

Human Geography

CONCEPTS, APPROACHES AND TRENDS



Edited by
J. F. Olorunfemi
S. L. Tilakasiri

HUMAN GEOGRAPHY

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Chapter 13

TRANSPORT AND COMMUNICATION

E. F. Ogunbodede and B. A. Usman

Introduction

Transport is the movement of humans, animals and goods from one location to another. Modes of transport include air, land (rail and road), water, cable, pipeline and space. Transport is important because it enables trade, social, administrative and military activities to be efficiently carried out between people in any given environment. Communication involves the transmission of messages and graphics/pictures to share thoughts, ideas and information. Due to the fact that effective communication is vital for informing, motivating, establishing authority and control and in enhancing social cohesion in society, communication facilities have become a very vital infrastructure of modern society.

Transport and communication are the two major ways by which man interact in order to effect productive activities. The mode of operation may differ a little, but the intention to carry out economic,

political and social activities is very similar. This chapter considers transport and communications within the realm of human geography. It is divided into two parts viz: (1) transport and (2) communication. That notwithstanding, readers of this chapter will find the content very useful as an introductory text to Transport and communication as a course of study in the higher institutions.

Transport Studies: An Important Arm of Economic Geography

Mobility is fundamental to economic, political and social activities of any nation. Without mobility, nothing, in terms of development, can be realized. This is because people need to move from residences to places of work and other major land uses as found in space. Thus, the economist perceives the demand for transportation as a 'derived demand' since transport does not really produce a tangible product like machines in a factory. The word 'demand,' in this case, indicates that transport will not be required if it does not have to satisfy other needs. Transport systems, through which these movements are realizable, are composed of service, infrastructures, modes, means and terminals. The adequacy and the efficiency of these infrastructural facilities and services in any city are, therefore, important ingredients for a well-planned environment.

The relationship in logistics is simply depicted as shown in Figure 1. A single means of movement in space cannot satisfy the interaction that is needed in any environment. This is why one or more modes of transportation are usually put to use to satisfy interaction within the environment. Geography, as the study of man in his environment, seeks to understand, among other things, how mobility of freight, people and information is conducted in cities as well as determine spatial constraints between the points of origin and destination.

These mobility constraints most of the time are at a cost to any geographical space. In some cases, the constraints may be in form of accidents, traffic jams, pollution, parking problems and right-of-way challenges. Transport Geography is an important arm of Economic Geography that grew tremendously with changing paradigm in Geography. Shortly after the Second World War, some conceptual clarifications occurred within the field of Human Geography that positioned Transport Geography, as distinct from the study of Transport studies.

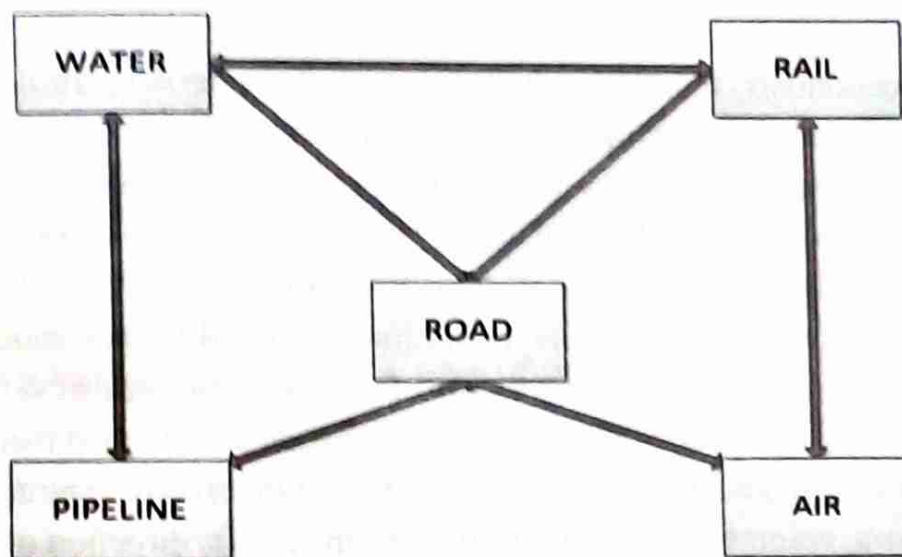


Figure 1: Transport Modal System Relationship.

What Is 'Transport'?

The movement of people, goods and information has always been an important and fundamental component of human endeavours since creation; and, it has continued to be more complex as the population increases. According to Jean-Paul Rodrigue, Claude Comtois & Brian Slack (2006),

Transportation is concerned with mobility, particularly with how the mobility takes place in the context of a wide variety

of conditions. A driving force of the global economy resides in the capacity of transport systems to ship large quantities of freight and to accommodate vast numbers of passengers.

Transportation is therefore, an economic activity that trades space with time, because one can overcome the barrier of space that comes up in the forms of human and physical constraints while trading this opportunity with the vast land which it occupies (Ogunbodede, 1998; 2017). The multifarious nature of constraints makes the study of transportation multidisciplinary.

Economists, therefore, study the cost characteristics of different modes of transport; engineers study the operating characteristics of the transport modes; political scientists study regulatory policies of each transport mode, the mechanical and electrical engineers play prominent roles in making various means of transportation possible while lawyers study the laws governing the operation of the different modes of transportation. It is the arrangements of spatial structures of different land uses and the understanding of the processes that created them that is the focus of geographers. Transport Geographers are interested in what flows, volume of what flows, time of the flows, direction of flows and constraints to what flows.

Analytical and Descriptive tools

The 'quantitative revolution', in Transport Geography, follows closely the historical development of the discipline itself. Before 1960, transport geographers were satisfied with the cataloguing of features of movements, in terms of modes and their description. At that time, the basic geographer's questions were "what" is where. Later on, in the early 1960s transport geographers were no longer contented with mere identification of phenomena and description of events in space. Questions about "what" those things were and "how" those things became located and "where" they were located became prominent in geographic enquiry (Onokerhoraye, 1984).

Transport geographers in the 1970s started probing the movement of goods, passengers and information as well as their patterns in space. The shift brought about an increasing dependence on mathematical tools and multi-variate techniques for studying and solving the complex system of transport. The 'revolutionary' effect of this paradigm shift on the spatial organization of society has added much value to Transport Geography as an important arm of Human Geography.

Ever since more transport geographers have continued to depend on using mathematical tools in dealing with transport problems as a means to an end, but not as an end in itself (Ogunbodede, 2004; Ogunbodede & Ale, 2015).

History of Transportation

Transport studies predate the Birth of Christ (BC). The growth and development of various type of transport in a chronological way is shown in Table 1. During these various periods, means of movement used on the various modes of transport such as land, water and air include the following: airplane, airships, jets, hovercraft, helicopters, bicycles, cars, rockets trains steamboats, submarines, wheel carts and pipelines

Models of Transportation Development

There are two basic models which explain how transport developed and they are very popular in the study of transport. The first is the one conceptualized in a coastal environment as postulated by Taaffe, Morrill & Gould (1963) and that of Lachene in a mid – continental environment.

Table 1: Historical Development of Transportation.

