

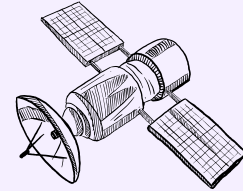
A GUIDE ON THE TELECOMMUNICATION SECTOR

An exhaustive guide on telecommunication sector

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INTRODUCTION



The telecommunication sector is made up of companies that make communication possible on a global scale, whether through the phone, the internet, over airwaves, or cables. These companies create the infrastructure that allows data such as text, voice, audio, or video to be sent anywhere in the world.

The largest companies in the sector are telephone operators ("both wired and wireless"), satellite companies, cable companies, and internet services.

In many countries around the world, government monopolies have been privatized and now face a plethora of new competitors. Traditional markets have been turned upside down, as the growth in mobile services outpaces the fixed-line, and the internet starts to replace voice as the staple business.

These companies help in the growth of a country and help people to be able to reach out to people in a simple and fast way. These telecommunication companies are helpful to people in a good way.

The telecommunications sector consists of companies that transmit data as text, voice, audio, or video across the globe. Telecom equipment, telecom services, and wireless communication are the three basic sub-sectors of telecommunications.

Telecom has become increasingly focused on video, text, and data, as opposed to voice. Telecommunications companies can appeal to both growth- and income-oriented investors. The telecom sector overall has exhibited stable long-term growth, as telecommunications have become increasingly essential and impervious to business cycles.





India's telecommunication network is the second largest in the world by number of telephone users ("both fixed and mobile phones"). India has the world's second-largest Internet user-base.

Telecommunication has supported the socioeconomic development of India and has played a significant role to narrow down the rural-urban digital divide to some extent

The rapid strides in the telecom sector have been facilitated by liberal policies of the government that provide easy market access for telecom equipment and a fair regulatory framework for offering telecom services to the Indian consumers at affordable prices.

The exponential growth witnessed by the telecom sector in the past decade has led to the development of telecom equipment manufacturing and other supporting industries.

With the advent of next-generation technologies and 3G and broadband wireless access services rolled out by operators, the demand for telecom equipment has increased. To capitalize on this opportunity, the government and policymakers are focusing on developing the domestic manufacturing industry.



MODERN TELECOMMUNICATION TOOLS:

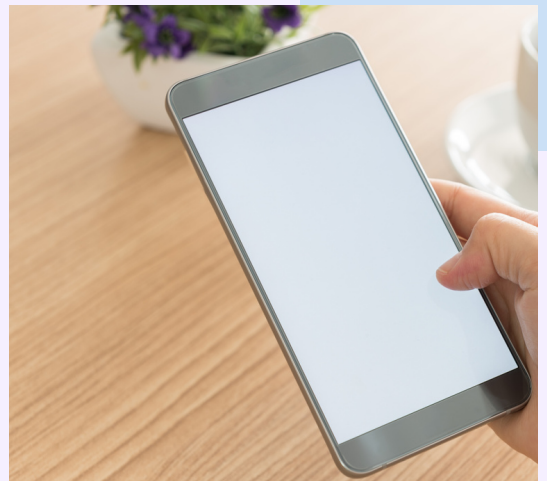


Modern telecommunications tools are telephone ("Including mobile telephony"), radio and television, internet, and communications networks ("LAN and WAN").

1.Telephone:

In a telephone network, the caller is connected to the person he wants to talk to by switches at various telephone exchanges. The switches form an electrical connection between the two users and the setting of these switches is determined electronically when the caller dials the number.

The fixed-line telephones in most residential homes are analog, however, increasingly telephone service providers are converting the signals to digital for transmission before converting them back to analog for reception. This enables digitized voice data to travel side-by-side with data from the Internet.



2. Mobile Phones:

Mobile phones have had a impact on telephone networks. Mobile phone subscriptions now outnumber fixed-line subscriptions in many markets. These telecommunication tools are easy and outgoing in perspective of a person.

3. Radio and television:

In a broadcast system, the central high-powered broadcast tower transmits a high-frequency electromagnetic wave to numerous low-powered receivers. The high-frequency wave sent by the tower is modulated with a signal containing visual or audio information.

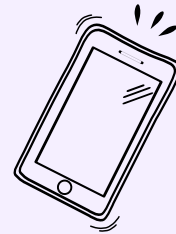
The receiver is then tuned to pick up the high-frequency wave and a demodulator is used to retrieve the signal containing the visual or audio information. The broadcast signal can be either analog or digital.

