderators, who are members who have the right to allow or block posts or members
■Administrators, who are members with the same privileges as moderators plus some additional rights,
■Posts, which are messages sent by members to the group
■Threads, which are topics for conversation, with replies usually arranged and sorted by date or topic
■Sticky notes or stickies, which are threads kept at the top of the list of threads to make them easily accessible to members
■Ratings, which allow members of the community to rate other members' posts and enable members to see how helpful or genuine the posts are
■Private or direct message functions, which allow members of the community to send private messages to each other;

Many forums also include a number of safety features.

■**Word or URL censoring**: When posts are submitted to a forum, they are scanned (usually automatically by software) for inappropriate words and URLs.
■**Ignore or block**: These are safety features that mute members or stop them from being able to access the forum. These are often applied across the whole forum by moderators or administrators.
■**Rules and responsible or acceptable use policies**: These tell members what they can and cannot do on the forum.
■**Report or flag a user or post**: This feature allows members to tell moderators if other members have broken the rules of the forum.

User-generated content

VIDEO-SHARING AND PHOTO-SHARING SITES

The function of video-sharing and photo-sharing sites

These sites allow people to access and share content created and uploaded by members of the community.

Features that enable the function of video-sharing and photo-sharing sites

The features that enable the function of video- and photo-sharing sites include:

■User accounts and profiles
■ Content management systems, which allow users to add content to a page or to edit content on a page
■Tags to categorise shared content
■Ratings, which allow users to rate shared videos and photographs
■Comments, which allow people to discuss the photographs and videos that have been shared
■Third-party integration such as social networking features, which allows users to share and react to uploaded videos or photographs on social networking sites.

BLOGS AND VLOGS

A blog is a website or web page that is updated regularly, often written like a diary or a series of articles. A vlog is a video blog.

SUBJECT VOCABULARY

blog (short for web **log**) a website or web page that is updated regularly, often written like a diary or a series of articles
vlog (short for video **log**) a video blog
blogger someone who creates or maintains a blog

The function of blogs and vlogs

Blog and **vlog** communities allow people to create online diaries of events or articles. They are very similar to wikis, but they usually contain additional features and more integration with social networking sites.

Features that enable the function of blogs and vlogs
The features that enable the function of blogs and vlogs include:
- User accounts and profiles
- Text editors, which allow bloggers to write and edit their content online
- Upload tools for adding videos and photographs
- Tags
- Ratings
- Comments
- Third-party integration such as social networking features, which allows users to share and react to the blog or vlog.

Social bookmarking sites

Social bookmarking sites allow users to categorise and share web documents and URLS so that other people can access them.

THE FUNCTION OF SOCIAL BOOKMARKING SITES

Social bookmarking sites exist to allow people to share web documents and URLS with each other.

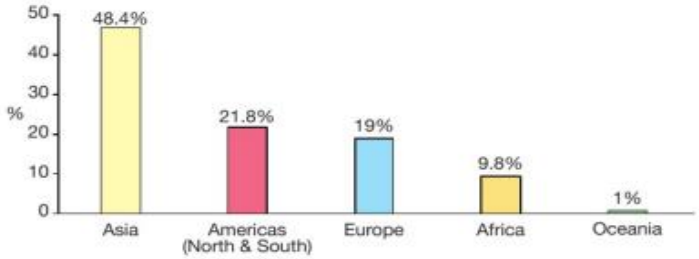
FEATURES THAT ENABLE THE FUNCTION OF SOCIAL BOOKMARKING SITES

The features that enable the function of social bookmarking sites include:

- Social networking features to connect users with each other
- Third-party integration such as social networking features, which allows users to share and react to content on social bookmarking sites directly from websites using buttons
- Tags to organise and categorise URLs
- User accounts.

THE USE OF ONLINE COMMUNITIES FOR COMMUNICATION AND COLLABORATION ON A GLOBAL SCALE

Because of the global reach of the internet, online communities are accessed by members from all over the world. Many communities have translation tools to provide wider access to their content and services.



