

OFFICE PRACTICE (DES 1103)

LECTURE : 9

TOPIC : Telephone Systems and Equipment

AIM : To understand and identify the types of telephone systems

LEARNING OUTCOMES:

After completing this chapter you should be able to understand:

1. The type of telephone systems and its features
2. How to save time and cost when using the telephone

TOPIC OUTLINE:

- 9.1 Identify and describe the types of telephone systems
- 9.2 Features and functions of these telephone systems
- 9.3 Identify the types of telephone equipment found in offices today
- 9.4 Outline the recent technological advances in telephone system and equipment
- 9.5 A timesaving formula for using the telephone
- 9.6 Measures to reduce expenditure on telephone calls
- 9.7 Facsimile - its features, operation and advantages
- 9.8 Video Conferencing - its advantages and disadvantages

NOTES:

9.1 IDENTIFY AND DESCRIBE THE TYPES OF TELEPHONE SYSTEMS

Telephone Systems

Since the days of Alexander Graham Bell, the modern systems are extensive, thus:

- Enhancing the communication potential
- Used for emergencies
- Popular means of communication

Types of Telephone Systems

There are various types of systems, but making decisions on the right choice would depend on the size of the organization.

PABX System

- 'Private Automatic Branch Exchange'
- One/a large system
- Several switchboard operators who answer all incoming calls and route them accordingly
- Extension users will be able to dial on their own outside, unless the system operates a barring service

Modern Systems

- Controlled by microprocessors, which means relying on the operating of buttons, keys or touch-sensitive panels
- A light indicates when extensions are in use
- Has in-built self-diagnostic panels which display any faults occurring in the system
- Offer a wide range of special features including sophisticated call-logging facilities

Key-Systems

- Any extension user may answer incoming external calls
- Popular within smaller offices and no switchboard operator is required
- Calls can be transferred to other extensions as required
- Each extension user has a special type of telephone handset with special keys for each of the extensions.
- Lamp displays indicate whether or not the extension is engaged.
- Communication between extensions can be made
- Some key systems can be linked to a PBX – in order to prevent many extension users to answer incoming external calls.

Internal Systems

- To enable communication between extension users
- To relieve the pressure and congestion on the PABX
- Avoidance of external incoming callers finding lines engaged
- Microprocessors controlled, hence it is possible to programme special features – e.g. transferring call to other extensions.

9.2 FEATURES AND FUNCTIONS OF THESE TELEPHONE SYSTEMS

A wide range of features is available to ensure more effective and efficient service should be provided.

These features may have different names according to different suppliers. The alternatives are given in brackets.

Abbreviated dialling (Memory dialling)

- Particularly useful for frequently used numbers e.g. international ones with many digits
- Usually two keys
- Different systems have different memory sizes

Automatic Call Distribution (ACD)

- First come, first served by the first available extension

Call Back (Camp on Dialling/Camp on Busy)

- Where an extension is busy the caller can replace his receiver and be called back automatically when the extension becomes available.

Call Barring

- Enables both PABX & Key Systems to restrict on calls made at certain extensions, e.g. local calls only may be dialled.

Call Re-Routing (Call Transfer/Call Forwarding)

- Re-routing to other extensions at selected times.

Call Diversion

- Enables the extension user to programme his telephone to divert his calls to another extension
- When a person needs to attend a meeting/leave his office and expecting an important call, which he/she does not wish to leave, unanswered.

Call Parking

- Enables an extension user to place an outside caller on another extension without the extension actually answering the call e.g. when a person takes on a call at someone else's workstation but need access to material at his own he may 'park' the call at his/her extension before he/she actually returns to his/her own workstation.

Call Logging

- Monitoring the cost and nature of telephone usage

Call Queuing

- Where all extensions are engaged, a queue of incoming calls are lined up and each will be automatically routed in sequence as soon as lines become available.

Call Waiting Tone (Engaged Interrupt)

- Where an audio or visual signal is given to the extension user while he is engaged on the line, an indication that another incoming caller is trying to get through – helps to shorten lengthy calls

Conference Call

- A call set up between two or more extension users.

Direct Dialling In (DDI)

- Outside callers can by-pass the switchboard to go direct to designated extensions.