4. Internet:

The Internet is a worldwide network of computers and computer networks that can communicate with each other using the internet protocol. Any computer on the Internet can send a message to any other computer using its internet protocol address. These messages carry with them the originating computer's internet protocol address allowing for two-way communication. The Internet is thus an exchange of messages between computers.



ADVANTAGES OF TELECOMMUNICATION SECTOR



1. Better communication

Telecommunication allows businesses to use advanced communication methods for everyone from employees to customers. Using telecommunication services, your business has the necessary infrastructure and tools to transmit data digitally. That includes a huge range of information that a person can use for many different purposes, from analytics and important documents to emails, messaging, and voice conversations.

2. Collaborative work

Telecommunication solutions can make your team more collaborative by providing the right tools. Embracing telecommunication opens communication and collaboration between teams so that they can work together. Tools such as video conferencing together with cloud services bring colleagues together, even if they are on different continents



3. Flexibility

Businesses can work more flexibly when they have telecommunication infrastructure to support them. More people than ever before have worked remotely over the last couple of years, and many businesses are still operating using remote work.

4.Improved customer experience

Telecommunication technology, has the advantage of helping to improve the customer experience as well. When communication is improved, customers receive better service. Your business can keep up with the expectations of your customers, which have changed over the years.

With everyone always online, people will often expect to have much better access to customer service. Telecommunications services can help to ensure that a company is there for the customers in different ways. if a company need to keep your business online and be able to communicate to provide your customers with the care and experience that they deserve.



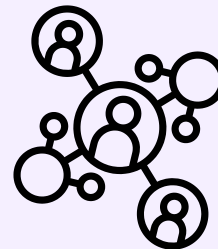
5.More Efficiency and productivity

Efficiency can be improved, and misunderstandings reduced with better communication through telecommunication.

Telecommunication helps your business to operate on all levels, which can lead to huge increases in efficiency. In addition, poorly communicated information and misunderstandings are less likely, which can reduce mistakes and raise productivity. Even just using one device to carry out a range of activities can increase efficiency and productivity for workers everywhere.



TYPES OF TELECOMMUNICATION NETWORKS



Telecommunications is a subset of the information sector that allows consumers to communicate with one another through voice, video, audio, and text.

Companies in the telecom sector may manage or handle equipment, services, or both. Telecom equipment includes the devices consumers use to communicate, like phones, modems, wireless and landline infrastructure equipment, and networking devices, such as Wi-Fi routers. The types of companies that work in the telecom equipment subset include computer, phone, and semiconductor manufacturers.

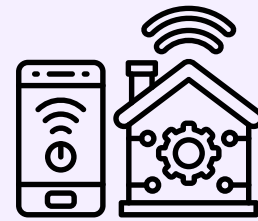
Telecom services companies transmit and deliver the data that users communicate or receive with their devices. They are the channel through which telecommunications travel. Normally, consumers and businesses enter an arrangement with service providers, where they pay a regular fee to use telecom services. There are three types of telecom services



Wired

Companies in wired telecommunications provide services that require a direct connection to a network of wires that transmit data. Such services include:

- Landline telephone
- DSL internet
- Cable television
- Internet
- Direct-to-home satellite television



Wired telecommunications companies may own, share, or lease the networks they manage. The content they transmit over their networks, such as television shows and movies, does not fall into the category of telecommunications. It belongs to other industries, such as broadcasting and motion pictures.

Wireless

This type of telecommunication does not require a direct physical connection. Instead, it transmits signals over networks of radio towers. The signals travel from antennas to wireless devices, such as mobile phones, personal computers, and radios. The wireless telecommunications subset mainly consists of three types of companies: cellular phone service providers, internet service providers and radio broadcasting companies.



Satellite

Satellite telecommunications companies transmit data via satellites. These companies are mainly private or federal organizations that transmit specific types of data, such as messages between public safety officials.

EVOLUTION OF THE TELECOMMUNICATIONS SECTOR



The telecommunications industry began in the 1830s with the invention of the electrical telegraph, the first mechanical communications device. It shortened communication from days to hours. Telegraph networks relied on an extensive infrastructure and hundreds of highly trained operators to relay messages in Morse code.