▲ **Figure 8.13** Distribution of 2.7 billion internet users by region in 2013

HOW TO STAY SAFE ONLINE

Most online communities have features that help members of the community to stay safe online.

▲ **Figure 8.14** Most online communities allow their members to report users who break the rules of the community. This is an example from Tumblr

SUBJECT VOCABULARY

social bookmarking using tags to categorise web documents and URLs so that other people can find content by using the tags in a search

Anonymity of others and misrepresentations

Members of online communities can choose to stay anonymous online. Anonymity can protect users, but it also means that some users can misrepresent themselves by pretending to be someone that they are not.

Disclosure of personal information

Excessive online disclosure of personal information can be dangerous, as it can be used for grooming, locaters, and sharing **geotagged** photographs on photo-sharing sites.

SUBJECT VOCABULARY

geotag (verb) to add location data to a piece of content

Online community apps for mobile devices allow users to include their location in posts, allowing others to know their location. Online safety organizations advise users to limit their personal information, avoid publicizing location-related images, regularly update privacy settings, and report anyone who may misrepresent themselves or pose a risk to the community.

Cyberbullying

Cyberbullying is the term used to describe the use of the internet to send text or images in order to upset or embarrass someone. For more information about cyberbullying,

Chapter 09 – Implication of digital technologies

DATA PROTECTION

Some countries have laws to ensure that, when data is stored about individuals, that data is protected.

■Have an individual's consent to collect, use or disclose personal data
■Collect, use or disclose personal data in an appropriate manner for the circumstances and must have informed the individual of their purposes
■Collect, use or disclose personal data only for purposes that would be considered appropriate to a reasonable person in the given circumstances.

In the UK, there is a law called the Data Protection Act. This law means that organisations who are responsible for using data have to follow rules called data protection principles. These principles mean that they must make sure that the information is:

■Used fairly and lawfully
■Used for limited, specifically stated purposes
■Used in a way that is adequate, relevant and not excessive
■Accurate
■Kept for no longer than is absolutely necessary
■Handled according to people's data protection rights
■Kept safe and secure
■Not transferred outside the European Economic Area without adequate protection.

Under the Data Protection Act, individuals whose data is stored by organisations have the right to:

■Access a copy of the information comprised of their personal data
■Object to data processing that is likely to cause or is causing damage or distress to the individual
■Prevent processing for direct marketing, such as being sent newsletters or emails
■ Object to decisions that are taken by automated means
■Have inaccurate personal data rectified, blocked, erased or destroyed in certain circumstances
■Claim compensation for damages caused by a breach of the Act.

Copyright legislation

Copyright is a legal power granting creators exclusive rights to use and distribute their work. Countries have their own copyright laws, and organizations must follow them. International copyright agreements are becoming more important due to the internet. Users can download original work, which may be protected by copyright laws or international agreements. Copyright owners can distribute their work under paid licenses or free licenses like open source or Creative Commons.

Digital work owners can protect their work through copy protection and digital rights management (DRM), ensuring device permission. Geoblocking is used to restrict access to digital content across different legal frameworks.

▲ Figure 9.2 Organisations can use geoblocking to prevent global access to their work

SUBJECT VOCABULARY

geoblocking limiting access to internet content based on the user's geographical location (also known as **geolocation rights management**)

MONITORING INDIVIDUALS

Digital technologies can be used to monitor individuals. This can have benefits, but it can also have significant drawbacks and is considered controversial.

Movements

Individuals' movements can be monitored using many methods. Examples include:
■**Closed circuit television** (CCTV), which sometimes uses facial recognition software
■Automatic number plate recognition (ANPR) cameras used by law enforcement agencies such as the police
■Monitoring the use of identification cards, travel cards, passports at borders and bank card transactions

There are benefits to monitoring individuals' movements, such as being able to:
■Find people who are lost, especially young children
■Locate nearby friends to arrange to meet socially
■Identify people on networks
■Identify and locate potential criminals at events, such as checking at sporting events for fans who take part in violent behaviour
■Keep travellers safe, such as by checking for potential criminals at airports
■Verify individuals for financial transactions in order to reduce financial crime.