Period	Historical development
3500BC	This period coincide with the period when fixed wheels on cars were invented. It was during this period that wheeled chariot came into limelight and became widely used.
2000BC	This period coincide with the era when canoes and river boats were invented and used along the riverine areas.
181-234 BC	This is the period when horses were domesticated and used for transportation. It marks a departure from trekking as a means of moving from one place to another.
770AD	A little development occurred during this period as man was able to invent iron horseshoes propelled by horses.
1492AD	Leonardo da Vinci theorizes about flying machines with over 100 drawings to illustrate his theories on flight. The thinking of the possibilities of flight was conceptualized during this period
1620AD	Cornelis Drebbel invented the first submarine that is an human oared submersive
1662AD	Blaise Pascal invented the first public bus which was horse propelled. This public transport operated on a regular route, maintained scheduled movement and operated a fare system.
1783AD	The first steamboat was demonstrated by Marquis Claude Francois de Jouffroy using a paddle on a wheel steamboat.
1783AD	This was the time when Montgolfier brothers invented the first hot air balloons.
1787AD	This was the year when the first steam boat was invented.
1789AD	This was the year when the first self-propelled road vehicle was invented by Nicholas Joseph Cugnot.
1790AD	This was the period when bicycle was invented.
1801AD	The first steam powered locomotive designed for roads was invented by Richard Trevithick.

1807AD	Though unsuccessful, Isaac Rivas makes a hydrogen gas powered vehicle
1814AD	George Stephenson invented the first practical steam powered railroad locomotive
1862AD	Jean Lenoir invented a gasoline propelled engine automobile.
1867AD	The first motorcycle was invented
1868AD	Compressed air locomotive brake for train was invented by George Westinghouse.
1871AD	First cable car was invented
1885AD	Karl Benz built the world's first practical automobile to be powered by an internal combustion engine.
1903AD	The Wright Brothers invented and fly the first engine airplane
1926AD	The first liquid propelled rocket launched
1940AD	Modern helicopters invented
1947AD	The first supersonic jet flight was invented
1956AD	Hovercraft invented.
1964AD	Bullet train transportation invented
1969AD	The first manned mission to the moon popularly known as Apollo took place
1970AD	The first Jumbo jet invented.
1981AD	Space shuttle launched

Taaffee, Morril and Gould model

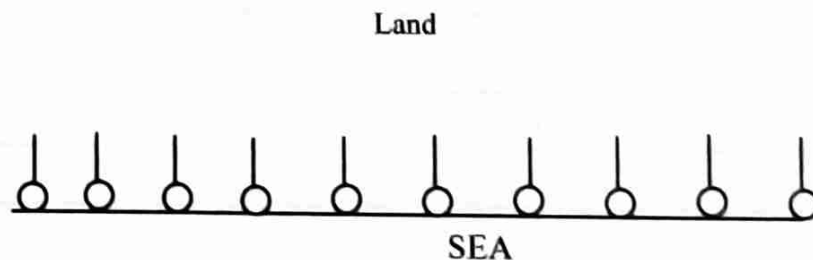
According to Taaffee et al. (1963), the historical evolution of transport system in developing countries is influenced by political, economic and military factors such as:

- a. The diversity and zonal arrangement of the vegetation of the regions
- b. The spatial distribution of the mineral resources
- c. The need to develop internal transport network.

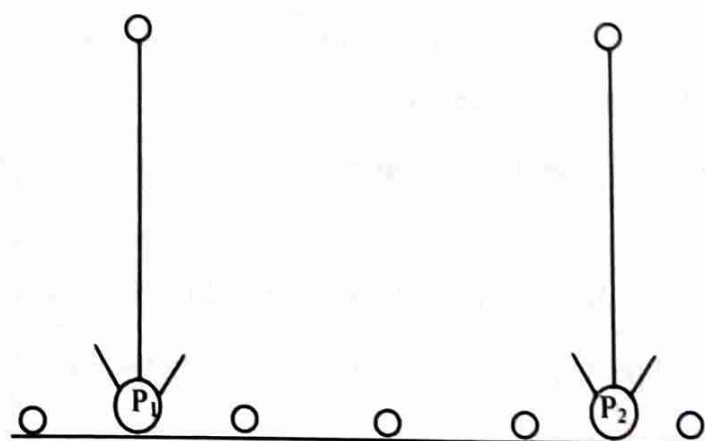
Based on these conditions, a model of the sequences of how transport system in developing countries evolved with six sequences as shown below:

- i. Scattered ports
- ii. Penetration lines and port concentrations
- iii. Development of feeders
- iv. Beginning of interconnections
- v. Complete interconnections
- vi. Emergence of high priority main streets.

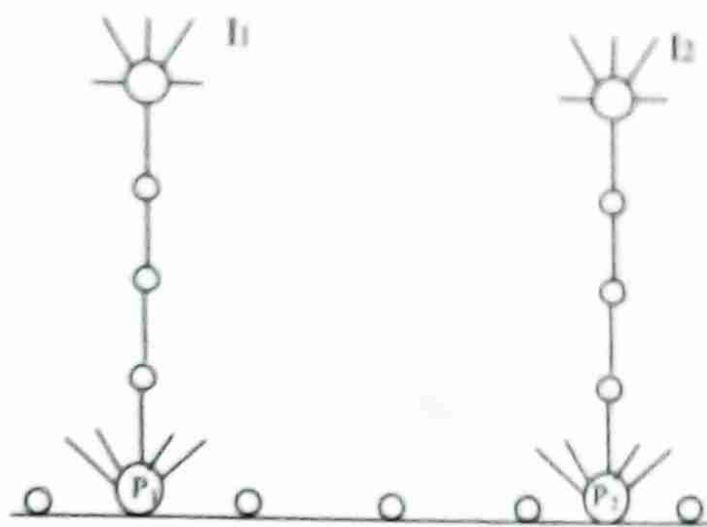
The first stage was dominated by smaller ports which were used as origin and destination for fish farming activities in the coastal region of the developing world. The numerous ports provided O-D points for the fresh water transport and their linkage to the ocean or sea as the case may be (Figure 2).



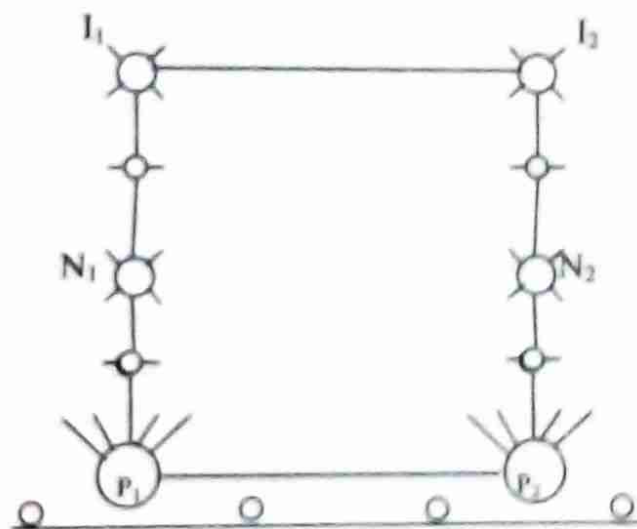
1. Scattered Ports



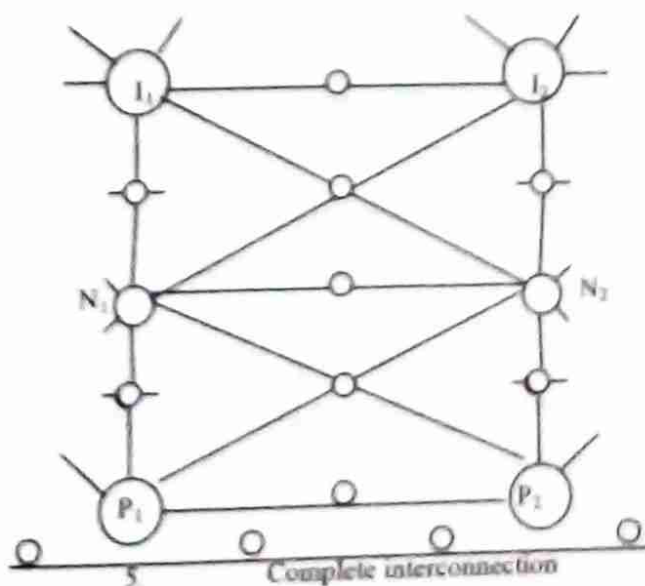
2. Penetration Lines and Port Concentration



