
TELECOMMUNICATION

CONTENTS -

1. **WHAT IS TELECOMMUNICATION ?**
2. **IMPORTANCE OF TELECOMMUNICATION**
   - IN EDUCATION
   - IN HEALTHCARE
   - IN BUSINESS
   - IN ECONOMIC GROWTH
3. **TELECOM TOWERS**
   - DEFINITION
   - CLASSIFICATION
4. **CABLING**
   - DEFINITION
   - ADVANTAGES AND DISADVANTAGES
   - UNDERGROUND VS ABOVE GROUND CABLING

What is Telecommunication?

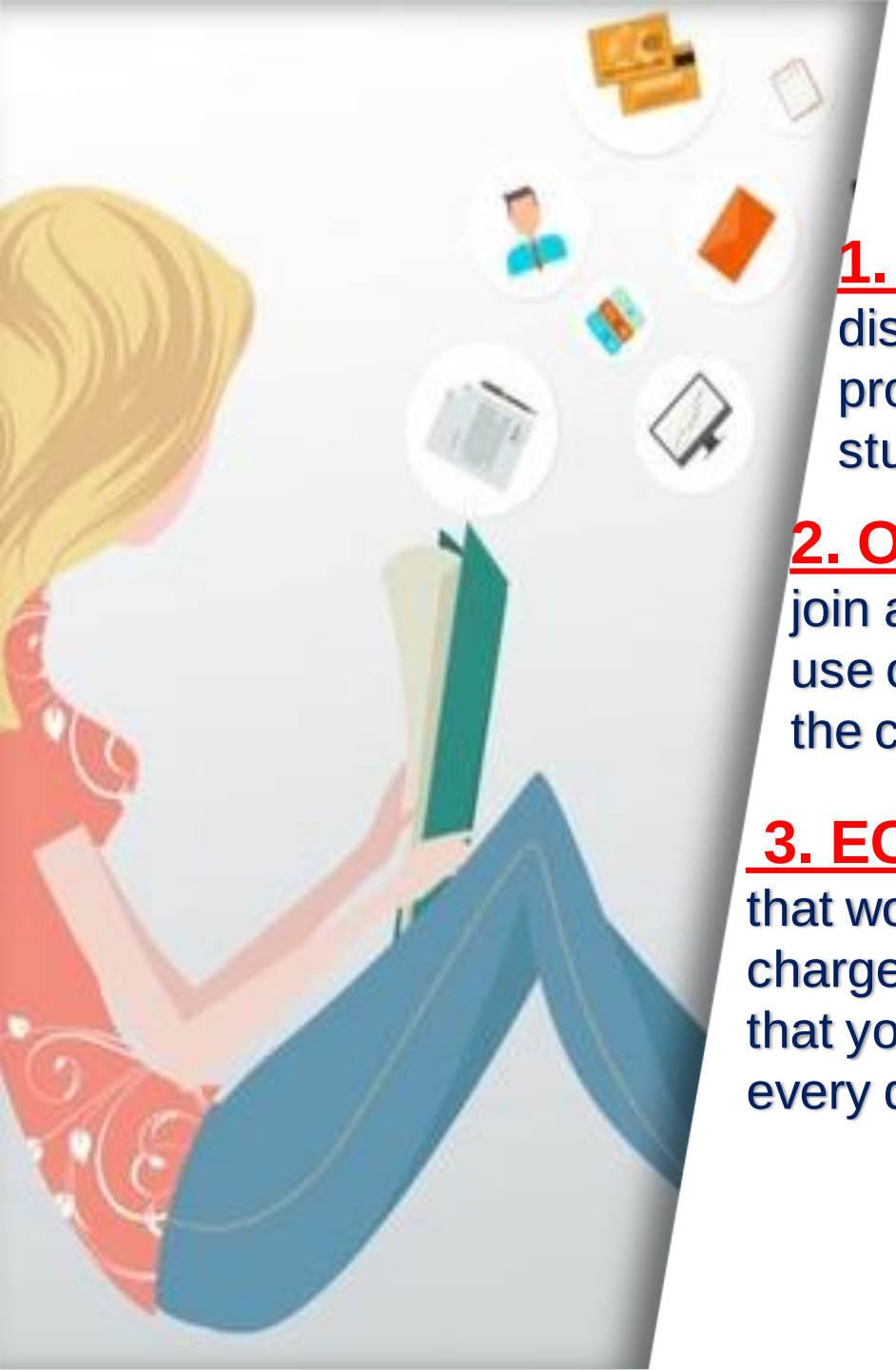
Telecommunications, also known as telecom, is the exchange of information over significant distances by electronic means and refers to all types of voice, data and video transmission. This is a broad term that includes a wide range of information transmitting technologies such as telephones (wired and wireless), microwave communications, fiber optics, satellites, radio and television broadcasting, the internet.