However, there are also drawbacks to monitoring individuals' movements, such as:
■ Compromising people's privacy
■The expense of setting up, monitoring and maintaining systems
■The energy consumption of the systems and the effect on the environment making people feel as though they are not trusted.

Communications

Monitoring individual communication, such as using parental control software, can be done through various methods. In the UK, the Investigatory Powers Act 2016 permits police access to digital communication, raising concerns about the misuse of these powers.

SAFE AND RESPONSIBLE PRACTICE

Digital technologies offer great opportunities for individuals. However, there are risks associated with their use. For more information about the safe use of digital technologies,

SUSTAINABILITY ISSUES

The use of ICT can negatively affect the environment. For example, it can use up natural resources and contributes to long-term harm to the ecology of the planet. Table 9.1 shows three ways in which the use of ICT can cause sustainability issues and lists some of the ways in which the effects of these issues can be mitigated.

▼ Table 9.1 Sustainability issues and mitigating the effects

CAUSE	SUSTAINABILITY ISSUE	MITIGATION
Power requirements of digital devices	The power is produced using **non-renewable energies**, which reduce the planet's natural resources	• Using **renewable energies** • Using more **energy-efficient** devices • Building data centres next to rivers to make use of natural **hydro-electric** power
Power requirements of cooling systems in data centres	Cooling systems use a lot of power, which is produced using non-renewable fuel sources and reduces the planet's natural resources	Building data centres in cold climates to reduce the need to artificially cool the rooms using air conditioners, which use a lot of energy
Use of poisonous substances such as bromine, mercury and chlorine in digital devices	When devices are thrown away, these chemicals leak out and can cause health risks to people's cardiovascular and central nervous systems and to wildlife; they may also cause cancer and lung disease	• Education • Recycling schemes • Laws, such as the EU's Waste Electrical and Electronic Equipment Directive • Using harmless alternative materials for components

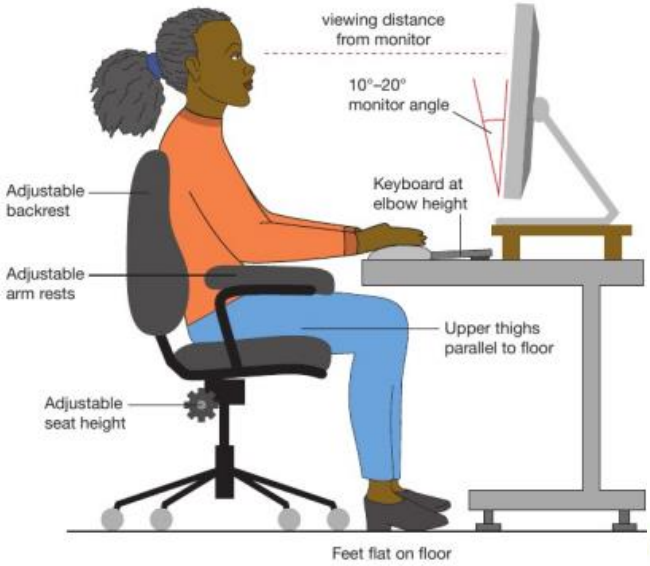
▲ Figure 9.6 Facebook built this data centre in northern Sweden so that it is cooled by Sweden's cold climate rather than an air conditioning system

HEALTH AND SAFETY ISSUES

It is important that you should know about the health and safety risks associated with digital technologies, for both you and for others. You also need to know what causes those risks and how to minimise them.

