

Technology, environment and society

[Technology](#)



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Environment is defined as the immediate surroundings which supports life and sustains various human activities. The surroundings comprises of Blotto or living things: plants, animals, microorganisms Blotch or non-living things: land, water, alarm etc. Society Society is people living together In communities. Chapter 1 . Brief History of Technology Beginnings (from beginning to BBC) universe: Evolution theory: Big bang theory, 10 to 20 billion years ago Earth and life: some facts Third planet that orbit the sun Formed from cloud of dust and gas drifting through space about 4. 6 billion years ago.

First primitive life: algae and bacteria appeared around 3. 4 billion years ago. Human being Separation of human lineage from primates: about 2 million years ago. Modern human (homeostasis) appeared in Africa around 100, 000 years ago. Beginning of human civilization: about 5000 years ago Stone Age Age prior to the beginning of civilized society (up to BBC) Tools: stone, wood, animal bone, horn No use of metal tools Potter's wheel (around BBC) Nomadic culture: Humans moved from one place to another place searching for the foods At the end, more settled 1. 1 Civilizations between BBC to 1660 AD .

First civilizations (3000 BC to 1100 SC) Bronze Age Copper: First discovered metal Bronze (Mixture of Cue and Tin): Second discovered metal Sequences By BBC, quasi-civilized society in Egypt and Mesopotamia Around 3000 BC: human civilization began. Civilizations a. Egyptian civilization: in the valley of Nile b. Sumerian civilization: in plain of Tigris and Euphrates in Southern Mesopotamia c. Assyrian civilization: in upper Tigris d. Maya civilization: in

Peru e. Civilizations in China f. Civilizations in India: Flourishing of Hindu religion in India, Veda and Banished g.

First Babylonian empire Semitic (dark white or brownish people from Syria and Arabia) people conquered Sumerian by BBC, made Babylon the capital Hamburg: 6th king of Babylonian, made code of laws, which is first written code of laws h. Jews (Hebrews) Semitic people settled in Judea long before 1000 B. C. Prophets of Jews: Abraham, Moses Solomon: king of Hebrew Monarchy, builder of the first temple in Jerusalem I. Spreading of Aryans Tribes of fair and blue eyed Nordic race Spread from central Europe to Asia Inventions/ Developments during Bronze age Discovery of bronze, Metal working, Glass working

Invention of Potato in Peru Animal domestication: cattle, sheep, goats and asses Cultivation Navigation technology Techniques of Yoga and meditation Invention of first writing system (wage-shaped) by Sumerians Invention of picture writing system by Egyptians Invention of Semitic writing system by Hebrews by mixing Sumerian and Egyptian writing All other major languages, e. G. Sanskrit, Latin, Greek, French, Arabic etc. Derived from Semitic Construction of cities, temples, tombs, systematic irrigation, war chariots b. Iron Age (1100 SC to 500 AD) First use of iron for implements and weapons.

Historical sequences in Iron Age a. Augusta Buddha (nearly 550 BC) b. Confucius and Ala TTS in China (around 6th century BC) c. Emperor Osaka in India: spread Buddhism to Kashmir, Persia, Ceylon, China and Alexandria (capital of Roman empire) d. Jesus Christ e. Victory of Aryan: from 900 to 600

BC over the whole ancient world: Semitic, Egyptian, Greek, India except China f. Greek civilization Greek people: trades, travelers, enthusiastic Greek Philosophers Thales, Pythagoras, Socrates, Plato, Aristotle, Ptolemy, Euclid, Archimedes Plato, Aristotle: most prominent Plato (400 SC): Mathematics and Astronomy

Plato published a book named Utopia which deals with the plan to form a different and better than the existing one. Utopian society defines the process of development in three steps: plan, public, and law. Aristotle (BBC) Gathering information, analyzing and solving the problem in a systematic way (beginner of science). Father of history and founder of political science g. Roman civilization Autocratic Roman empire in Europe (from 200 BC) No scientific development h. Spreading of Mongolia's all over the world by two century BC. Inventions/technological development during iron age

Prosperous China: Construction of great wall, invention of paper, tea, wood block printing Development of Iron technology Literature: around 200 BC c. The middle ages (500 to 1450) Sequences of middle age a. Prophet Muhammad (DADA) Dictated a book, Koran, which he declared was communicated to him from God Beginning of Islam religion b. Arab's supremacy Powerful Arabian empire: Arabians were Masters, Europeans pupils Stretched from Spain to China Learnt paper and printing from China Came in touch with Indian Mathematics Translated Greek literature c. Mongolia's conquest