FABRIKAM


IMPORTANCE OF
TELECOMMUNICATION

1. IN EDUCATION

With the introduction and development in telecommunication things have changed a lot. The internet, a part of the telecommunication service helps students enjoy what is known as distance learning or e-learning. This basically helps student opt for higher education in their preferred courses. Almost all types of courses you can think of are available in such distance learning institutions, and they have lecturers who give classes and notes to their students,



BENEFITS ARE-

1. DISTANT EDUCATION- Things are very easy as far as distance learning is concerned, and the only telecommunication products required is a computer with internet connection, and then the students can start with their course study.

2. ONLINE COURSES- Students need not leave city/country to join an institution of their choice. Many well-known institutions make use of o offer a great variety of courses that students can join from the comfort of their own home.

3. ECONOMIC FACTOR- This helps them save a lot of money that would otherwise be spent on airfare, hostel rooms, and other charges. Furthermore, you will also save the conveyance charges that you would have to bear to travel to and from your institution every day.

FABRIKAM

2.IN HEALTHCARE

With the help of telecommunication equipment, the healthcare providers, as well as the patients, enjoy a lot of benefits.

BENEFITS FOR PATIENTS

- People living in areas that do not have specialist care facility can use telecommunication equipment to get in touch with their healthcare provider without having to travel long distances.

- People suffering from chronic conditions, who need their vital statistics (like blood pressure and heart rate) to be monitored on a regular basis, can send such details to their doctor without having to visit them physically.

BENEFITS FOR PHYSICIANS

- There will be shorter wait times in the clinic as fewer patients will need to visit the doctor physically, and thus the doctors will be able to serve more patients, more effectively.

- As the physicians will be able to keep a track of their patient's condition regularly, they will be able to offer better care and better treatment.

3. IN BUSINESS

Telecommunication serves as an important tool for businesses. Owing to it companies are experiencing more success and many benefits.

- Telephones are still used by most companies. Owing to call management techniques businesses can handle incoming calls easily.

- With the help of mobile telecommunication, it becomes easier for employees working from home or from remote locations to communicate effectively. They can use telecommunication devices to receive and send messages, access data, participate in conferences, and work on documents.

- It is not possible for all team members to be physically present in important meetings, but collaboration is important for the success of projects. In such situation, telecommunication comes to the rescue.

4.IN ECONOMIC GROWTH

We have already learned how telecommunication is important for healthcare and education, and now we shall discover what kind of role it plays in agriculture, transportation.

- **In Agriculture -** With the help of telecommunication, farmers can be informed about possible earthquakes, thunderstorm or other natural disasters.They can also be taught how to avert the consequences of such disasters as fast as possible.

- **In Transportation -** It is used to fly and land airplanes, and to manage a fleet of vehicles in passenger transport and freight. With the help of telecommunication, it also has become possible to manage the movement of human traffic.


TELECOM TOWERS

WHAT IS TELECOM TOWER?

Telecom towers are combination of steel structures that are designed in order to support antennas for telecommunications and broadcasting, Wireless communication for the most part, such as mobile networking, television antennas as well as radio broadcasting is connected using telecom towers.

CLASSIFICATION OF TOWERS -

There are various types of telecommunication towers and one way that they can be classified is on the basis of their structural action, such as -

I. LATTICE TOWER
II. GUYED TOWER
III. MONOPOLE TOWER
IV. COMOUFLAGE TOWER
V. SELF -SUPPORTING TOWER
VI. MOBILE CELL TOWERS

1.LATTICE TOWER

Lattice towers are freestanding and segmentally designed with rectangular or triangular base steel lattices. This type of tower construction can be useful in situations which require modifications such as mounting large *number of panel or dish antennas*. They can be used as *electricity transmission towers, radio towers* or *as an observation tower*. The Eiffel Tower is a famous example of a lattice tower.

