Impact of ICT on society

Online Services

Purchasing Goods

1. Deciding which online shop to use , using price comparison services
2. Browsing Product Categories
3. Using the virtual shopping basket
4. Going to the checkout
    a. Register with username and password
    b. Provide details like billing shipping and email addres
    c. Phone number

Note : Sometimes the advantage of saving travelling time is reconsidered with the costs of shipping

Security Issues

- Hackers could intercept transaction and defraud the customer
- Can be used to make great purchases by hacker using original customers account
- Known as identity fraud
- Thus to protect customers data is usually encrypted

Customers should be aware that:

1. if the credit or debit card is used fraudulently the card company must refund them
2. should keep a copy of what they have ordered , and copy of suppliers confirmation message
3. consumer rights
4. Use only reputable site

Selling Online

- Has to have **website** with easily remember able **domain name**
- Needs high specification **web server**
- Needs **shopping cart software**
- Friendly **user interface**

Banking Procedure

1. Log on , type their username
2. Security Information , any security question or no. of characters from a character string DOB first and last digit of security number
3. Account Information and Services Available – services that can be applied
4. Account Details – recent transactions are listed and applied services now available

Online Services and Unemployment

- **General Unemployment** – In aim of reducing costs the employment that occurs , car manufacturing jobs replaced by robots, clerks replaced with payroll software
- **Repetitiveness and Accuracy** –
    o Robots are used some tasks must be performed the same way and same degree of accuracy each time with minimal human feedback.
    o Same applies to shopping and banking methods.
    o Can also be used in unpleasant and dangerous situations
- **Time and Automation**
    o ICT leads to great automation , reduction in time and also paperwork to many tasks
- **Bank Workers**
    o Cheque processors and cashiers jobs have decreased as their demand has gone down
- **Shop Workers**
    o Fewer workers required , sales staff and shop assistants will have decreased
- **New Employment opportunities**
    o System Analysts
    o Programmers
    o Help Desk and Customer Support Staff
    o Call centres
    o Delivery Staff

Online Services and Leisure Time

- Staff may work for shorter periods
- More leisure time usually
- More lazy
- Can go out more often
- **However**
- Due to ICT work has been also transferred home due to the availability of computers
- So could lead to more hours work

Online Service s and Working Patterns

- **Part-time working** –
    o People only work a limited number of hours ,
    o these workers can be used at busier times of a business ,
    o help retain and attract staff
    o However earn less per hour than full time workers
    o No need of spending more money on training
    o Extra Costs where some training could be required
    o However it is covered by lower absenteeism and greater productivity

- **Job sharing**
  - Two people share a job that would normally be done by one person, paid part-time but together do full time job
  - Can have different skills knowledge and experience, two for the price of one
  - Fresher and more Creative
  - Workers don't get bored workings
  - Extra equipment Costs
  - Workers might be deprived of job satisfaction
- **Flexible Working Hours**
  - Workers choice about what times of day they work however has to add up to the total no. of hours in week
  - Businesses can be open for longer period
  - Easier to allow for emloyee's personal needs
  - Help recruitment and also lower absenteeism and more punctuality
  - Greater Productivity, work at own will
  - Hard to organize and manage the system
  - Do not have to go to work at rush hour
  - If task required great concentration , can be done at quiter times
  - Extra Pressure on Workers if they are prepared to work when others are not prepared
- **Working From Home** – teleworking spend working week , working from home
  - Less money spent on buying offices
  - Allow workers to fulfil commitments
  - Employees must make sure workers are on tasks
  - Made sure Technical Support available to teleworker
  - Manage their work and home life more easily
  - Save on transport costs and travelling time
    Disadvanatages
  - Difficult to work without having to contact people
  - Do not see manager as often harder to impress him
  - Not easy to find office space at home
  - Distracted at home cannot concentrate
  - Confidential Data Is more unsafe
- **Compressed Hours** – Same no. of hours but over shorter number of days
  - Helps retain more employees as working days is cut to 4 to 4.5 days
  - Earn same amount in fewer days
  - Can have long weekends
  - Less Absenteeism as already have more time off
  - Company can operate longer hours
  - However may get very tired and drained