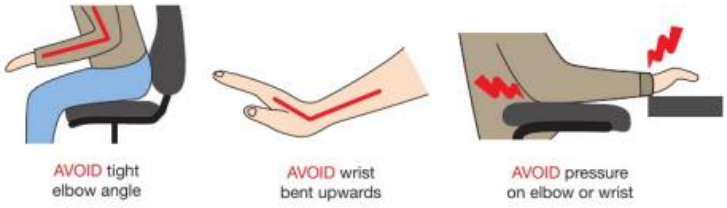
▼ Table 9.2 Risks to health and safety, their causes and ways of minimising the risk

RISK	CAUSE	HOW TO MINIMISE
Eye dryness and eye fatigue	Looking at a screen for long periods of time can cause dry, sore eyes. Human eyes are sensitive to the short wavelength (blue and blue-green) light emitted by LEDs used in digital devices. Some scientists have said that this can affect our sleep.	• Take breaks and look away from the screen into the distance regularly • Make sure the screen is not too close • Use a large enough screen • Use blue light filters • Use screens that do not **flicker** • Use suitable lighting and reduce **glare** of sunlight through windows
Repetitive Strain Injury (RSI), such as Carpal Tunnel Syndrome, which is pain caused by compressing the nerve in the wrist	• Using devices incorrectly • Poor **posture** (see Figure 9.9)	• Use **ergonomic** devices • Use ergonomic supports such as wrist pads (see Figure 9.11)
Back and neck ache	Poor posture	• Maintain correct posture when using devices (see Figure 9.8)
Trip hazards	Trailing wires	• Good cable management • Tidy and secure cables in **trunking** (see Figure 9.12)
Electric shock	• Damaged cables • Liquid on devices	• Use **residual current devices** (RCDs) on the supply to the electrical circuit • Regular cable inspections • Repair or replace damaged cables • No liquids near devices
Fire	• Overheating • **Overloaded** plug sockets	• Use cooling devices • Regular maintenance • Install **fire extinguishers** • Ensure that **plug sockets** contain **fuses** that are suitable for the devices that are plugged into them
Injury or death	Failing to notice immediate danger because of distractions caused by a digital device such as a smartphone	Do not use or be distracted by devices when near roads and other hazards



▲ **Figure 9.7** Maintaining good posture when sitting at a computer

▲ **Figure 9.10** Good cable management helps minimise risks to health and safety



▲ **Figure 9.8** Incorrect posture can cause health problems

SUBJECT VOCABULARY

artificial intelligence (AI) the ability of a computer program to make decisions that would otherwise be made by humans

Technology's increasing role in everyday life reduces control over important decisions impacting health and safety. Self-driving cars use **artificial intelligence** to make decisions about brakes, lane divider crossing, and speed limit readings. These systems can also detect lane dividers and adjust speed accordingly.

These are all useful tools. However, these AI systems do not have human judgment and cannot apply common sense. Consider the following situations.

- What if a car needs to travel over the speed limit, perhaps to avoid a hazard? Would AI software prevent the car from doing this if it was also supposed to stay under the speed limit?
- What if a car had to swerve to avoid another vehicle, but in doing so veers off the road and into a pedestrian? What would the computer decide to do in that situation? Can we know what it decided to do? Can we hold it responsible?

Chapter 10 – Online information

Information sources

Information is available from a wide range of sources. These can either be **primary sources**, which are those that you have created yourself, or **secondary sources**, which are those that have been created by someone else.

▼ **Table 10.1** Examples of primary and secondary sources

PRIMARY	SECONDARY
Photographs that you have taken yourself	Newspapers, books and maps
Interviews or questionnaires conducted by you	CDs, DVDs or Blu-rays created by others
Your own blogs, social media posts or emails	Television and radio broadcasts
Your own sound or video recordings	Websites created by other people

Search engines

Search engines help users find information online by comparing user input with web page data. They can be used in browsers or by smart personal assistants like AlexaR and SiriR14, which allow users to speak search terms aloud and receive results.

Keywords

Keywords are the words or search terms that a user types into a search engine to look for matching information. When entering keywords into a search engine, only enter the important words that you think websites will contain. Keep it simple and do not add too many keywords.