2.GUYED TOWER

Guyed towers can be lightweight to heavyweight towers often seen as slender steel structures. Commonly seen in the tower industry, guyed towers are designed to provide maximum strength, efficiency and versatility with easy installation. They are supported by one or more levels of braided or stranded steel guy cables that anchor to the ground.

3.MONOPOLE TOWER

Monopole towers work well when space is limited, zoning is difficult or harsh weather conditions need to be considered. Designed as a single-pole that can be a tubular section design or a formed, tapered pole, they are the least intrusive – making them the most popular tower types in the wireless communication industry. Because of the single-pole design, it advantageously reduces visual impact and results in a shorter construction time.

4.CAMOUFLAGE TOWER

Camouflage towers are typically used in urban areas when the need to reduce visual impact on the environment is a concern. They are often seen in the form of artificial pine trees, palm trees, clock towers and even in the form of artificial cacti.

5.SELF-SUPPORTING TOWER

Self-support towers offer the most possibilities compared to other types of telecom towers and are considered appropriate for nearly all wireless communication applications. Available in 3-legged triangular and 4-legged square lattice-type structures, their braces can accommodate the heaviest of loads and the strongest of winds.

6.MOBILE CELL TOWER

Mobile cell towers (tower-on-wheels, cell-on-wheels) are considered low-profile and portable because they are often mounted on trailers. Coming with a portable, small footprint, mobile cell towers are discreet and very versatile. They are often used in temporary or emergency situations; however, they are also useful if budget or permits are of concern.