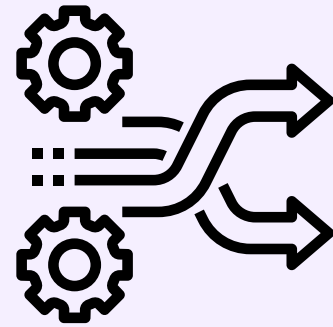
Over time, new inventions broadened the telecommunications industry. Each of the following inventions allowed the creation of new telecommunications networks that expanded the ability to communicate over long distances:



- **Telegraphs:** Developed in 1830s, they allowed written messages to be exchanged quickly over land.
- **Telephones:** Invented in 1876, they allowed the transmission of the human voice, reducing the need for Morse code operators.
- **Radio and television:** Allowed transmission over the airwaves, eliminating the need for wired networks.
- **Cellular and satellite networks:** Reduced reliance on fixed telephone networks.
- **Computers and the internet:** Allowed automatic transmission of information much faster than was possible through human speech or text.
- **Sector structure:** The sector's structure has also changed from a few large players to a more decentralized system with decreased regulation and barriers to entry.
- **Public corporation:** Major public corporations act as the service providers, while smaller companies sell and service the equipment, such as router and more.



MARKET DYNAMICS



The global telecom services market size was valued at USD 1,805.61 billion in 2022 and is expected to expand at a compound annual growth rate ("CAGR") of 6.2% from 2023 to 2030. Rising spending on the deployment of 5G infrastructure due to the shift in customer inclination toward next-generation technologies and smart devices is one of the key factors driving this industry.

An increasing number of mobile subscribers, soaring demand for high-speed data connectivity, and the growing demand for value-added managed services are the other potential factors fueling the market growth. The global communication network has undoubtedly been one of the prominent areas for continued technological advancements over the past few decades.

Usually, the companies are not bound to price agreements with limited viewing choices to pick from. exchanging audio, video, and text content over numerous wireless infrastructures.

The market for telecom services has also witnessed significant improvements in data speeds, from Global System for Mobile communications ("GSM") and Code Division Multiple Access ("CDMA") to Third Generation ("3G"), Fourth Generation ("4G"), and now the commercialization of Fifth Generation ("5G") networks.



The advent of data connectivity has made possible the reduction in the duration of transferring large chunks of data from days to hours and now to a few seconds.

In today's digital age, customers favor Over-The-Top ("OTT") channels for a variety of reasons, among which the number of viewing options, and the pricing offered are the most prominent ones. The "OTT" solution providers offer video, audio, and other media content over the Internet. Common instances of "OTT" applications are Netflix, Amazon Video, Roku, Hotstar, HBO, and others.

However, the escalating consumption of digital media platforms by global customers has resulted in the sudden demand for higher bandwidths with high-speed connectivity. With the upsurge in the consumption of these platforms, telecom service companies are urging "OTT" providers to reduce the streaming resolution of their media content.

In fact, the Cellular Operators Association of India ("COAI") has requested video streaming providers to reduce their content quality from High Definition ("HD") to Standard Definition ("SD"). To avoid the congestion in internet traffic, especially when most people are working from home and require high bandwidth, some governments are also helping the market for telecom services to ensure the smooth functioning of their data and voice carriers.

ECONOMIC OVERVIEW

Modern telecommunications industry players produce communication equipment and deliver a set of voice, data, and broadband services using wireline or wired infrastructure of cables, networks, servers, computers, and satellites.

Telecommunication is the transmission of information over significant distances to communicate. In earlier times, telecommunications involved the use of visual signals, such as beacons, smoke signals, semaphore telegraphs, signal flags, and optical heliographs, or audio messages such as coded drumbeats, lung-blown horns, and loud whistles.

In modern times, telecommunications involved the use of electrical devices such as the telegraph, telephone, radio, and microwave communications. Communication channels make use of fiber optics and their associated electronics, orbiting satellites, and the internet.



Modern telecommunications industry players produce communication equipment and deliver a set of voice, data, and broadband services using wireline or wired infrastructure of cables, networks, servers, computers, and satellites.



This industry is highly sensitive to the slightest change in regulatory, technological, and economic factors and has its own share of challenges largely stemming from these factors. With wireless and broadband providing the needed momentum to their growth, the industry players adopt unique strategies to overcome these challenges and move forward to connect people to people and organizations.