SUBJECT VOCABULARY

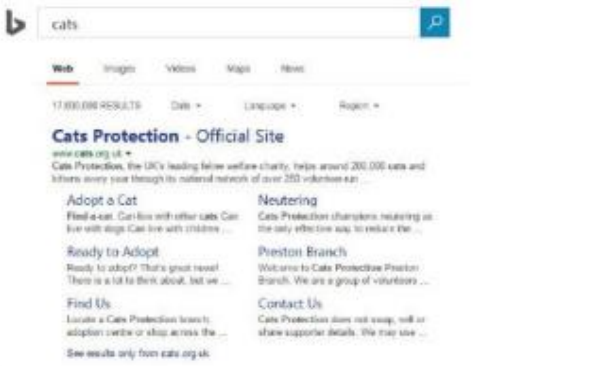
keywords the words or search terms that a user types into a search engine in order to look for matching information

Search types

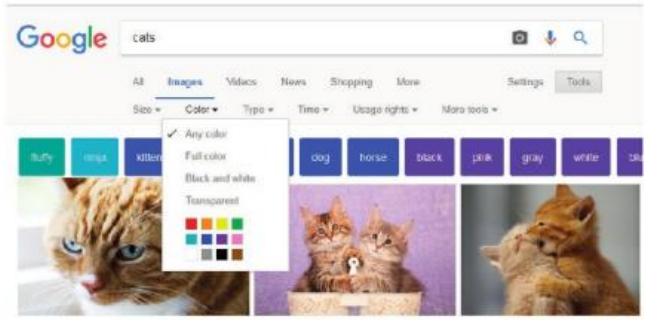
Some search engines allow you to specify the type of information that you are searching for, as shown in Figure 10.4.

Search tools

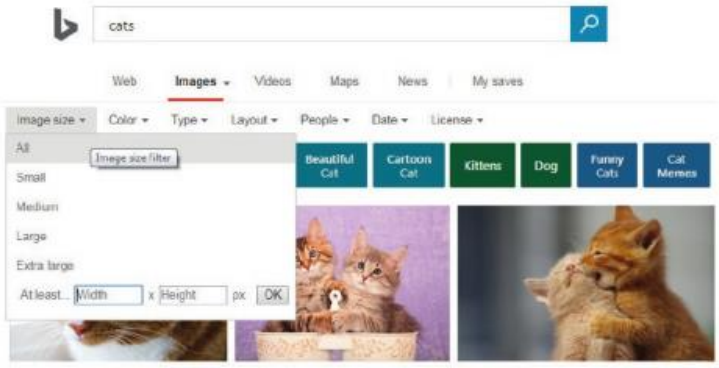
Search tools help you to filter the results that the search engine returns, as shown in Figures 10.5 and 10.6.



▲ **Figure 10.5** Search engines can filter the results by time, date, country and more



▲ **Figure 10.4** Some of the types of information you can find with a search engine



▲ **Figure 10.6** When searching for images, search engines can find specific types of images, including those with different types of copyright or **usage rights**

SUBJECT VOCABULARY

usage rights the way in which a piece of information is permitted to be used

SUBJECT VOCABULARY

autofill the automatic suggestion of a completed word or phrase that is provided as the user types
browsing history the URLs that an individual user has visited, which are stored in a file

Suggested sites and autofill

Autofill results from search engines and browsers are displayed as users type more text. These results change as more terms are added, narrowing the search for more relevant words. Other search engines suggest sites based on popular searches or **browsing history.**

Search syntax

Syntax is the rules that dictate how words and phrases are used in languages, including computing languages.

AND (+)

Adding + between words will return only results that match **both** words.

SUBJECT VOCABULARY

syntax the rules that describe how words and phrases are used in a language

NOT (-)

Adding - before a word will return only results that **do not include** that word.

PHRASE MATCHING ("")

Placing speech marks around a group of words will return only results that **include the whole phrase** with the words in that specific order.

FITNESS FOR PURPOSE

When you use information from a primary or secondary source, you need to decide whether it is suitable or good enough for the purpose for which you are planning to use it.

COPYRIGHT

If you use information, you should ensure that you have permission to do so. Some information will require you to state the owner or source of the information if you choose to use it. For more information about copyright legislation, see pages 149-150.

PLAGIARISM

The internet has made information easily available to many people. However, this means that it is becoming more common for people to copy and paste information, sometimes without even checking that it is suitable or true. Sometimes, they may even claim that this information is their own. This is known as plagiarism.