CABLING

- ABOVE GROUND CABLING
- UNDERGROUND CABLING

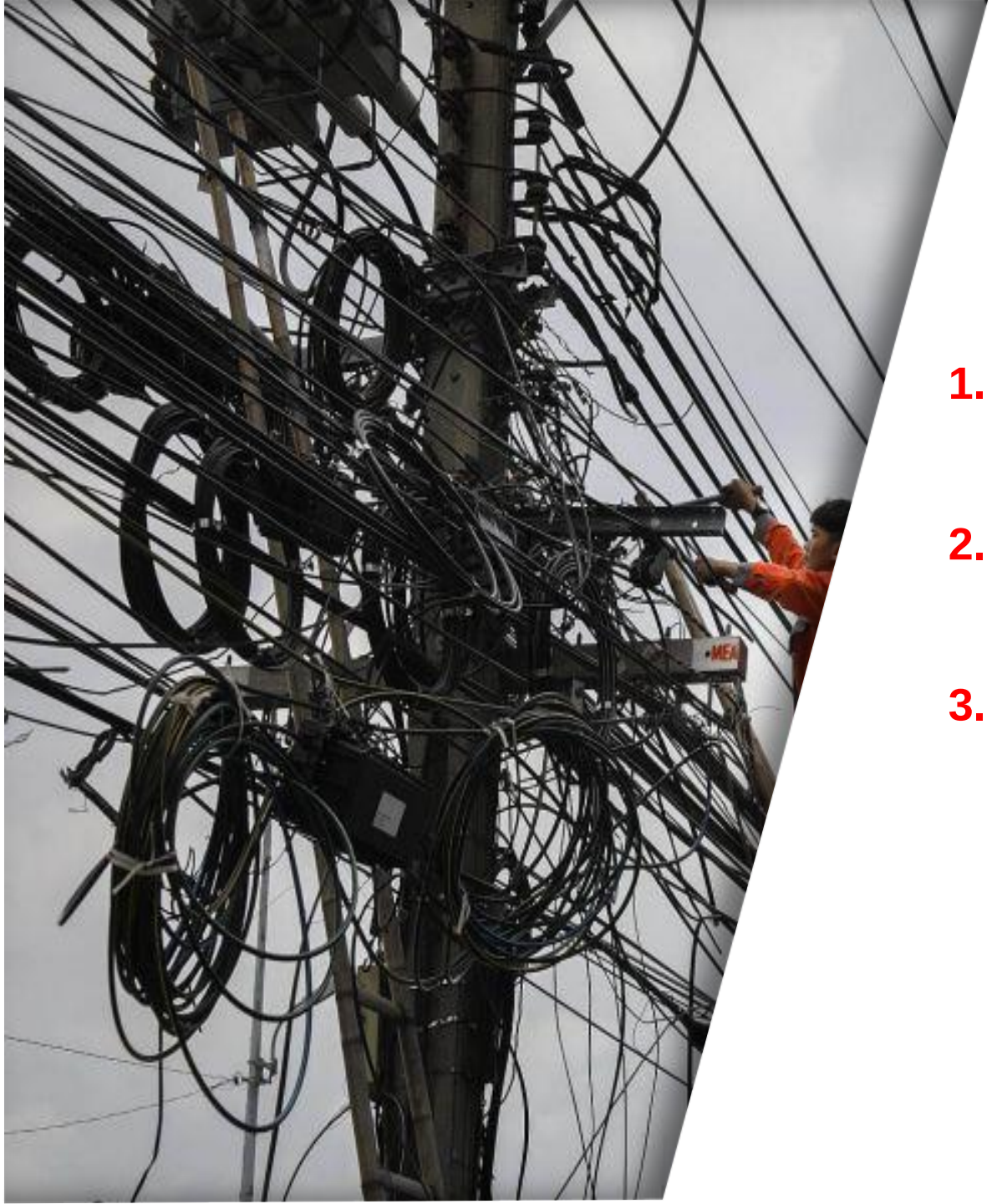
1.ABOVE GROUND CABLING

An **overhead** cable is a cable for the transmission of information, laid on utility poles. These poles sometimes carry overhead power lines for the supply of electric power. Power supply companies may also use them for an in-house communication network. **Sometimes these cables are integrated in the ground or power conductor.** Otherwise an additional line is strung on the masts. Cables are arranged on poles with the most dangerous cables, that is, those carrying power. Overhead cable systems also include a number of different components for managing signal cables. These include splicing systems that allow multi-conductor cables for distributing telephone signals.

FABRIKAM

ADVANTAGES

1. **Cost** — Overhead's number one advantage. Significantly less cost, especially initial cost.
2. **Longer life** — 30 to 50 years
3. **Reliability** — Shorter outage durations because of faster fault finding and faster repair.
4. **Loading —** Overhead circuits can more readily withstand overloads.
5. **Fault** — The fault or damage in overhead lines can easily locate.



DISADVANTAGES

1. As it is exposed to the surrounding, safety risk is high.
2. A continuous pathway for the line creates obstructions.
3. Vulnerable to lightning strikes

2.UNDER GROUND CABLING

Undergrounding is the replacement of overhead cables providing electric power or telecommunications, with underground cables. It demonstrates the higher technology in developed countries for fire prevention and to make the power lines less susceptible to outages during high wind thunderstorms or heavy snow or ice storms. An added benefit of undergrounding is the aesthetic quality of the landscape without the power lines. **Undergrounding can increase the initial costs of electric power transmission** and distribution but may decrease operational costs over the lifetime of the cables.

ADVANTAGES

1. **Aesthetics** — Underground's number one advantage. Much less visual clutter.
2. **Safety** — Less chance for public contact.
3. **Longer reach** — Less voltage drop because reactance is lower.
4. Safer from **lightning.**
5. It creates no **obstructions.**

DISADVANTAGES

1. Installation process through various geographic areas has high difficulties, because of ground excavation.
2. Underground transmission systems have a high cost of maintenance. Because the line needs to dig up before any repair activities and required to reinstall again.
3. High complications in fault detection and maintenance.
4. High voltage transmission is difficult in underground transmission.

UNDER GROUND V S ABOVE GROUND CABLING

S.no.	PARTICULAR	UNDER GROUND CABLING	ABOVE GROUND CABLING
1.	PUBLIC SAFETY	It is more safe	It is less safe
2.	INITIAL COST	It is more expensive	It is less expensive
3.	FAULTS	Very rare chances of faults	Faults occur frequently
4.	REPAIR	Cannot be easily repaired	Can be easily repaired
5.	APPEARANCE	Its appearance is good as wires are not visible	It gives shabby look
6.	INSULATION COST	More insulation cost	Less insulation cost
7.	SUPPLY INTERRUPTION	Very little chances of supply interruption	More chances of supply interruption

Thank You