3. Development of Feeders



4. Beginnings of interconnection



5. Complete interconnection

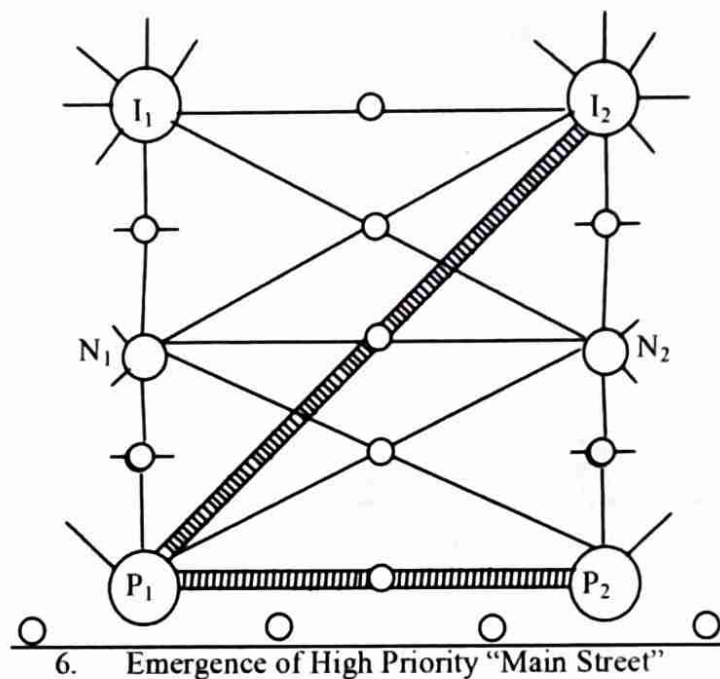


Figure 2: Historical Evolution of Transport System in Developing Countries.

Source: Taaffee, Morill & Gould (1963).

The second phase has to do with the period when penetration lines started into the inland, while the third stage witnessed the development of surviving ports' penetration lines to centres of administration and economic activities of the internal lands by roads and railways. This lateral linkage was well established using the road mode of transportation.

The fourth stage witnessed the beginning of intersection between the western and eastern line using both road and railway system, while the fifth stage witnessed the era when complete interconnection took place in the continent. Some prominent cities which were not lucky to fall in line with the railway line became less prominent while others that fall within the corridor of passage developed rapidly.

The sixth stage witnesses the stage when high priority main streets or highway started to emerge. This stage is often referred to as the stage when the network was completed (Figure 3).

Lachene's Model

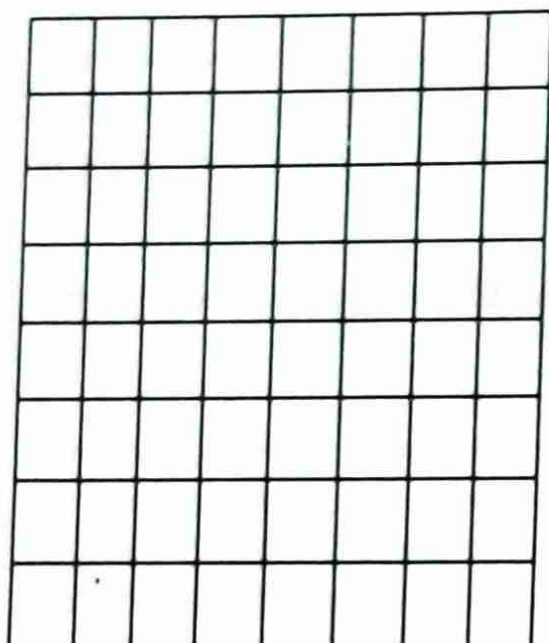
Lachene's model was conceived within a mid-continental situation as in contrast to Taaffee, Morrill and Gould's model. Lachene assumed an inland area with is uniformly flat and from which population is evenly distributed.

- a. Since it was a uniform plain, the network is of regular grid pattern.
- b. At the second stage, a few settlements gradually grow, more than others, perhaps through chance or a greater potential for economic prosperity. At the emergency of urban centre at intersection point, made possible as a result of its centrality, other mode of transportation evolved. For example railway came before road as a result of its economic importance.
- c. The third stage is constituted by the connectivity of nodes. The construction of new network encouraged further network in the town they connect and these towns developed into eminence.
- d. The 4th stage is the stage that is referred to as pre-eminence.

Particularly, two major inland towns, a major external bridge head warranted further network to be constructed. These networks link the local bridge with the two major inland towns which link others in turn.

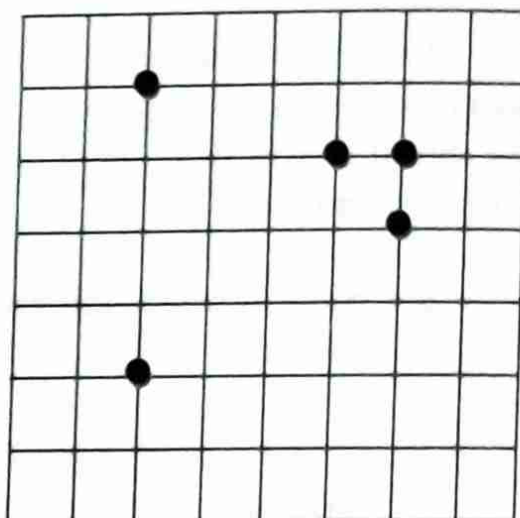
At this 4th stage, activities are at its peak. According to Lachene (Figure 4), a 5th stage might develop through a deliberate government policy. Such a government policy might occur in a region originally by-passed as economic depressed areas. Such a depressed area might deliberately be connected, as in the case of Appalachian in North American (Figure 3).