Distinctive Ringing

- Difference in tone of the ring between internal and external calls.

Extension Group Hunting

- Enables the system to search around among designated extensions for free phone – useful where lots of people will be able to supply the same information e.g. sales/service situations.

Follow-me

- Call forwarding from one extension to another on a temporary basis

Last number recall (Repeat last number, redial last number)

- System automatically redials the last number following the pressing of a code (Note: this does not include abbreviated dialling numbers)

Messaging (Message Waiting Light)

- Is a feature of key systems and is used to indicate (usually by means of a flashing light) that another extension has been trying to make contact.

LED/LCD Displays

- Up market handsets let you see what you have dialled or perhaps the duration of your call or enable you to receive a brief message on the line display

Music on Hold

- Where background music is played to ‘entertain’ the caller while he is waiting to be connected.

Override (Priority Interruption)

- Is where designated extensions may break into calls between other extensions.
- Useful features where urgent matters need attention
- Interrupter is prevented from listening in on the conversation as an audible warning sound alerts those engaged in conversations.

Night Service

- Re-routes incoming calls to a designated extension outside normal office hours.

Paging

- On a PABX this is a separate tannoy system accessible from certain extensions, on a key system it comes through the loudspeaker of all extensions not in use.

Waiting Return

- Is a PABX feature whereby incoming calls are automatically sent back to the switchboard if the extension to which the call was originally routed does not answer within a specified time.

9.3 THE TYPES OF TELEPHONE EQUIPMENT FOUND IN OFFICES TODAY



Switchboards

- Incoming calls will usually be received at a switchboard and routed through an operator to the various extensions.
- External calls may also be made from the switchboard.
- Microprocessors incorporate technology and are operated electronically to provide fast and efficient communications links both within the organization and externally.

Automatic Call Distribution Systems

- Uses computer technology to provide a fast and efficient means of answering and handling incoming calls quickly and in sequence
- A visual display unit assists by providing the staff with relevant information about incoming calls
- A voice response unit – used to handle a variety of routine functions, which will supply information and advice to callers.
- ACD designed to provide a flexible communication system, which will satisfy the needs of callers and reduce their waiting time to an absolute minimum.

Intercom

- A device which enables communication to take place between two or more locations without interfering with the main telephone system
- Extensions are called by pressing a button
- Advantages are that it frees the hands of both the caller and receiver during talking or listening
- Saves movements between offices

Telex

- Based on an original telegraphic network (it transmits over telegraph not telephone lines)
- A memory typewriter is used to type message
- It offers 24 hours service for the dispatch and receipt of written messages provided the machines are switched on and have a supply of paper

Telex via Message Switching

- Due to high volume of users, the backup of a dedicated system that operates along lines of a PABX. It supports several lines and terminals and can automatically route messages by switching them around and searching for free lines.
- A password may be introduced to prevent unauthorized access to messages held.

Teletex

- Based on a set of internationally agreed standards set up by the International Consultative Committee for Telephones and Telegraphy based in Geneva (CCITT)
- Designed to transmit and receive electronic mail via the Public Switched Telephone Network (PSTN) or via Packet Switch stream (network).

Teletext

- Refers to a specially adapted television sets designed to handle the view data information services e.g. The British's CEEFAX or Malaysia's BERITEKS

Pagers

- Lightweight, pocket-sized pagers may also be used to locate staff when they are away from their offices or moving around within the company's premises
- Many pagers operate beeps to provide the user with a signal that there is a message and this is displayed on the pager's screen

Tannoy Loudspeakers

- Operated by the telephonist from the switchboard
- To contact staff internally when they are moving around the premises.

