History Of Radio:

This article is about the technology in human history. For the book series, see History of Technology (book series).

For the academic discipline that studies the history of technology, see History of science and technology. For an account of the contemporary use of production techniques, see Technology.

For a historical account of economically important technologies, see Productivity improving technologies (economic history). For other uses, see Technology (disambiguation).

The **history of technology** is the history of the invention of tools and techniques and is one of the categories of world history. Technology can refer to methods ranging from as simple as stone tools to the complex genetic engineering and information technology that has emerged since the 1980s.

The term technology comes from the Greek word techne, meaning art and craft, and the word logos, meaning word and speech. It was first used to describe applied arts, but it is

now used to described advancements and changes which affect the environment around us.[1]

Since much of technology is applied science, technical history is connected to the history of science.

Since technology uses resources, technical history is tightly connected to economic history.

From those resources, technology produces other resources, including *technological artifacts* used in everyday life.

The Roots of Radio:

Scottish physicist James Clerk Maxwell first predicted the existence of radio waves in the 1860s. In 1886,

German physicist Heinrich Rudolph Hertz demonstrated that rapid variations of electric current could be projected into space in the form of radio waves, similar to light waves and heat waves.

In 1866, Mahlon Loomis, an American dentist, successfully demonstrated "wireless telegraphy." Loomis was able to make a meter

connected to a kite cause a meter connected to another nearby kite to move.

This marked the first known instance of wireless aerial communication.

But it was Guglielmo Marconi, an Italian inventor, who proved the feasibility of radio communication.

He sent and received his first radio signal in Italy in 1895. In 1899, he flashed the first wireless signal across the English

Channel, and two years later received the letter "S," which was telegraphed from England to Newfoundland (now part of Canada).

This was the first successful transatlantic radiotelegraph message.

Telvision:

Philo Taylor Farnsworth

The First Electronic **Television** was **Invented** in 1927.

The world's first electronic **television** was created by a 21 year old **inventor** named Philo Taylor Farnsworth.

That **inventor** lived in a house without electricity until he was age 14.

The invention of Television:

The invention of television was the work of many individuals in the late 19th and early 20th centuries.

The first practical transmissions of moving images over a radio system used mechanical rotating perforated disks to scan a scene into a time-varying signal that could be reconstructed at a receiver back into original image. Development of television was interrupted by the Second World War. After the end of the war, all-electronic methods of scanning and displaying images became standard.

Several different standards for addition of color to transmitted images were developed, with different regions using

technically incompatible signal standards. Television broadcasting expanded rapidly after World War II, becoming an important mass medium for advertising, propaganda, and entertainment. [1]

Mechanical Television:

Facsimile transmission systems pioneered methods of mechanically scanning graphics in the early 19th century.

The Scottish inventor Alexander Bain introduced the facsimile machine between 1843 and 1846. The English physicist Frederick Bakewell demonstrated a working laboratory version in 1851.

The first practical facsimile system, developed the Italian priest Giovanni Caselli from 1856 onward.

Telephone:

Alexander Graham Bell was awarded the first U.S. patent for the invention of the telephone in 1876. Elisha Gray, 1876, designed a telephone using a water microphone in Highland Park, Illinois.

Tivadar Puskás proposed the telephone switchboard exchange in 1876.

History of Telephone:

Before the invention of electromagnetic telephones, mechanical acoustic devices existed for transmitting speech and music over a greater distance greater than that of normal direct speech.

The earliest mechanical telephones were based on sound transmission through pipes or other physical media.[1]

The acoustic tin can telephone, or "lovers' phone", has been known for centuries.[1]

with a taut string or wire, which transmits sound by mechanical vibrations from one to the other along the wire (and not by a modulated electric current).

The classic example is the children's toy made by connecting the bottoms of two paper

cups, metal cans, or plastic bottles with tautly held string.

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The **Telephone**: **A Brief History**. During the 1870's, two well known inventors both independently designed devices that could transmit sound along electrical cables.

5GAlexander Graham Bell was awarded the first U.S. patent for the invention of the **telephone** in 1876. Elisha Gray, 1876, designed a **telephone** using a water microphone in Highland Park, Illinois. ...

Thomas Edison invented the carbon microphone which produced a strong **telephone** signal.

Today, we take telephones for granted. You probably have a telephone within arm's reach as you read this. But just over 100 years ago, the idea of instantly chatting to someone anywhere in the world seemed impossible.

You may already know that Alexander Graham Bell invented the telephone in the 1880s. But Bell didn't invent this device out of thin air:

early telephones had started being developed as early as the 1660s.

Yes, these telephones were incredibly primitive compared to Bell's telephone, but they still deserve to be mentioned.

Camera:

The **history of the camera** begins even before the introduction of photography.

Cameras evolved from the camera obscura through many generations of photographic technology – daguerreotypes, calotypes,

dry plates, film – to the modern day with digital cameras and camera phones.

History of Camera:

The forerunner to the photographic camera was the *camera obscura*. Camera obscura (Latin for "dark room") is the natural optical phenomenon that occurs.

when an image of a scene at the other side of a screen (or for instance a wall) is projected through a small hole in that screen and forms an inverted image (left to right and upside down) on a surface opposite to the opening.

The oldest known record of this principle is a description by Han Chinese philosopher Mozi (ca. 470 to ca. 391 BC). Mozi correctly asserted that the camera obscura image is inverted because light travels in straight lines from its source.