I



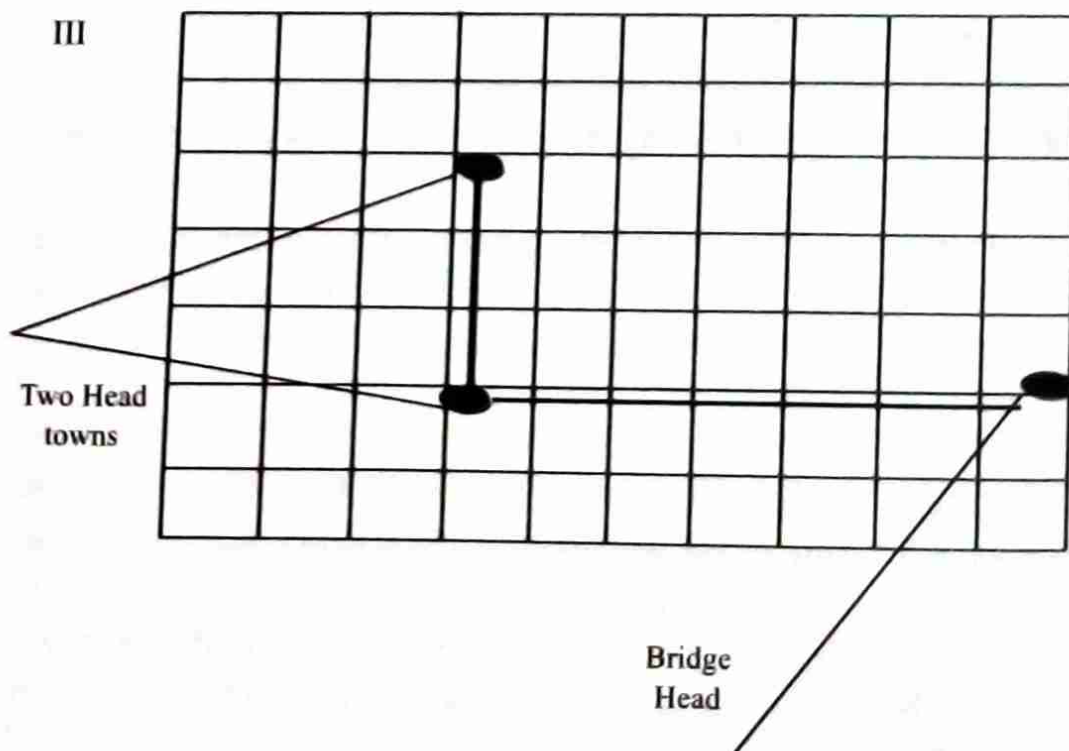
Space grid pattern of dirt or path roads

II



Emergence of Urban Centres at Centres at intersection

III



iv

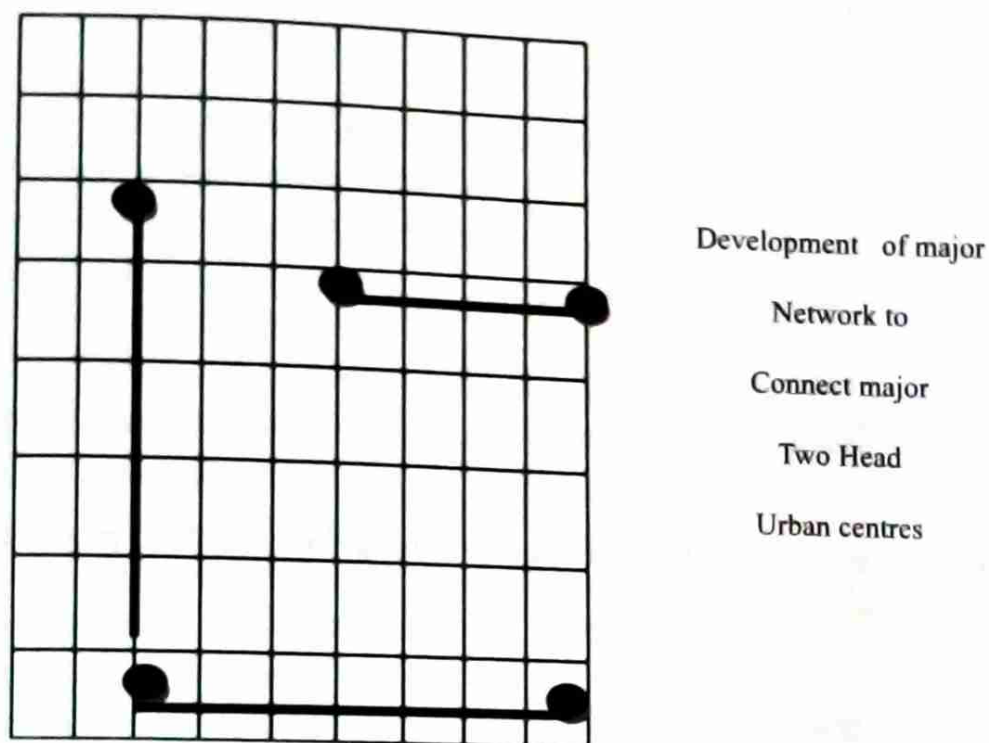


Figure 3: Lachene's Model of Transport Development in Developing World.

Transport Demand Model

We demand for transport because of the demand for some other things, which be identified in terms of different variables and the classification used may vary. In many situations, the classification we use is the one dealing with reasons for movement or trip purposes.

Purposes of trips or movement under broad categories are Trip to work; Shopping/business trips; Recreational trips; and Trip to different land uses.

A more convenient way of classifying transport demand is the use of spatial classification. Thus, we have point-to-point; area-to-area; distribution demand (Figure 4) and collection demand classifications (Figure 5).

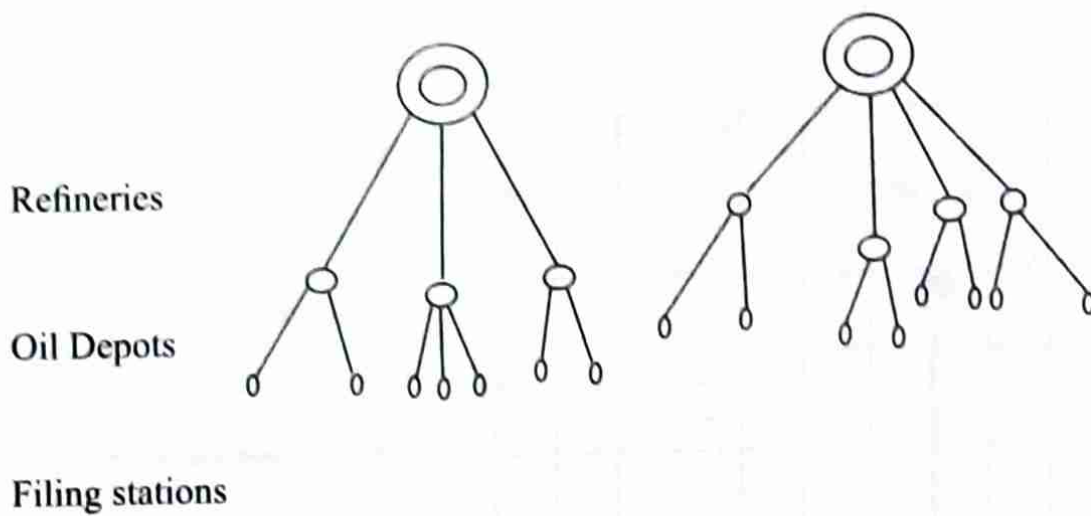
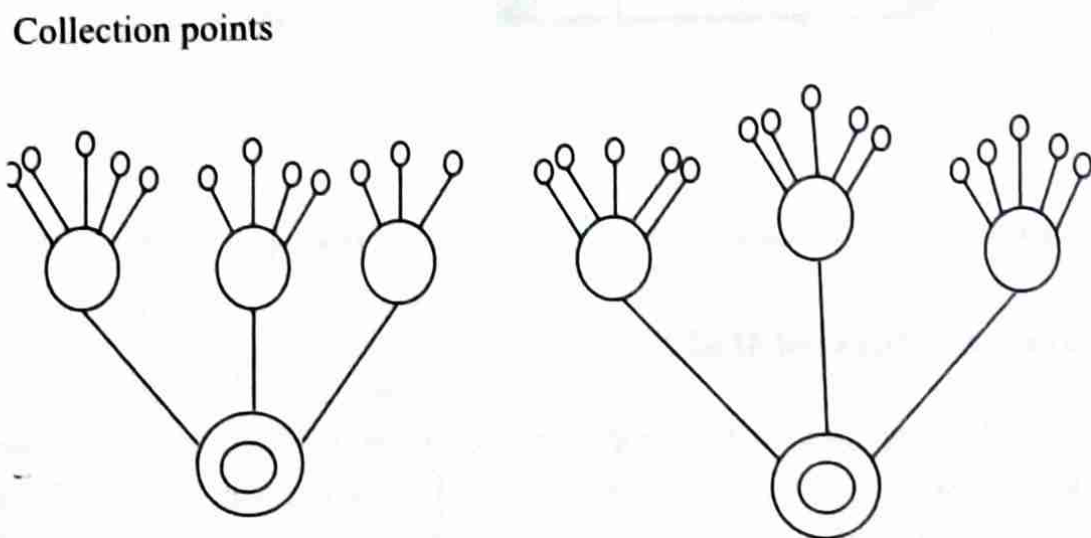


Figure 4: Example of Distributional pattern using the refined oil production from few Depots.