Telephone Answering Machine

- There are 3 types of machines:
 - i. Those which answer only and play the caller a recorded message
 - ii. Those which answer and record, i.e. enable the caller to leave a message
 - iii. Those which are dual purpose, i.e. operating as a telephone answering machine combined

Voice Bank

- Development of the telephone-answering machine using a computerized 'mail box' for recording spoken messages
- It is linked to an existing telephone system and a caller's message can be played back by dialling the voice bank number and keying in a PIN number
- A pager may be used to alert the user to a message in the mailbox
- Voice bank ensures that messages are delivered quickly and accurately

9.4 RECENT TECHNOLOGICAL ADVANCES IN TELEPHONE SYSTEM AND EQUIPMENT

Mobile Telephones

- Two-way battery-operated radiotelephone can be used to keep in touch with people all over the world.
- 'Cells' are set up with their own transmitter giving wider area coverage
- Enables a person to call an ordinary telephone number or another cellular phone user.
- 3 different types of cellular phone
- Mobile – one which is permanently installed in a motor vehicle
- Portable – one which can be used in any situation and is powered by battery
- Transportable – one which can be used in or out of a motor vehicle and is powered by a rechargeable battery

Videophone

- It enables people to 'meet' by telephone, face to face for meetings without the expense of travel and time costs.

Datacoms

- Also known as Computer communications
- Datacoms link between a personal computer and a mainframe computer situated somewhere else.
- Data transmitted only when receiving terminal is ready to receive to minimize corruption of information (correction facility is incorporated)
- Modems and acoustic coupler are used.
- A modem is a small electronic box, which forms a bridging link between digital and analogue and vice versa.
- *An acoustic coupler is an alternative linking device, which is portable – operated by connecting the coupler to the communications port at the rear of the computer and then placing the telephone hand set in a cradle device, which forms the link.*

Electronic Mail

- A company's internal mailbox system operated via its own computer or to one of the services provided by bureau such as British Telecom or Telekom Malaysia
- A message is keyed in and addressed by code to relevant mailbox users.
- Received by the host computer and held in memory storage until accessed by the addressee(s), who may then read it, transfer it to personal storage, forward to someone else, reply to it via the mailbox system
- This can be printed out for hard copy retention purposes.

9.5 A TIME-SAVING FORMULA FOR USING THE TELEPHONE

- Know whom it is you wish to speak to, preferably by name
- If that person is not available, try to have an alternative ready
- Find out the telephone number
- Have the department or extension number ready when you are connected to the answering switchboard
- Have brief notes prepared on the subject of the call. This will prevent any omissions during the conversation.
- Have in hand any papers, which might be required for reference during the call.
- When you get through, state who you are and the general nature of your business
- Always be prepared to leave a message – sometimes with an answering machine
- Where an immediate contact is unavailable, avoid holding on. Suggest ringing back after an agreed interval.
- Always have a pad and pencil ready to make notes.

9.6 MEASURES THAT CAN BE TAKEN TO REDUCE EXPENDITURE ON TELEPHONE CALLS

Rates of telephone bills are on the rise. Most companies impose rules to reduce their cost and they are:-

- Ensure correct number is dialled to reduce wrong number calls
- List all points that need to be brought up before a call is made. This will save time on the telephone thus save cost.
- No personal calls to be made unless in times of emergency
- When making a long distance call try to call at a time you know the person will be in. Speaking to another person will be an additional cost.
- If that particular person is difficult to locate, fix a time so as to cut down the number of unnecessary calls.
- Remind staff to be brief and to the point so as to save time and cost.
- Reply by facsimile transmission or mail for lengthy or overseas matters
- Do not provide direct lines to those who do not need them; they may misuse them for personal calls.
- For trunk calls, make the calls during the half-rate time that is between 6pm – 7am.
- When information has to be obtained through the telephone and the person you called puts you on hold, suggest that you will call back so that the waiting time is reduced.
- Use call barring so that telephones cannot be accessed directly for trunk and overseas calls.
- Never make calls during lunch hour, as it is obvious that the person you called may not be in.
- When making calls for executives, ensure that they are in their rooms when the calls are being made.

9.7 FACSIMILE

Facsimile refers to a system of transmitting exact copies of documents, drawing, graphs or any other material which can normally be photocopied efficiently and accurately over telephone lines to another fax terminal.

Distance is no object and charges are based on the time taken to transmit (transmission time approximately 3 seconds) the message and are at exactly the same rate as normal phone calls.

There is a lot of similarity with photocopiers in terms of the type of reproduction, but the similarity ends there as the technique differs substantially.