Jennings Khan (1200 AD): conquered China, Transmitted, Persia, Armenia, part of India down to Lahore, South Russia and Hungary Tioga Khan:

completed the conquest of whole China and all Russia (former Soviet Union)
Other emperors: Managua Khan, Kabuki Khan, Hula Khan d. Mogul dynasty in
India (Mongolia: Mogul in Urdu) Baber: Descendent of Mongolia, conquest
India Kafka: completed the conquest of whole India f. Renaissance of Europe:
Intellectual revival From 1200 AD: revival of European intelligence
Commercial and industrial activities boomed in northern and central Italian
cities (1250) Development of cities

Growth in trading Arabian literature and scientific experiments translated
into common language Roger Bacon: father of modern experimental science,
deserves prominence in our history second to that of Aristotle University at
Paris, Oxford, Bologna and other cities Exploration: Marco Polo, Columbus,
Vases De Gamma By 1500 AD, Europeans became intellectual and material
leader Inventions/Developments in middle age a. From Arab world Great
advances in Math, Physics, Chemistry and Medical science Spreading of
Arabic figure invented by Hindus, sign zero invented by Arabs Metallurgical
and technical devices made by Arabs .

From Mongolia Opening of silk road by Mongolia's to link Asia and Europe for
trade c. From Good quality paper and printing Advance in education and
science Mariner's compass d. Towards the modern world (1450 to 1660) a.
Period of growth for scientific knowledge Birth of many scientists: Leonardo
Dad Vinci, Galileo, Keeper, Blaine Pascal, Robert Hooked, Newton: Influenced
the world of science b. Age of mechanical revolution Process of mechanical
invention and discovery Technological development due to organized
science Mechanical power and the machine doing the labor work of human
and animals c.

Advance in popular education throughout the Westernized world

Inventions/Developments Invention of saw mill, microscope, telescope, clocks 1. 2 The Industrial revolution, early days (1660 to 1815) The mechanical revolution was followed by the industrial revolution. Age of social and financial development Scientific discoveries, application of science and technology Began from England around sixties of seventeenth century after the invention of steam engine by James Watt Mass production, factory system and improved machinery and machine tool Further advancement due to the invention of electric power

By the early 19th century, industrial revolution spread to other parts of Europe Frederica Startled founded a pencil factory in Murrhardt, Germany. Startled Mars Gumbo & Co. The oldest manufacturing companies in the world. Many books on industrial development water-powered mill Processing of iron from ore using blast furnace technique in 18th century Rolled iron sheet in 1728 and rolled rods and bars in 1783. First modern steam engine by James Watt (1765) Use of steam power: cotton factory, boat, ship First locomotive by Trevithick in 1804 Electricity: Investigation of Franklin, Volta, Faraday and Galvanic Chemistry advanced

American System of Manufacturing (1813) 1. 3 The Industrial revolution in maturity (1815 to 1918) a. By early 19th century, science has come to be revolutionized. Prominent scientists e. G. Alfred Nobel, Faraday, Graham Bell, Charles Darwin, Albert Einstein b. Age of engineering: Technological development Electric motor by Faraday (1821) First railway between Stockton and Darlington in 1825 Discovery of electric telegraph in 1835, first

under seas cable laid in 1851 between France and England Analytical engine by Charles Babbage (1834), father of computer Steam hammer (1838)

Bessemer process (1856) and open hearth process (1864) for processing of iron and steel Telephone by Alexander Graham Bell (1876) Steam turbine (1884) Petrol car by Carl Benz (1888) Internal combustion diesel engine by Rudolph Diesel (1893) Wireless telegraphy by Marion (1896) Medical science and agricultural science advanced In 1903 testing of the first air craft by Wright brothers in the USA, availability of airplane for humans from 1909 Book on scientific management by Taylor in 1911 Moving-assembly-line techniques for car manufacturing by Ford (1913) Project management techniques (Giant Chart -1917)

Impact of industrial revolution Mechanization: Change of power source from muscle power and animal power to steam engine which was more economical, easier to handle and efficient than previous sources. Social, cultural and economical change Revolution in transport and communication Easier and more comfortable life, better health condition Advance in education, science, medicine, textile and agriculture Relocation of large portions of the population from the countryside to the towns and cities Growth in trade and business Availability of great variety of materials Rise of wealthy people

Especially businessman became richer, while workers also got good wages. Start of automation replacing human operations Negative points: break up of Joint family, women and child labor, gap between poor and rich Material growth and subsequent colonization Demand of raw materials and nationalist

pride led colonization to produce and trade goods Dutch, Portuguese (Brazil), Spanish (North and South America), French, England Conflict and internal strife in colonized countries Extraction of vast amounts of natural resources from the colonies by British Empire 1. Influence of First and Second World wars on technology World War I (WWI) (1914-1918) Main Causes Beginning: Beginning of war after the assassination of Ferdinand, heir to the Austro-Hungarian throne, by a Bosnian Serb citizen of Austria-Hungary. The retaliation by Austria-Hungary against Serbia activated a series of alliances that set off a chain reaction of war declarations. Within a month, much of Europe was in a state of open warfare.