Produce (e.g cocoa) Buyers

Figure 5: Example of Distributional Pattern using Cocoa Production from Numerous Farms or farmsteads.

Model of spatial interaction

Transportation as an economic activity trades space with time and money. Space endows a place with a particular uniqueness, which results in regional differentiation that produces trade or exchange or movement in space which in turn facilitates transport development.

Ullman's (1956) theory outlined three (3) conditions of complementarity, intervening opportunity and transferability that affect transport development.

Complementarity which is created by area differentiation triggers off movement between the two regions. Major causes of differences may be due to ecological differences, natural resources, education, social administration, war, technological advancement, etc.

Intervening opportunity is the spatial sponge that soaks potential interaction between two complementary spaces because it provides alternate opportunity.

Transferability involves the constraints imposed on movement of goods by distance, generally, measured in terms of time, money, mileage and nature of the route between areas of demand and that of supply. Where the cost is too high, interaction may be drastically reduced or cut-off. Transferability conditions are not static, rather, it changes with time as a result of improvement in transportation which in turn results in interaction and trade.

The Spatial and Temporal Variations in Transport Model

The demand for transport variation in space can be quantified as follows:

- The demand in terms of volume per unit area; and frequency of persons per unit of kilometer, expressed in terms of output e.g. tonnage or tons per sq km.

The temporal variation may be due to:

- The flow of movement during different period in a day. Thus you have morning, afternoon and evening peak periods. In most cities the peak periods coincide with period of resumption at work place or when students resume schools.

- The closing period is also another peak; the volume of traffic during peak periods; and the interaction of traffic between two places using interaction model formulae.
- The interaction of people between two areas can be calculated using the interaction model as postulated by Newton and amplified by Ullman (1956).

Modes of Transportation

There are different types of transport which operates on land, water, air and pipeline as the case may be. These modes involve and include human portorage or human traction, the use of animals as beast of burden and draught purposes, motor road transport, rope and cable ways, pipelines, inland water transport, ocean or marine transportation and air transportation.

Human Porterage

Human portorage is still very common and widely used in the rural areas of developing world. Where practiced, the people carry their loads on their heads or shoulders and trek distance to effect distributional activities especially where routes are narrow.

Inland Waterways

Inland water transportation is common in countries blessed with fresh waters adorning their hinterlands. According to Onemelukwe & Filani (1983), rivers were the first major means of transport and

Railway System

These are parallel rails over which wheeled vehicles or coaches such as train travel. It is mostly designed for the movement of cargoes and heavy goods over long distances. The cost of initial construction of rail track as well as the maintenance of the gauges and equipment constitute major challenges to developing countries.

In the advanced countries of the world, such as Japan, USA, Canada, Netherlands and Germany trains are fast comfortable and cheap and also ran on schedule system.

Unlike in the developed countries, the competition between the road and railway has caused a fierce decline in the patronage of the railway system, to the extent that the road systems as constructed to run parallel to the railway are faster when compared to the railway system.

Road System

Road transportation, first developed as complementary to the railway, has become the fastest growing means of movement in West Africa (Onyemelukwe & Filani, 1983).

It is widely used by people because of its advantages in terms of speed, regularity of service and flexibility. Road transport has an advantage over other modes of transportation for short journeys and it provides door to door services more than any other mode of transportation.

Perhaps more important, is that it provides feeder services for other transport system (Filani, 1977).

Air Transport System

Air travel in various countries started mostly after the Second World War and has grown tremendously in domestic and international services. Air travel has made international travels possible in a matter of hours, there by promoting international trade.

Maritime Transport System

Water transportation and is restricted to countries that have boundaries with oceans, except where they have inland water that enables them to have access to inland water transportation. According to Onyemelukwe & Filani (1983), maritime traffic continues to increase

in individual countries due to accelerated economic development, diversification of agriculture exports and phenomenal increase in the export of mineral products particularly petroleum products and iron ore and to the increased consumption of imported goods arising from the rise in household incomes.

Water transportation is cheaper when compared to rail, road and air transportation. It has made international trade convenient. Such that large cargos can be moved.

Pipeline Transportation

Pipeline transportation has made the movement of water, gas or petroleum and other related products convenient. Most of the time, leakage of such pipes can be costly and often lead to wastage of products and environmental pollution. The running cost when properly installed is very minimal and a very efficient means of transporting goods from one place to another.

Urban Environment and Transport System

The Industrial Revolution of the 19th Century and the rapid development of the automobile in the 20th Century accelerated the process of urbanization throughout the world. The effect of industrialization on urbanization created some urban transportation challenges manifested in the forms of movement because urban land use becomes more dispersed.

The three classical ecological theories of urban morphology as articulated by Berry (1964), helped to explain the structure of urban space. Urban transport infrastructure forms the foundation of the urban transport system. This implies that a poorly-developed transport infrastructure can create problems for urban transport management/system while a well-developed infrastructure may pose little or no problem.

Communication: Meaning and History

Communication as earlier said refers to the transmission of messages and graphics/pictures to share thoughts, ideas and information by signal, speech and writing or even by behaviour. Communication can be classified into personal and mass communication. In modern times personal communication is facilitated through postal, telephone and cell-phone services. Mass communication involves the transmission of information to a large number of people through books, newspapers, magazines, radio, television, cinemas, cable television, satellite communication and the internet.

Human communication such as sign language had existed since the emergence of man on earth. For instance, as far back as 130,000 BC, early man created depictions of primitive life in form of paintings on cave walls. Such paintings might have served the purpose of passing information on the location of certain types of wild life or other food sources to others, or might have just been a way of recording some individual experiences. Communication developed gradually as human intelligence advanced first through the use of images that resemble real objects (pictograph) and images that symbolize ideas and concepts (ideogram); and sound by symbols (phonogram) that formed the foundation of most modern written languages (Adam, Faux & Reiber, 1988).

Writing emerged independently in Mesopotamia and Egypt around 3100 BC (Fagan & Beck, 1996) and in China around 1200 BC (Boltz, 1986). Ancient writings were etched on clay tablets and blocks of copper and inscribed on papyrus produced from tree barks. Although, handwritten books and documents had been in existence since before 500 AD, most of these early books were designed for religious worship and were mostly written by monks in monasteries. But, from the 13th century secular books were produced for the purpose of spreading knowledge outside religion (Creative Displays Now.com, 2018). The concept of printed books developed in China as far back as the 9th century, with the oldest known printed book produced in

868 AD. Only very limited copies of books were produced until the 15th century when printing press was invented in Europe. Newspapers are regarded as the oldest form of mass media first as news-sheets in Rome around 100 BC (Lee, 2008) and continued until the 19th and 20th centuries with the emergence of modern forms of personal and mass communication beginning with the postal services, telegraph, telephone, radio, television, cable television and the internet.

