**FOUNDATION AND DEVELOPMENT OF INFORMATION TRANSFER IN ANCIENT PERIOD, THE MIDDLE AGES ORMEDIEVAL PERIOD, THE RENAISSANCE PERIOD**

Information transfer which is the process, by which knowledge is created, produced, disseminated, organized, diffused, utilized, preserved, and destroyed. The very first kind of communication devices appeared in the form of pictographs written on clay tablets. In 1800 BC, China was using smoke signals, three hundred years later, Phoenicians invented the alphabet. With the invention of alphabet, the oldest writing in China was found, 500 hundred years later; China organized a postal service system which was only used for the needs of the government. The early and middle ages actually started from 1100 AD and ended in 1399 AD with the development of stitched books by the Chinese in about 1116 AD. The Europeans started the method of block printing which was first founded by the Chinese. Johann Gutenberg (c. 1400-1468) came out with one of most important inventions in human history. Gutenberg’s development of movable type made possible the spread of humanistic literature to rest of Europe with amazing speed. The ancient and early eras started from 3500 BC and ended in 1099 AD. The very first kind of communication devices appeared in "Sumer" in the form of pictographs written on clay tablets. Pictography is the usage of pictures to express certain ideas and information which means that it is a kind of image communication with the use of a public key. In 2600 BC scripts appeared in Egypt. They spread widely because they were very easy to reserve and use. In 1800 BC, China was using smoke signals. These signals allowed the soldiers who were stationing on the Great Wall of China to warn their friends 500 miles away from a possible danger using the smoke signals from one tower to another. Three hundred years later, Phoenicians invented the alphabet. 500 hundred years later, China organized a postal service system which was only used for the needs of the government. In around 776 BC, pigeons were also used by the Greeks to send messages such as the outcomes of the Olympic Games in ancient Greece to Athens. Plenty of time later, exactly in 500 BC, Greeks started using many different methods of communication which were new and creative such as sending signals via sunlight, via mirrors, and sometimes via shields. They also used fire signals at night. With these techniques, they were able to send messages to a distance that reached 40-100 kilometers depending on the visibility.

The method with the mirrors and the sun was called Heliography, which means writing with the sun light. Another simple method that was also used was colored flags to symbolize specific messages, and these flags were used for a long time in the Greek Navy. Greeks also used Acoustic signals. Acoustic signals are kind of sound communications where a huge musical instrument was used by Alexander the Great to send messages probably that his army could hear from a distance of 5km. This instrument was called the Stentorophonic tube, and this name came from Stentor, a figure of Greek mythology. 100 years later, exactly in 400 BC, cryptography was being used in Sparta. The "Skytale" or "Scytale" was a Spartan method for encryption. It consisted of a piece of wood and a leather strip. Any communicating party needed exactly the same size wooden stick. The secret message was written on the leather strip that was wound around the wood, unwound again and sent to the recipient by a messenger. The recipient would have rewound the leather and by doing this enciphering the message. In around 350 BC, a military Greek scientist and cryptographer invented an optical system for communication similar to the telegraph: the water-clocks. The water- clocks were an early long-distance-communication system. Every communicating party had exactly the same jar, with a same-size-hole that was closed and the same amount of water in it. In the jar was a stick with different messages written on. When one party wanted to tell something to the other, it made a fire sign and when the other answered, both of them opened the hole at the same time. And with the help of another fire sign closed it again at the same time, too. In the end, the water covered the stick until the point of the wanted message. In about 100 AD, Roman couriers started carrying government mail across the empire. The development of papers came five years later by Tsai lun and the true printing appeared in 450 AD in China in the form of ink seals stamped on papers. It was not a long time until China started to print books. That was in around 600 AD. 15 years later, picture books were printed in Japan for the first time ever. In about 1000 AD, Mexican people started fabricating paper using tree barks. The ancient age ended with a great invention, which is the movable type. It was invented by Pi Sheng using clay. As we saw, most of the communication devices in these pages were in the form of writing and signals which means that the communication devices until 1099 AD weren't practical at all.

**THE MIDDLE OR MEDIEVAL PERIOD**

**1.0 INTRODUCTION**

The early middle ages (ca. 476-800), the high middle ages (ca.800- 1300), and the late middle ages (ca. 1300-1453). Each succeeding division had distinctive features. The middle Ages are sometimes referred to as the “Dark Ages” or “Medieval Times”. The term Dark Ages has fallen from use in modern times, but is used because of a lack of written records and progress in the modern sense of the word. Simply put, The Middle Ages are a product of the end of Roman influence across the continent of Europe. The history of the printing press dates back to the 1400's, when Johannes Guttenberg created a replica based on primitive versions already in use.

The early and middle ages actually started from 1100 AD and ended in 1399 AD. These ages began with the invention of stitched books by the Chinese in about 1116 AD. In 1200 AD, the letter system was brought to life. It was used in the European monasteries for communication. At the same time, the University of Paris started a messenger service to transport mail and messages from one place to another. About 50 years later, Koreans started metal type. In 1300 AD, the wooden type was established in Central Asia. At the end of these ages, the Koreans started producing Bronze characters which were found easy and nice to deal with. As we can see that nothing really important was invented during this age except for the ideas concerning printing and the use of metal characters which led to the birth of the typing machine few decades later. The late middle ages started from 1400 AD and ended in 1599 AD. At the beginning of this age, the Europeans started the method of block printing which was first founded by the Chinese. At the same time, few news letters were circulating in the European countries which were very similar to the daily newspapers. In 1455 AD, one of the biggest inventions of all times was created, which is the printing press. Johann Gutenberg (c. 1400-1468) printing press used removable metal letters that could be rearranged to create blocks of text. Before that, people had to pen texts by hand, which was an extremely difficult process.

1. One of most important inventions in human history.

2. Gutenberg’s development of movable type made possible the spread of humanistic literature to rest of Europe with astonishing speed.

3. No longer would copies of works need to be done by hand, individually.

4. 1457-58, published the first printed Bible in the city of Mainz, Germany.

5. Facilitated the phenomenal spread of the reformation.

In 1560 AD, private postal systems grew in Europe. Five years later, the pencil was invented. The middle ages ended with the invention of the pencil. These ages witnessed one of the most important inventions the typing machine. And in these ages, the ideas concerning postal services and mail were used for the first time.