▼ Table 10.2 Methods and reasons for checking information

YOU SHOULD CHECK YOUR INFORMATION'S...	BY...	OTHERWISE IT MIGHT...
Accuracy	• Checking that the information is from a trustworthy source that has good systems for checking facts before publication • Comparing it against other trustworthy sources • Seeing if the information uses evidence to support its claims	• Be incomplete • Be false
Age	Checking the publication date	• Be too old or no longer true • Be too recent if you are looking for historical information
Relevance	Checking that the information's topic matches the topic for which you intend to use it	Not be about the topic you wanted to know about
Reliability	Comparing it against other unrelated sources to see if it matches	Not match the results from other sources of information
Bias	• Checking to see if it provides a range of viewpoints • Considering whether you could use the same information to tell a story from a different perspective • Checking for missing information: are explanations given, or does the information just give the facts? • Checking the use of any statistics and questioning them: who collected the statistics and who funded the research?	• Be too focused on one side of an issue without considering other points of view • Be prejudiced

Revision questions

1). (2023 Nov:1)

(a) Explain one benefit to customers of using an online booking system. (2)

(b) Describe the role of encryption software in an online booking system. (2)

(c) Which one of these is a network hardware device that can prevent DDOS attacks on the booking system? (1)

A. Firewall
B. Hub
C. Repeater
D. Router

(d) Give **two** types of online payment system that customers could use to pay for tickets. (2)

(e) Customers can store a digital ticket to their smartphone and access the venue by scanning their phone.

(i) Which **one** of these is the wireless technology used during this scan? (1)
A. 4G
B. Bluetooth
C. NFC
D. Wi-Fi

(ii) Explain why the venue must also provide customers with the option to print tickets. (2)

2). (2023 Nov:3)

The venue promotes events on a website.

(a) Give **two** other types of online communities the venue could use to promote events. (2)

(b) Which **one** do these causes a risk to online safety? (1)

A. Bookmarking
B. Legislation
C. Misrepresentation
D. Vlogging

(c) Describe **one** way the website can allow users to control the way their data is used. (2)

(d) Describe **one** personalisation technique the website could provide to users. (2)

(e) Which one of these describes data that is given stronger legal protection? (1)

- A Data that is inaccurate
- B Data that must be kept for 10 years or more
- C Data that must be protected against unlawful processing
- D Data that relates to religious beliefs

(f) Describe **one** method for improving the search rank of the website. (2)

(g) Explain **one** global cause of unequal access to ICT. (2)

3). (2023 Nov:4)

(a) The concert venue uses CCTV.
Discuss the legal and ethical implications of the use of digital technologies to monitor an individual's movements. (8)

4). (2023 Nov:5)
The staff at the venue work online.

(a) Explain **two** positive impacts the use of the Internet has on the venue. (4)

(b) Describe **one** method the staff can use to stay safe online. (2)

(c) Explain **two** negative social impacts on the staff of working online. (4)

(d) Discuss the sustainability issues related to ICT. (8)
You should consider these aspects of digital devices in your response:
- manufacture
- use
- disposal
- ways of mitigating their environmental impact.

5). (2022 Nov:1)
(a) Letta shares holiday photographs with her friends.

(i) Explain **one** reason why Letta shares her photographs online using a social network rather than using email. (2)

(ii) Give **one** reason why Letta does not have to get permission to share photographs she takes with her camera. (1)

6). (2022 Nov:3)

(a) Describe two positive impacts on society of increased access to technology.
Letta checks some hotel reviews on an online community. (4)

(i) Describe **one** key feature of a wiki that is different from the key features of a forum. (2)

(ii) Describe **one** way an acceptable behaviour policy will benefit an online community. (2)

(iii) Describe how **one** feature of an online community can be used to check that an acceptable behaviour policy is being followed. (2)

7). (2021 Nov:2)

(a) State **two** key features of a blog that are different from the key features of a website. (2)

(b) Kay uses software to protect her from risks online.