The Process of Communication

All communicated messages undergo a process that involves at least two people (sender and receiver). Communication is deemed successful when desired result is achieved in form of reaction or response. A corresponding communication process (loop) exists for every communication for achieving effective communication (Figure 6).

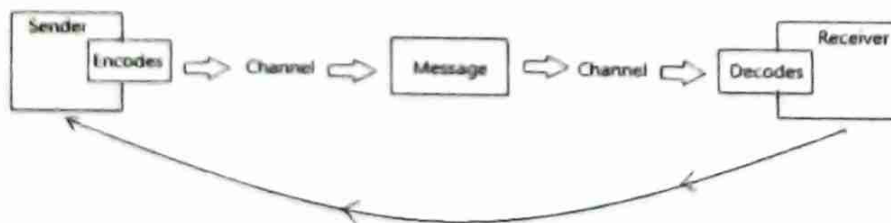


Figure 6: The Communication Model.

Source: Adapted from Adler & Towne (1978).

Based on a stimulus (internal or external), the sender transmits a message which he/she must first transform into a code. The process of encoding involves selecting suitable verbal or non-verbal code which is then transmitted through an appropriate medium. However, the choice of a medium is influenced by factors such as the receiver, nature of the message and urgency attached to the message (Ludlow & Panton, 1992). There is a wide variety of means of delivery ranging from non-verbal signal, body language, speech, writing and so on from which choice could be made. The receiver has the responsibility of decoding and perceiving the message. This means that the receiver must have

an understanding of the particular medium of communication used. Interference in the medium may result in misinterpretation of the message. The receiver's response to the sender is the feedback which may also be a signal or action.

Modes of Communication

Modern modes of communication can be classified into newspapers, postal services, telephone, mobile cellular phone, radio, television and the internet.

Newspapers

The ancient Romans and Chinese are known to have produced various forms of news-sheets and news reports on government activities for a limited number of the elite. The "Acta Diurna" or "Daily Actions" of the Roman government is the oldest known news-sheet. The Tang dynasty of China was used to block-print a "Palace Report" from the 7th century (Lee, 2008). Newspapers began in Europe as political tracts and pamphlets in the 14th and 15th centuries. True newspapers did not emerge until the early 17th century beginning in England, with the English newspaper named the *Oxford gazette* which began in 1665 (Lee, 2008).

Modern newspapers are periodic (daily, weekly, monthly, etc.) publications providing updated information on various areas of human endeavour such as arts, business, politics, sports and advertisement (Sanjoy, 2013). There are now online newspapers that restrict their operations to their websites only. Newspapers have become an important part of life by providing current news, entertainment and a tool for transmission of ideas. However, while global newspaper circulation increased by about 21 per cent between 2011 to 2016, circulation declined in all regions of the world with the exception of Asia, as result of rising interest in digital news sources.

Some of the major newspapers in the world are The Wall Street Journal, The New York Times, the Daily Mail, Daily Mirror and Daily Express, La Croix and Les Echos in France; Corriere Della Sera and La Repubblica in Italy; Pravda, Argumenty i Fakti and The St. Petersburg Times in Russia among many others. Yomiuri Shimbun, Asahi Shimbun (both in Japanese) and The Japanese Times (English newspaper). Express are important newspapers with large circulation (Agility, 2017; Statistics, 2017; Online Newspapers.com, 2018). The Times of India is the largest English language newspaper in the world, with circulation of 3.14 million per day, while the Yomiuri Shimbun with 14 million is the largest newspaper in any language in the world (Cridland, 2011). There are newspapers that specifically focus on some areas of human endeavour such as the Financial Times (UK) and The Wall Street Journal that centre on business and financial news. Some major newspapers in Africa are shown in Table 2.

Table 2: Some Major Newspapers in Africa.

	Countries	Newspapers
1	Angola	Nova Gazeta
2	Benin Republic	La Nation
3	Burkina Faso	Courrier Confidential
4	Cameroon	Cameroon Tribune
5	Egypt	Al Ahram
6	Ethiopia	Addis Fortune
7	Gabon	L'Union
8	Ghana	Ghanaian Times
9	Liberia	Concord Times
10	Nigeria	Punch
11	Somalia	Somali Press
12	South Africa	Herald
13	Tanzania	Daily News
14	Tunisia	La Presse
15	Uganda	Kampala Sun

Source: ABYZ Web Links (2018).

Postal Services

The origin of postal service can be traced to about 2400 BC in Ancient Egypt when the Pharaohs used carriers for the transmission of decrees to different territories of the state. Earliest organised postal system can be traced to the Persian Empire (about 550 BC), which was the first true mail service in the Roman Empire during the reign of Augustus Caesar (62 BC – 14 AD). Two mail services were developed with one being for government correspondence and the other for the public (New World Encyclopaedia, 2018). Modern mail services are now organised by both the government and privatised services and are subject to international regulation, organisations and agreements. Privately owned companies carry out courier services which mostly involve parcel delivery and expedited (fast) mail services.

About 403 billion letters were handled by postal services around the world in 1995 alone (World Trade Organization (WTO), 1998). The usage of newer forms of communication such as Facsimile (FAX) and Electronic mail (E-mail) has greatly reduced the significance of posted mail in contemporary times.

Telephone

The telephone developed as an improvement over the telegraph, was used in sending electrostatically generated signals through a wire that enabled information to be sent and received instantly. With the telephone it became possible to transmit words rather than just signals over physical space. Alexandra Graham Bell invented the telephone in the United States, in 1876 (The Library of Congress, 2017). The telephone allows the sender and receiver who may be separated by great geographical distance to be in direct contact and it became the first communication device that enabled back and forth speaking and listening interaction (Franklin, 1999). It helped in promoting spatial interaction and accelerated the pace and scope of businesses while at the same time stimulating/expanding social relationships (Franklin, 1999). The significance of fixed telephone lines has however declined in recent years due to the development and spread of mobile (cell) phones (Figure 7).