In today's world the telephone, long-distance, cable/video, cellular, and telecommunications equipment industries are increasingly intertwined. Major challenges of this industry are globalization trends, competitive implications of new technologies, and the changing regulatory environment.

The sharp fall reflects the expectation, based on previous recessions, that reductions in income will sap demand for telecoms services. However, social distancing is increasing reliance on telecoms, which could partially offset the impact of the expected economic slump.

MAJOR INVESTMENTS

Telecommunications companies are a rarity among equities. At times, they have exhibited characteristics of both income and growth stocks.

For growth investors, the small companies offering wireless services have provided opportunities for share price appreciation. In contrast, larger companies dealing with equipment and services have offered havens for conservative, income-focused investors.

Value investors also may find good pickings in the telecommunications sector. The need for telecommunications services, an integral part of the global economy, persists regardless of changes in the business cycle.

However, while the demand is constant, individual suppliers can rise and fall. For several years, a company may enjoy its regulatory privileges, and produce reliable, generous dividend yields ("generated by high monthly revenue from its stable customer base"). Then, suddenly, technological advances or mergers and acquisitions can create uncertainty and leave room for loss –and recovery, with fresh growth.





If a firm hits a slump because of shifts in the industry ("like the growing importance of wireless devices"), value investors might snap it up, provided its fundamentals remain strong and it proves adept at adapting to change. The telecommunications sector's record of paying and regularly raising dividends makes the waiting period for share price improvement more enjoyable.

When sizing up their telecom sector investment options, investors should be aware of the changes in fortune of companies and the gap in revenue and market capitalization between telecom operators and large tech companies. All three major telecom sub-sectors present some risk to investors.

Investors with heavy exposure to telecom can expect stronger-than-average gains during bull markets. But, when a recession or bear market hits, losses can be severe.

The fact that the telecommunications sector allows for communication across the globe highlights its importance. The coronavirus pandemic has further compounded this sector's importance. There has been an increase in the usage of services provided by this sector as they allow for virtual communication to continue keeping in mind the social distancing norms that have prevailed.

From an investment point of view, stocks made available by telecommunications companies have been known to exemplify traits desired by both income as well as growth stocks. Share price appreciation for instance is most likely when investors consider buying stocks of small companies which offer wireless services.

This is an ideal opportunity for growth investors to take advantage of. On the other end of the spectrum, income-oriented investors can seek stocks in large companies which deal with equipment and services.

Investors of each of the forms, however, must recognize the investment risks possible under this sector. While investments in these stocks are liable to bring higher than ordinary gains during rises in the financial market, they can incur extreme losses during a recession.



WHAT TO LOOK FOR WHEN INVESTING ?

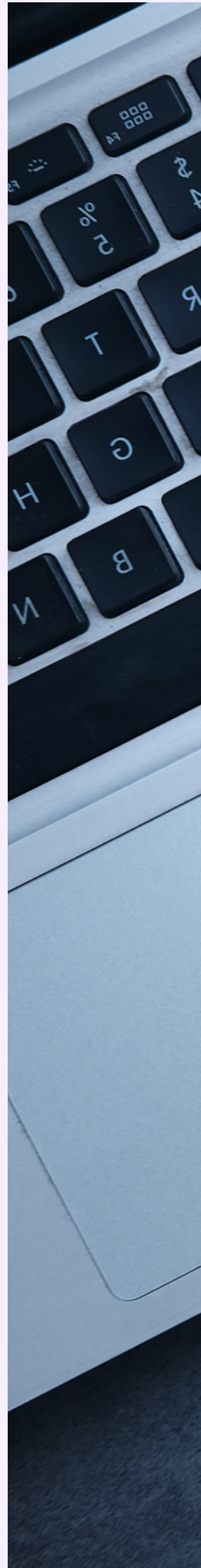


Prior to investing in a stock in this sector, its important investors consider the company's cash flow and make sure it has a viable balance sheet in place. Understanding the scale of the company is also relevant as a high subscription to a given company allows for vast improvements in the company's gross margin and free cash flow.

Investors must consider the competitive advantages and growth potential of the company they want to invest in. Trends that drive this industry are important as well and can be indicative of the demand for the same. Stocks that perform best within this industry are ordinarily market leaders.