Understand the operation and features of a fax machine

The operation

- Facsimile is a process of scanning, encoding and reconstructing
- It involves converting digital signals to analogue for telephone transmission and back to digital via built-in fax modems
- The equipment is simple and loading is automatic
- The originals to be transmitted are stacked in a loading tray and, after making telephone contact with the recipient, the operator presses the start button and the copies are reproduced automatically at the recipient's machine
- Copies can be transmitted automatically without using the services of an operator by simply dialling the fax number on the fax machine itself and pressing the start button.

Features

- **Auto dialling** using the keyboard on the machine to dial the number
- **Auto re-try** when lines are busy
- **Abbreviated dialling**
- **Delayed send** which saves money by using cheap rate times for transmission
- **Group codes** to handle multi-destination transmission
- **Security features** to restrict access to machine use and avoid abuse
- **Reduction and enlargement facilities**
- **Improved paper quality** for end copy in that plain paper is beginning to make an impact over the traditional flimsy thermal paper
- **Error detection and correction** which provides automatic cut-off after a certain level of error is reached
- **Fine mode** transmission, which improves the quality of the copy although transmission takes longer.

Outline the advantages of a fax transmission

- Easier to use – as simple as a photocopier
- Cheaper – it uses telephone lines which are less expensive to rent and have off-peak periods
- Faster in terms of both preparation (no need to key or re-try) and transmission
- Advantage over telex is that the input material does not have to be typed and checked and complicated, detail orders and other business documents can be sent with complete accuracy.
- Gaining access to records stored centrally at a head office
- Transmitting advertisement copy to printers
- More flexible – distributes and accepts graphs, diagrams and even photographs, and handwriting
- Better quality and product.

9.8 VIDEO CONFERENCING

Confravision, introduced by British Telecom quite sometime ago, initiated this sort of provision by enabling groups of people situated at different locations to be linked up in sound and vision.

Through a digitisation programme full colour signals can be achieved via Video stream.

- The room can generally accommodate six people and display facilities to enable documents and diagrams to be shown to the distant location
- Each conference or meeting room is equipped with cameras and monitor screens and with all the attendant lighting and acoustic facilities required. This can be available for purchase or rental
- It enables customers to be connected by high-speed digital links and so hold conferences between their own meeting and conference rooms at different locations or towns, countries.
- Video conferencing calls can be made within UK, Malaysia and internationally.

Advantages of video conferencing

- They enable business to be conducted live
- Any features introduced at an ordinary meeting may easily be incorporated, e.g. the display of graphics.
- Participants can both see and hear one another
- A permanent recording may be made
- Travel time and costs are vastly reduced; in fact, in some instances they will totally disappear
- Contributors should be less tired and therefore more effective
- Maximum contributions can be secured from any one with anything valid to say
- Access is readily available to any files, data or opinion which may be needed urgently or unexpectedly
- The effects of travel problems or adverse weather conditions are avoided
- Information will be more easily kept confidential within organisations' own premises than where they are holding a meeting outside premises

Disadvantages of video conferencing

- A Chairman may find it more difficult to keep order by remote control and would certainly need to adopt different strategies.
- There is no opportunity for members to get together in the same way informally prior to a videoconference.
- Some executives may resent the removal of an opportunity to get away from the office for a while – on expenses – although evidence would seem to suggest that many executives begrudge the time they spend travelling.
- Some members may find it difficult to act naturally in front of a camera, and this may affect the natural swing of a meeting.

REFERENCES:

1. Helen Harding, Secretarial Procedures – Theory and Applications (2nd Edition)
2. Helen Harding, Office Organisation and Secretarial Procedures
3. John Harrison, Secretarial Duties (10th Edition)

TUTORIAL QUESTIONS – WEEK 9

1. The Office Manager has been instructed to take steps to reduce the expenditure on telephone calls. Investigate the present position regarding internal and external telephone calls, and prepare a report on your findings together with your recommendations.
2. Assuming your company has up-to-date equipment, suggest ways in which the Managing Director might communicate with:
 - a) Other managers in the building
 - b) Someone whose work takes him to all parts of the factory
 - c) Someone in a provincial branch office.
3. In what circumstances is a telephone-answering machine useful?
4. Briefly describe the main features of three means of communications (other than the telephone) your office could use to send information abroad, which requires action today.
5. Briefly describe these features:
 - a) Abbreviated dialling
 - b) Call diversion
 - c) Conference call
 - d) Re-dial