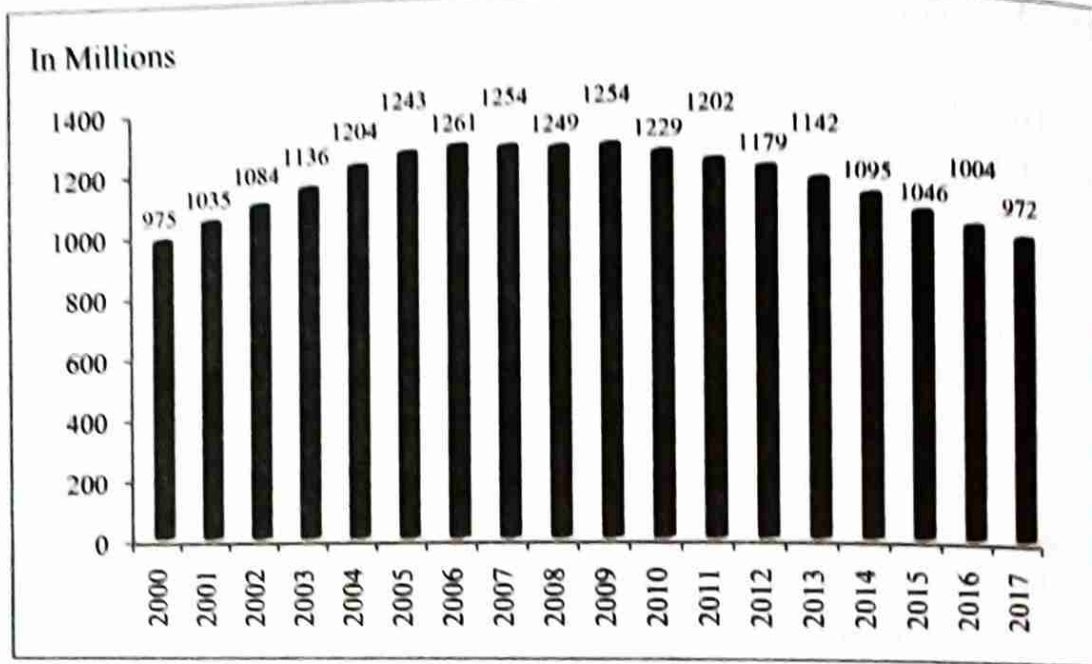


Figure 7: Number of Fixed Telephone Lines Worldwide from 2000 to 2017 in millions.

Source: Statista (2018).

Mobile Cellular Phone

The introduction of wireless handsets enabled people to make calls and send text messages even while in transit within wide geographical areas. The first mobile phone call was made in April 1973 but, the first commercial mobile phone was introduced in 1983 (Goodwin, 2017). While early mobile phones were bulky, heavy, and unreliable, improvements in wireless radio technologies have ensured the introduction of handier and more reliable mobile phones. Modern models of cell phones enabled them to perform some computer tasks and to function efficiently in most locations around the world. Mobile phone subscription around the world is over 7 billion (International Telecommunication Union (ITU), 2015). Mobile phone technology has made it possible for many underdeveloped and remote areas around the world to have access to phone services. It is beneficial to businesses, educational, health and agricultural sectors of the economy. China has the highest number of mobile phone subscribers among the countries of the world (Table 3).

Television

The history of television is the history of series of inventions that began with Joseph May (in 1873), who discovered that variation in light intensity can be transformed into electric signals and can therefore be transmitted (Peters, 2000). The first television broadcast was made in Berlin, Germany in March, 1935, which was followed with the launching of television broadcast in Paris in September of the same year. The use of external antennas erected at high elevation, cable television services were further developed to receive reception from multiple stations to provide more extensive programming choices for subscribers in the late 1950s. Unlike regular television stations cable channels are often specifically devoted to particular forms of program such as News, movies, sports and so on (M. Library, 2016; 2016a; Benedicto, 2017).

No doubt the television is very useful for education, but it is also seen as one of the greatest distraction for students. In addition, there are also concerns related to proliferation of advertisements which are believed to encourage consumerism and obesity (American Academy of Pediatrics, 2006). The emergence and growth of computer and the internet has significantly reduced the importance of television in the contemporary world.

Internet

This is the mode of sending messages almost instantaneously. In its most basic form the internet refers to a group of computers connected to each other for the purpose of sharing information. The origin of the internet could be traced to 1967 when it was originally developed for the military. Its use was expanded for the US army in 1983 and opened for commercial purposes in 1989 (Creative Displays Now.com, 2018). People now use the internet all over the world with an estimated 3.2 billion internet users worldwide out of which 2 billion reside in developing countries. However, while two third of households in developing countries have no access to the internet only

about 20 per cent in the developed world have no access (International Telecommunication Union (ITU), 2015).

The internet provides access to information, video conferencing, internet telephony, electronic mail (E-mail), E-commerce, E-banking and telemedicine. The E-mail is the most important use of the internet (EDN network, 1995; Karen, 2009), with millions of messages passing through the internet every day (Karen, 2009). It has transformed the world into a global village.

The internet has contributed to the intensification of international crime. In 2016 alone 2.9 million British organisations were hit by cyber-crime resulting in losses of £29.1 billion. It is estimated that the global cost of cyber-crime would increase from about \$500 billion in 2015 to about \$2 trillion by 2019. This is not surprising considering the fact that cyber security incidents increased by 38 per cent between 2016 and 2017 (Symondson, 2017). The internet has also become a centre of activity for terrorist organisations for recruitment of new followers, exchange of information and planning of terrorist activities. International drug cartels, prostitution/human trafficking rings and other criminal groups now take advantage of the ease of use of the internet to advance their businesses and elude security operatives.

The World as a Global Village

The idea showed how modern electronic technology has reduced the world into a small community. The phrase "global village" was originally coined by Herbert Marshall McLuhan who noted that the earth has been shrunk by modern developments in communication (Merriam-Webster Online Dictionary, 2018). Modern technology has made it possible to instantaneously send and receive information at multiple points on the globe at the same time. The world is now closely connected by modern telecommunication that there is now a great interdependence economically, socially and politically.

With the internet and other modern forms of telecommunication physical distance is no longer a barrier to communication because modern-day electronic technology has greatly enhanced the ease and speed of communicating over very long distances. It is possible for people to obtain and send information, react to news quickly, relate with people in different parts of the world and engage in international business transactions now than ever before from the comfort of their homes or offices or even while transiting.

References

- ABYZ Web Links (2018). All countries newspapers and news media-countries and regional. Retrieved from: <http://www.abyznewslinks.com/allco.htm>
- Adam, J.M., Faux, D.D. & Reiber, L.J. (1988). *Printing technology*. (3rd edition). New York: Delmar Publishers Inc.
- Adler, R. & Towne, N. (1978). *Looking out/looking in* (2nd edition). New York: Holt, Rinehart and Winston.
- Agility PR Solutions (2017). Top 15 US newspapers by circulation. Retrieved from: <https://www.agilitypr.com/resources/top-media-outlets/top-15-daily-american-newspapers/>
- American Academy of Paediatrics (2006). Policy Statement: Children, Adolescents, and Advertising. *PEDIATRICS*, 118 (6), 2563-2569. Retrieved from: <http://pediatrics.aappublications.org/content/pediatrics/118/6/2563.full.pdf>
- Benedicto, C. (2017). Television History, Importance, Advantages and Disadvantages. Retrieved from: <https://www.slideshare.net/ChiaraBenedicto/television-history-importance-advantages-disadvantages>
- Boltz, W.G. (1986). Early Chinese Writing. *World Archaeology*, 17 (3), 420-436.