(i) Which **one** of these is an example of phishing? (1)

- A Email pretending to be from a bank
- B Encrypting data
- C Redirecting web traffic to a fake site
- D Website code copied without permission

(ii) Which **one** of these is a risk of phishing? (1)

- A Connectivity fault
- B Data deletion

- C Fraudulent activity
- D Power reduction

7). (2021 Nov:3)
Kay can access goods and services online.

(a) Online transactions can be tracked.
Which **one** of these is used for transaction tracking? (1)
A. Authentication
B. Backups
C. Cookies
D. Debit cards

(b) One type of online service is education and training.
(i) Give **one** other type of online service. (1)
(ii) List **two** features of a virtual learning environment (VLE). (2)

(c) Which **one** of these describes people who are 'information poor'? (1)
A Limited access to technology
B Phishing victims
C Rural communities using 4G technology
D Write access, rather than read access

(d) Describe two positive impacts of the Internet on organisations. (4)

(e) Describe two challenges of using an acceptable behaviour policy with an online community. (4)

8). (2021 Nov:4)
Kay uses the Internet to work from home.

(a) Kay does not have to waste time travelling to work. (2)
Describe **one** other positive impact the Internet has on how Kay works.

(b) When Kay logs on to a browser application at home she sees the bookmarks that she saved when she was in the office. (2)
Describe how this is made possible.

(c) Which **one** of these is the role of an ISP? (1)
A. Connects webpages to intermediate servers
B. Gives users access to the Internet
C. Prevents security leaks of company information
D. Sets up a portal for immediate access

(d) Complete the description of a secure password.
A secure password should use a minimum of eight ____ and a mixture of ____ and ____ (2)

(e) Kay is searching for some information online.
Describe **two** ways that Kay can make effective use of a search engine to select information.

(f) Kay reduces the risk of electric shock by not having uncovered drinks near her laptop. (4)
Complete the table to show **two other** health and safety risks of using ICT and **one** method of prevention for **each** risk. (4)

Health and safety risk	Method of prevention

9). (2020 Nov:1)
(a) Some people cannot go online because of their religious beliefs.
List two other causes of unequal access to ICT. (2)

10). (2020 Nov:4)
Kasuni studies online.

(a) Which **one** of these is a user-generated reference site? (1)
A. Social network
B. Wiki
C. VLE
D. Online work space

(b) Which **one** of these is a method Kasuni could use to avoid plagiarising content? (1)
A. Bias check
B. Copy and paste
C. Paraphrasing
D. Efficient search

(c) Describe how the key features of social bookmarking could be used by students completing a research project. (4)

(d) Discuss the impact of transaction tracking on the information that individuals see online. (8)

11). (2020 Nov:5)
(a) Online hackers are a threat to Deshan's data. List two other threats to Deshan's data. (2)
(b) Evaluate the tools that are available to help individuals stay safe online. (8)

12). (2019 May:3)
(a) Ruwan purchased his smartwatch online.
Describe two ways in which the Internet can impact positively on companies that sell goods. (4)

13). (2019 May:4)
Ruwan searches online for local sporting events.

(a) Ruwan evaluates the fitness for purpose of the search results.

(i) Complete this table to show how each property can **negatively** affect the fitness for purpose of information. (3)

Property	Negative effect
Bias	
Age	
Reliability	

(ii) Which **one** of these is another property of information that affects fitness for purpose? (1)

- - A Cost
- - B Keyword
- - C Plagiarism
- - D Relevance

(iii) Which **one** of these would improve the ranking of a search result? (1)

- - A Acknowledged sources
- - B Alphabetical search terms
- - C Copyrighted material
- - D Sponsored adverts

(b) Explain why Ruwan must consider his use of keywords when using a search engine. (2)

(c) Zara enters the same search term as Ruwan but receives different results.
Explain why Zara receives different results. (2)

14). (2019 May:5)

(a) One type of backup procedure the school could use is incremental backup. (1)
State **one other** backup procedure the school could use to secure its data.

(b) Explain the purpose of an acceptable use policy. (3)

(c) The learners use communication software.
Describe the purpose of communication software. (2)

(d) Discuss the impact of VLEs on learners. (8)

Focus