In the camera physicist Ibn al-Haytham (Alhazen) wrote very influential books about optics, including experiments with light through a small opening in a darkened room.

Pinhole camera (11th – 17th c.)

Ibn al-Haytham (c. 965–1040 AD), an Arab physicist also known as Alhazen, wrote very influential essays about the camera obscura, including experiments with light through a small opening in a darkened room.

The invention of the camera has been traced back to the work of Ibn al-Haytham,[3] who is credited with the invention of the pinhole camera.[4]

While the effects of a single light passing through a pinhole had been described earlier,[3] Ibn al-Haytham gave the first correct analysis of the camera obscura,[5]

including the first geometrical and quantitative descriptions of the phenomenon,[6] and was the screen in a dark. room so that an image from one side of a hole in the surface could be projected onto a screen on the other side.[7]

He also first understood the relationship between the focal point and the pinhole,[8] and performed early experiments with afterimage.

Ibn al-Haytam's writings on optics became very influential in Europe through Latin translations, inspiring people such as Witelo,

John Peckham, Roger Bacon, Leonardo Da Vinci, René Descartes and Johannes Kepler.[2]

Camera obscuras were used as drawing aids since at least circa 1550. Since the late 17th century, portable camera obscura devices in tents and boxes were used as drawing aids.

Before the development of the photographic camera, it had been known for hundreds of years that some substances, such as silver salts, darkened

when exposed to sunlight.[9]:4 In a series of experiments, published in 1727,

the German scientist Johann Heinrich Schulze demonstrated that the darkening of the salts. was due to light alone, and not influenced by heat or exposure to air.[10]:7

The Swedish chemist Carl Wilhelm Scheele showed in 1777 that silver chloride was especially susceptible to darkening from light exposure,

and that once darkened, it becomes insoluble in an ammonia solution.[10]

The first person to use this chemistry to create images was Thomas Wedgwood.[9]

To create images, Wedgwood placed items, such as leaves and insect wings, on ceramic pots coated with silver nitrate, and exposed the set-up to light.

These images weren't permanent, however, as Wedgwood didn't employ a fixing mechanism.

He ultimately failed at his goal of using the process to create fixed images created by a camera obscura.[10]:8

Laser:

A device that generates an intense beam of coherent monochromatic light (or other electromagnetic radiation) by stimulated emission of photons from excited atoms or molecules.

Lasers are used in drilling and cutting, alignment and guidance, and in surgery; the optical properties are exploited in holography, reading barcodes, and in recording and playing compact discs.

History of Laser:

The principle of the laser was recognized in 1917, when physicist Albert Einstein described the theory of "stimulated emission."

However, it was not until the late 1940s that engineers began to use this principle for practical purposes.

At that time, physicists like Charles Townes were looking for ways to improve a class of radar-related vacuum tubes.

Townes proposed constructing a powerful new amplifier by passing a beam of electromagnetic waves through a special cavity containing molecules of a gas. The beam stimulated the atoms in the gas to release their energy exactly in step (or as engineers say, in phase) with the waves of the beam.

That energy then exited the cavity

As a much more powerful beam. Thus, a small amount of energy supplied to the cavity resulted in a huge power output, and therefore the device was a new kind of amplifier.

Laser is the device of camera and telephone.

Townes called his device the MASER, which stood for Microwave Amplification by the Stimulated Emission of Radiation.

Within a short time, the MASER was in use as an amplifier in microwave communication systems. But Townes and other engineers also believed that by using higher-frequency energy,

they could create an optical maser, a device for generating powerful beams of light (light consists of electromagnetic waves of a higher frequency than microwaves).

Gordon Gould, Townes and his colleague Arthur Schawlow, and two physicists from the Soviet Union all proposed such a device, but it remained for Theodore Maiman,

who used a ruby rod, to construct the first LASER (Light Amplification by the Stimulated Emission of Radiation).

The LASER was a remarkable technical breakthrough, but in its early years it was something of a technology without a purpose.

It was not powerful enough for use in the beam weapons envisioned by the military, and its usefulness for transmitting information through the atmosphere was severely hampered by its inability to penetrate clouds and rain.

Soon, though, some began to find uses for it. Maiman and his colleagues developed some of the first LASER weapon sighting systems, and other engineers developed powerful lasers for use in surgery and other areas where a moderately powerful, pinpoint source of heat was needed.

Today, for example, LASERS are used in corrective eye surgery, providing a precise source of heat for cutting and cauterizing tissue.

Lasers are classified into 4 types based on the type of laser medium used:

1. **solid stat laser**
2. **Gas laser**
3. **Liquid laser**
4. Semiconditor laser

Microscope:

AN optical instrument used for viewing very small objects, such as mineral samples or animal or plant cells, typically magnified several hundred times.

History of Microscope:

Grinding glass to use for spectacles and magnifying glasses was commonplace during the 13th century.

In the late 16th century several Dutch lens makers designed devices that magnified objects,

but in 1609 Galileo Galilei perfected the first device known as a microscope.

Dutch spectacle makers Zaccharias Janssen and Hans.

Lipperhey are noted as the first men to develop the concept of the compound microscope.

Types of Microscope:

The 11 Types of Microscopes:

1. **1)Light Microscope**
2. **2)compound Microscope**

3) Stereoscopic **Microscope**
4) Confocal **Microscopes**
5) Electron Microscope
6) Scanning Electron **Microscopes** (SEM)
7) Transmission Electron **Microscopes** (TEM)
8) Reflection Electron **Microscopes** (REM