- CIA World Factbook (2018). Mobile Phone Subscription (July 2016). Retrieved from: <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2151rank.html>
- Creative Displays Now.com (2018). History of Communication from Cave Drawings to the Web. Retrieved from: <https://www.creativedisplaysnow.com/articles/history-of-communication-from-cave-drawings-to-the-web/>
- Cridland, J. (2011). What are the largest newspapers in the world, in terms of circulation? Retrieved from: <https://www.quora.com/What-are-the-largest-newspapers-in-the-world-in-terms-of-circulation>
- EDN Network (1995). Top 10 Uses of the Internet. Retrieved from: <https://www.edn.com/electronics-news/4351406/Top-10-uses-of-the-Internet>
- Eschner, K. (2017). The first telephone Book Had Fifty Listings and No Numbers. Retrieved from: <https://www.smithsonianmag.com/smart-news/first-telephone-book-had-fifty-listings-and-no-numbers-180962173/>
- Fagan, B.M. & Beck, C. (1996). *The Oxford companion to Archaeology*. Oxford University Press: London.
- Filani, M.O. (1977). Transport and communication. In C. Knight & J. Newman (eds.), *Contemporary Africa: geography and change*, Prentice-Hall, New Jersey pp.342-355
- Goodwin, F. (2017). The history of mobile phones from 1973 to 2008: The handsets that made it all happen. Retrieved from: <http://www.knowyourmobile.com/nokia/nokia-3310/19848/history-mobile-phones-1973-2008-handsets-made-it-all-happen>
- ITU (2015). *ICT facts and figures: The world in 2015*. International Telecommunication Union: Geneva. Retrieved from: <https://www.itu.int/en/ITU-/Statistics/Documents/facts/ICTFactsFigures2015.pdf>
- Karen, K. (2009). 10 most common uses of internet. Retrieved from: <http://www.sooperarticles.com/internet-articles/10-most-common-uses-internet-19405.html>
- Lee, L. T. (2008). History and development of mass communications. In Lutra, R. (ed.) *Journalism and Mass Communication (Sample Chapters)*. *Encyclopaedia of Life Support Systems*, 1. Retrieved from: <https://www.eolss.net/Sample-Chapters/C04/E6-33-02-01.pdf>
- Levine, A. (2011). Importance of radio in the 21st century. Retrieved from: https://www.cjfe.org/the_importance_of_radio_in_the_21st_century

- Ludlow, R., & Panton, F. (1992). *The essence of effective communication*. New York: Prentice Hall.
- M. Libraries (2016). The evolution of television. Retrieved from: <http://open.lib.umn.edu/mediaandculture/chapter/9-1-the-evolution-of-television/>
- M. Libraries (2016a). The relationship between television and culture. Retrieved from: <http://open.lib.umn.edu/mediaandculture/chapter/9-2-the-relationship-between-television-and-culture/>
- Merriam-Webster Online Dictionary (2018). Definition of global village. Retrieved from: <https://www.merriam-webster.com/dictionary/global%20village>
- New World Encyclopaedia (2018) Postal System. Retrieved from: http://www.newworldencyclopedia.org/entry/Postal_system
- Odedokun, R. (1991). Accident and productivity level in the transport industry. In T. Bolade & A.A. Ogunsanya (eds.) *Accident control and safety measures in mass transit operations in Nigeria*. JUP, Ibadan.
- Ogundele, J.A. (2010). *Human geography for beginners: An introductory course*. Nigeria, Akure, Adeyemo Publishing House.
- Ogunbodede, E.F. (1997). Transport management techniques for rapidly changing urban land use: The case of Akure. *International Journal of Environment and Development*, (1), 81-86 .
- Ogunbodede, E.F. (1998). Curriculum development on safety awareness education. *The Trainer*, 1(3), 13- 23.
- Ogunbodede, E.F. (2004). Transportation and urban environment. In I. Vanduchikolo, A.A. Ogunsanya & A.G. Sumaila (eds.), *Perspectives on urban transportation in Nigeria*, Published by the Nigerian Institute of Transport Technology, Zaria, M.O.D. Press, Kaduna, Nigeria. pp 101 – 200
- Ogunbodede, E.F. & Olurankinse, F. (2008) Reducing mobility barriers for sustainable intra- urban transport development in Nigerian cities. *Journal of Geography and Planning Sciences (JOGEPS)*, 2(1), 41-50.
- Ogunbodede, E.F. (2008). Urban road transportation in Nigeria from 1960 to 2006: Problems, prospects and challenges. *Ethiopian Journal of Environmental Studies and Management*, 1(1), 145-164.
- Ogunbodede, E.F. & Ogundare, B.A. (2014a). Intra-urban parking capacities and parking Demands in Akure, Nigeria. Urban Environment. 7th International Conference of Research and Environment, held at R. V. College of Science and Engineering, Bangalore, India on December 26-28, 2014.

- Ogunbodede, E.F. & Ogundare, B.A. (2014b). Intra-urban parking capacities and parking demands in Akure, Ondo-State, Nigeria. *European Environmental Scientific and Ecology Journal*, 1(1), 1-10.
- Ogunbodede, E.F & Ale, A.S. (2015). The regression model in the forecast of travel demand in Akure, Nigeria. *Analele Universitatii Din Oradea Seria Geografie*, 25(2), 178-186.
- Ogunbodede, E.F. (2007). Air transportation in Nigeria: Past, present, lessons and challenges for aviation industry. *Journal of Geography and Planning Sciences (JOGEPS)*, 1(1), 7-18.
- Ogunsanya, A.A. (2004). Introduction on urban transportation in Nigeria. In I. Vandu – Chikolo, A.A. Ogunsanya & A.G. Sumaila (eds), *Perspectives on urban transportation in Nigeria*. Nigeria Institute of Transport Technology (NITT) Zaria Pp.1-26. Online Newspapers.com (2018). Top 50 United Kingdom (UK) Newspapers. Retrieved from: <http://www.onlinenewspapers.com/Top50/Top50-CurrentUK.htm>
- Onyemelukwe, J.O.C. & Filani, M.O. (1983). *Economic geography of West Africa*. Lagos: Longman Nigeria Limited.
- Peters, J. (2000). A history of television. Retrieved from: http://www.ebu.ch/dvb_articles/dvb_tv-history.htm
- Rodrigue, Jean-Paul Claude Comtois & Brian Slack (2006). *The geography of transport system*. Milton Park, Abingdon, Oxon OX 144 4 RN, Canada: Routledge Publishers.
- Sanjoy, R. (2013). Short paragraph on importance of newspaper. Retrieved from: <https://www.importantindia.com/6928/short-paragraph-on-importance-of-newspaper/>
- Smith, S. (2014). Radio: The internet of the 1930s. Retrieved from: www.americanradioworks.org/segments/radio-the-internet-of-the-1930s/
- Symondson, J. (2017). The rise of cybercrime continues to accelerate. Retrieved from: www.information-age.com/rise-cyber-crime-continues-accelerate-123467629/
- Spiker, J.A. (2008). The development of radio. In R. Lutra (ed.) *Journalism and mass communication (Sample Chapters)*. *Encyclopaedia of Life Support Systems*, 1. Retrieved from: <https://www.eolss.net/sample-chapters/C04/E6-33-01-06.pdf>
- Statista (2018). Number of fixed telephone lines worldwide from 2000 to 2017 (in millions). Retrieved from: <https://www.statista.com/statistics/273014/number-of-fixed-telephone-lines-worldwide-since-2000/>

- Statista (2018a). Top fifteen daily newspapers by number of copies sold in Italy in 2017. Retrieved from: <https://www.statista.com/statistics/729663/top-fifteen-daily-newspapers-in-italy/>
- Taafee, Morrill & Gould (1963). Transport expansion in underdeveloped countries. *The Geographical Review*, 53, 503-529.
- The Library of Congress (2017). Everyday mysteries: Telephone. Retrieved from: <https://www.loc.gov/rr/scitech/mysteries/telephone.html>
- World Press Trends Data Base (2018). World press trends 2017: Facts and figures. Retrieved from: <http://www.wptdatabase.org/world-press-trends-2017-facts-and-figures>
- WTO (1998). Postal and courier services: Background note by the secretariat. Retrieved from: https://www.wto.org/english/tratop_e/serv_e/w39.doc