- **Moving from branch to branch** – workers can access their work from any branch.
    o Employers can organize staff if one branch is more busy than other
    o Sometimes in certain circumstances, allows emergency work to be done from nearest possible branch

Online Services and Security and Privacy of Data

Need to protect confidentiality of data

Data protection is necessary because -
Personal data is kept on computers – 1 mark
such as names/addresses/financial information/medical records/criminal records/employment history – 1 mark for at least 3 items
Searches of databases for personal information are much faster with computers than if it is stored on paper – 1 mark
These computers can be linked to communications networks like the Internet or private company networks – 1 mark
This allows databases to be used across an organization/be shared between organizations very quickly – 1 mark
With more and more organizations using computers there is a danger the information could be misused or could get into the wrong hands – 1 mark
Data can be easily copied – 1mark
Data can be changed with little evidence being left – 1 mark

Without data protection rules -
People who are not supposed to could see the information – 1 mark
Data might not be accurate – 1 mark
It could be possible to build up detailed files on people without their knowledge or permission – 1 mark

Shop Security

Encryption

- o Individuals have a public encryption key and private encryption kry
- o They can tell their public encryption key to everyone who wants tosend them encrypted data
- o The private key only they know
- o So knowing someones public key you can send them an encrypted message however they can only decode it with their private key
- o Individuals do not need to worry as the browser manages to ask remote server for its public key

Online Banking
- o Banking Systems don't consider single password provides suffcicent protection against hackers
- o They use secure sites and all data is encrypted
- o However hackers can also use keylogging software to detect the keys pressed

- Therefore
  - **Transaction Numbers(TANS)** are used – Passwords which can only be used once , sent to you by post or by SMS to phone , only valid for few minutes, greater security
  - **Ask the user** to type only part of their password ,as in the first and 8th letter etc
  - Provide customers with a handheld chip and pin device , capable of generating single use passwords
  - Use of https

Online shopping

- Same Encryption technique a described
- Most use https
- Padlock at the bottom of the site to show that data is being transmitted either with ' **Secure Socket Layer(SSL) and Transport Layer Security(TLS)**
- Both are protocols used in the encryption of messages between a client computer and a server
- Customer should confirm reliability of site
- Important that store has privacy policy and customer reads this
- To know full details of what they are buying and shouldbe satisfactory
- Use credit card and print out details of transaction

Social And Ethical Implications of Access to personal information

- **Duty of Confidence**- This means employers who see personal data must not tell anybody or use the information for any reason unless person has told him to , such as business secrets , personal information, photographs and diaries
- **Duty of Fidelity** – An employee should be loyal to their employer as long as they work for them. They cannot tell any rival companies about their work until they have left the company
- **Responsibility for passing on information**- When organizations pass on information about an individual , least amount should be chosen so that their identity is not revealed
- **Anonymised Information** – Organizations should always omit personal details if possible , as in without using individuals name etc
- **Aggregated Information** – This is where personal details of individuals are combined to provide information without naming them however sometimes it can become specific if group is small
- **Breaches Of Confidence** – Should include a duty of confidence clause in their contracts , individuals who feel their details have been made public can complain to the company
- **Need For Security** – Security measures must be taken to protect computerized information
- **Identity theft** – They actually occur more with conventional banking than online banking , when purchases are made at any retail outlet restaurant etc sometimes cashiers scan card on special reader and steal information using **skimming machine**
- **Phishing**- This is when individuals themselves give personal details out to those people who they **think** are bank representatives but are fakes. Similarly in **Pharming** the fraudster can redirect a genuine websites traffic to their own.

- **Spyware** – Softwares which are unintentionally downloaded by individuals. Because in downloading normal softwares hackers have attached spyware which then enters the computer and logs data
- **Online Auction or Shopping Fraud** – This is when a person uses a genuine auction site , puts up an expensive item and does not deliver or delivers cheap imitations