Therefore, investors can consider investing in companies that are already in the lead. They must make sure these companies have viable fiscal patterns. Presently in India, reliance jio and bharti airtel dominate the telecommunications market.

In order to stay up to date on the trends prevailing within the stock market including the telecommunications sector, create an account with angel broking. This account will allow an individual to have a single access point to all markets and provide a person with in-depth quality research.

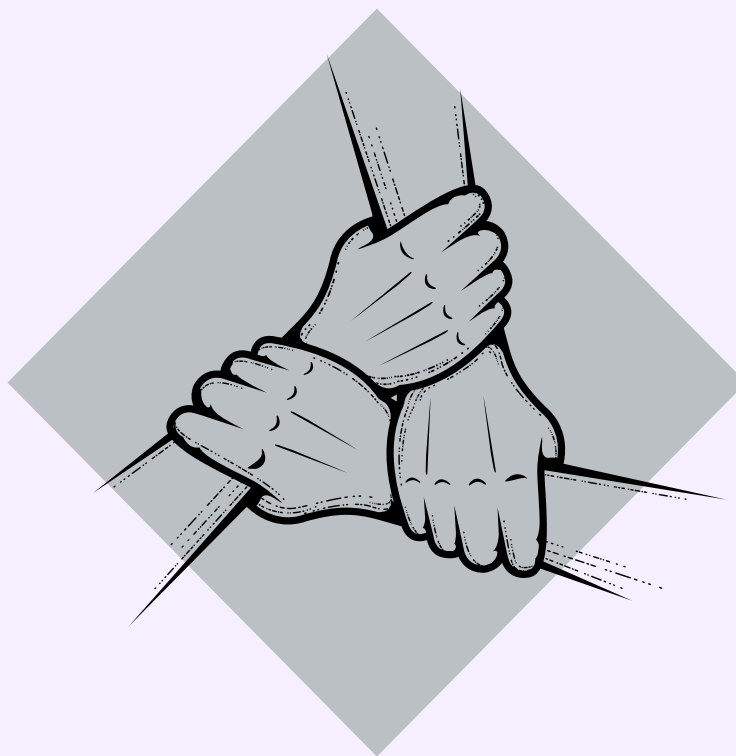


INTERNATIONAL TELECOMMUNICATION UNION



Established in 1865, the International Telecommunication Union ("ITU") is the United Nation's agency for information and communication technologies. Its mission is to connect all the people in the world and to protect and support the right of the people to communicate.

Originally founded as the international telegraph union to promote cooperation among international telegraphy networks of the day, the international telecommunication union predates many other standardization bodies, and its long and distinguished history contains several important 'firsts', such as the standardization of the use of the Morse Code and the world's first radiocommunication and fixed telecommunication networks.



There are some functions of the international telecommunication union consists of 3 sectors, that are:

- Radiocommunication ("ITU-R");
- Telecommunication ("ITU-T"); and
- Telecommunication Development ("ITU-D")

The major functions of international telecommunication union can be listed below:

- Allocates radio spectrums.
- Allocation of satellite orbits
- Develops technical standards for the networks for them to function seamlessly.
- Strives to provide access to information and communication technology to underserved communities worldwide.
- The international telecommunication union also brings out several reports related to telecommunications.



HOW WE CAN HELP ?

Our team can provide the best possible combination of experts in the telecommunication industry who brings the right amount of expertise, experience, and capability needed to explore perspectives and insights for the future.

1. Legal advice:

Our team can provide legal advice on the regulatory framework for telecommunication sectors, and telecom companies to drive efficiencies, unlock new value, improve the customer experience, and generate new business models.

2. Contract drafting and negotiation:

Our team can assist with drafting and negotiating contracts with suppliers, customers, and partners. This can help ensure that contracts are legally sound and protect the interests of the business.

3. Dispute resolution:

Our team can help businesses resolve disputes with customers, suppliers, or partners through negotiation, mediation, or litigation. This can help protect the business's reputation and financial interests.

4. Due diligence:

Our team can conduct due diligence on potential partners or suppliers to ensure they are legally compliant and financially stable.

5. Compliance monitoring:

Our team can assist businesses in ensuring compliance with local laws and regulations, including tax laws, labor laws, and environmental regulations.

SERVING CLIENTS WORLDWIDE



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