

EFFECTS & USES OF ICT

Online Services

Examples of online services that would not be called as transaction.

- Arranging packages to be picked up and delivered to addresses
- People filling in their tax returns
- Reserving and renewing library books

Online Shopping (e-commerce)

Reasons for its popularity

- Items are cheaper online
- Shopping can be done in the comfort of home at convenient time
- Can shop from their favourite shop
- Can avoid travelling and spending time and money for visiting many shops
- Can compare wide range of product, sellers from different countries
- There is a greater choice of manufacturers, sellers and brands.
- There is no need to wait for delivery when software are purchased

Online Shopping (e-commerce)

Reasons for its popularity

- Online catalogues are available
- Customer can read reviews of previous buyers
- More helpful for disabled people to do shopping
- Sellers can keep details of buyer for future use
- Buyers can use coupons.

Steps customers to go through while doing online shopping

- Deciding which online shop to use
- Browsing product categories
- Using virtual shopping basket (shopping cart)
- Making payment – check out
 - Billing address, shipping address, customer phone number, email address

Selling goods online

- Can offer cheaper price for products
- Warehouse and staff costs are lower
- Air-conditioning and shop space are not required

Security issues

- Identity fraud/identity theft – encryption
- Hackers
- Fake websites and sellers

Online banking

Advantages to the Customers

- No need to spend money for transportation to bank
- Can do banking at any time
- Easier for people with disability
- Interest rates on saving accounts are higher

Online banking

Disadvantages to the Customers

- May lose personal contact with the bank
- **Must have access to computer and internet**
- Risk of *hacking* and *interception*
- **Customer may mismanage the account.**
- Cost of buying computer and internet connection
- **Cannot make cash withdraw**
- May receive fraudulent emails asking for *username* and *passwords*.

Videoconferencing

- Videoconferencing is a method of visual and audio communication between people at separate locations using computer and internet.

Hardware required for video conference:

1. **Webcam** – used to input faces of participants.
2. **Large monitor/Projector** – to show the faces of participants.
3. **Microphones** – used to input voice of participants
4. **Speakers** – used to output the voice of participants
5. **Router** – used to connect the computers to the internet.

A videoconference software is also required to operate the conference

Advantages of Videoconference

- Can call meeting at short notice
- No need to pay travelling expenses
- Can work from home
- Can save travelling time
- Do not have to pay hotel expenses
- Safer as participants do not have to travel
- Documents/equipment don't get lost in transit

Disadvantages of Videoconference

- Difficult to have international meetings due to difference in time zone
- Initial costs of hardware
- Strength of connection/signal can be lost
- Legal documents cannot be signed
- Takes time to learn new technology

Data Protection Act

1. Personal data shall be obtained and processed fairly and lawfully
2. Data should be used only for specified and lawful purposes
3. Should be adequate, relevant and not excessive for the required purpose.
4. Personal data shall be accurate and kept up to date
5. Data should be destroyed when it is no longer required.
6. Data should be processed in accordance with the right of the *data subject*.
7. Appropriate security measures must be taken to prevent unauthorized access
8. Personal data cannot be transferred to any third party or any other country

Internet Use Issues

- **Reliability of Information** – anyone can create a website
- **Undesirable information**
- **Security of Data Transferred Using the Internet**
- **Phishing** – someone pretending to be a representative from bank to steal credit card details/username/password, through email.
- **Pharming** – redirect genuine website's traffic to their own site

Internet Use Issues

- **'Skimming'** – stealing all the information on the card. Employees of call-in centers pass information to criminals
- **Identity Theft** – Usually occurs in the form of stolen credit card
- **Spyware** – key loggers
 - It happens when you download untrusted software from internet
- **E-Mail Spam** – un-solicited emails

Internet Use Issues

- **‘Phishing’** – sending mail to customers pretending to be from their bank, insurance company, etc. asking for personal information

[Precaution for Phishing](#)

Expert Systems

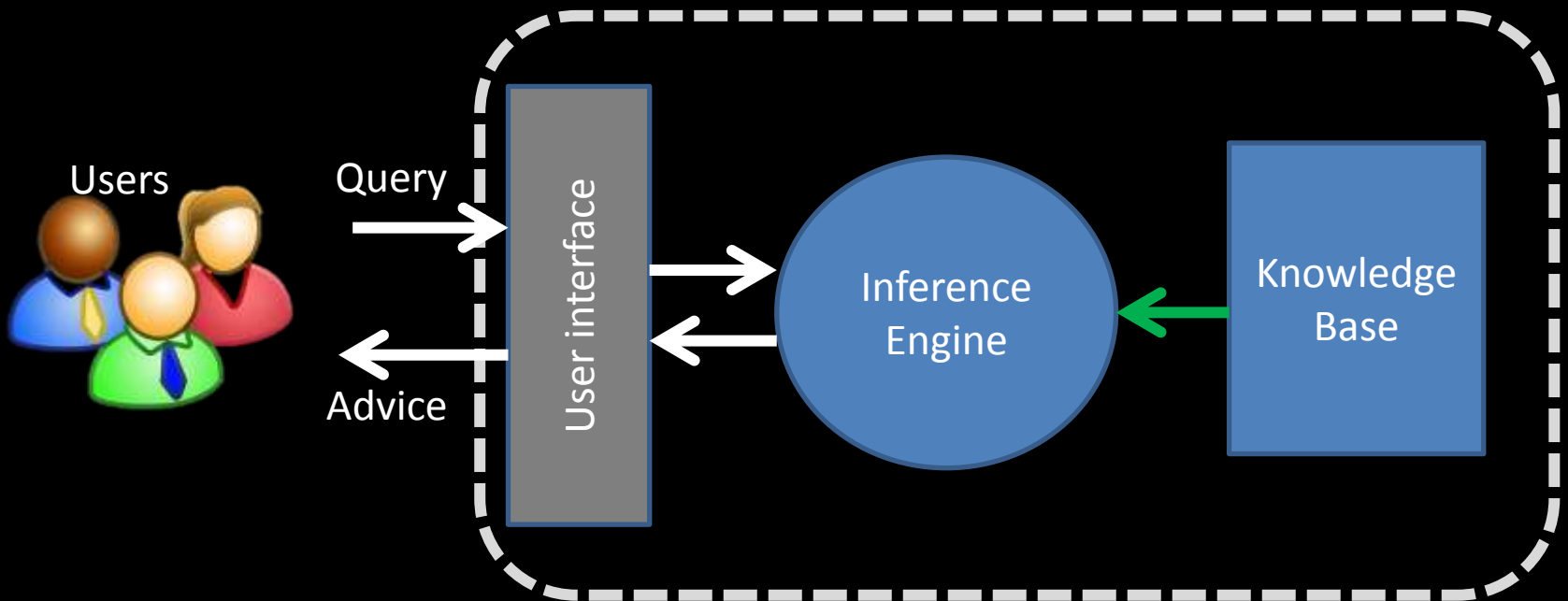
- Expert system is a computer which can replace a human expert in a particular subject area.
- It is used in places where human experts are rare.

How Expert Systems Work

It has three components:

- **User Interface** – allows user to ask questions/answer questions and receive advice.
- **Knowledge Base** – a large collection of information & rules, collected from different sources.
- **Inference Engine** – Picks information from the knowledge base that matches the queries

Expert System - Design



Uses/applications of Expert System

- Medical Diagnosis
- Strategy Games – Chess
- Financial Advice – Tax calculations
- Identify items – plant taxonomy
- Mineral prospecting
- Discover locations to drill for water / oil
- Diagnose Car problems

Advantages of Expert System

- Expert systems provide accurate answers
- They never forget a fact or to ask a question
- Can store more information than a human expert
- Service is available round the clock
- longer service period than a human expert

Disadvantages of Expert System

- It lacks common sense in some of the decision making situations
- Errors in the knowledge base can lead to incorrect advises being given
- cannot adapt to changing situation unless knowledge base is continually updated.
- It is expensive to set up an expert sys

Computer Model

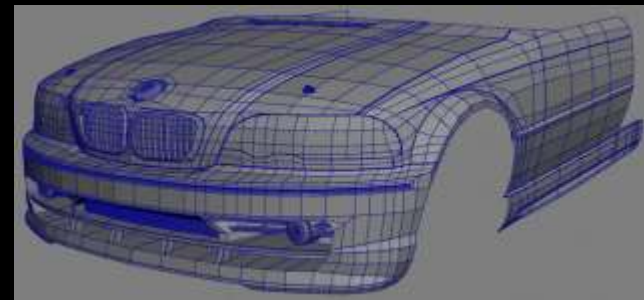
- It is a computer generated design that attempts to simulate a real world situation.

Computer Model are used for...

- For testing systems
- Predicting results
- Training people
- To investigate

Applications of Computer Model

- Designing cars and testing them
- Weather forecasting
- Construction of buildings
- Business predictions
- Training pilots



Flight Simulator



Flight Simulator - Advantages

- **Safer** – because pilots mistakes doesn't cause accidents.
- No need to use real flights-they can be in service for other purpose
- Trainer can test the pilot by creating artificial **flying situations** (impossible in real flights)

Simulation - Testing cars

- Safer – can be done in the comfort of a room.
- Cheap – no need to destroy real cars for testing.