Alliance of France, UK, Russia, Italy, US Alliance of Germany, Austria-Hungary Continuing French resentment over the loss of territory to Germany in the 19th century The growing economic and military competition between Britain and Germany German desire to become more established countries of Europe. End of war: The war was ended by several treaties, most notably the Treaty of Versailles, signed on 28 June 1919.

Technical inventions during WWI Chemical advancement: high explosive, poison gases, fixing of atmospheric nitrogen Telephone, wireless communication, armored cars, tanks Development of ship and aircraft, military weapons Automatic rifle Impact of World War I on technology Development of the mechanical equipment and scientific development of weapons accelerated Between two wars (1918 to 1939) The construction and developments were done throughout the world.

Inventions of radar (1922), talking film (1922), helicopter (1924), Electronic TV (1927), Jet Engine (1937) The second world war (1939 to 1945) Causes a. Hitler's Aims to dominate Europe and the World b. The aggression of Hitler's Allies: Italy and Japan c. Democratic (USA, Britain and France) powers were passive d. The League of Nations failed to keep peace Involved a majority of the world's nations, including all of the great powers organized into two opposing military alliances: the Allies and the Axis Axis: Germany, Japan, Italy

Allies: I-J, France, Poland, Russia, China, USA etc. Starting with the German invasion of Poland in 1939 and subsequent declarations of war on Germany by the United Kingdom, France and the British Dominions Ended with Allies victory in 1945 Inventions/ Technical developments Development of military weapons Jet plane, Crawlers plane, Modern rockets, Helicopters Advance in tank design Advance in communication Airplanes used to carry bombs. Development of nuclear weapons Development of artificial harbors Oil pipelines under the English Channel.

Acquaintance of atomic energy The modern era of automatic digital computer began during world war II 1939 to 1944: first automatic digital computer Impact New technological developments in speed and arms advanced. Emergence of the Soviet Union and the United States as the superpowers. Creation of the United Nations Decentralization movement Integration of western Europe Beginning of computer age Negative impacts of world wars Loss of life: Great human disaster Destruction of property Air, water and soil pollution Spreading of disease 1. Information age (1945 to present) Post industrial era: information age Liberation of colonized countries <https://assignbuster.com/technology-environment-and-society/>

aftermath of war Development of computer technology (modern computer in 1950) Introduction of era of global satellite communication 1957: start of globalization of information revolution after Sputnik launched by Russians Human beings in space (1961) Human being on moon (1969) Space shuttle (1981) Optical fiber Laser Exploration of space using manned/unmanned satellite Supercomputer (1976) and Laptop computer (1989) Robot: most vivid example in technological history Internet: vast sources of information Chapter 2.

The technological society 2. 1 The machine age Era of invention and machine-based change in society that began with the Industrial Revolution Most important development of machine age Fossil fuels such as coal as sources of energy Improvement of metallurgical processes (especially of steel and aluminum) Development of electricity and electronics Invention of the internal-combustion engine Use of metal and cement in construction work 2. The steam locomotive and its impact on transportation Easier and more comfortable life Cultural diffusion and social transfusion Growth of trade and business 2. 3 The telephone and telegram and their impact on telecommunication Ease in conversations, conducting business, getting help in an emergency Upgrading f the social value, bridge for the social transformation Acceleration of economic growth Impact on cultural, religion and education Saving time and money for the flow of information Increased efficiency and effectiveness of the works 2. The automobile and its impact on mobility Creation of Job for millions and increase in the mobility of people Increment of economic activities Fast, luxurious and efficient life Noise and air pollution, causalities Development of computer First fully electronic

computer (using vacuum tubes) in 1946 Storing program in 1946

Development of Germanium transistor in 1947

Development of modern computer with the invention of Integrated Circuit (C) in 1950 by Jack Kilby at Texas Instruments After the invention of silicon chips, drastic change on other electronic equipments The fast development of silicon chips predicts the maturity of information era 2. 6 The computer and its impact Revolution in analysis, computation and communication, and start of information age Environmental quality control Medical diagnosis Program planning: urban planning, population studies, land use change, highway planning Increased access to the Jobs Creation of new Job opportunities

Automation decreasing the labor intensiveness Rise of information industries Creation of high standard of living Increased production Negative impact on individuality, privacy Crime (money/information/service theft, virus, program copying, hardware/software damage etc.): threat to society 2. 7 Information society Post industrial society in which most of the people are involved in the business of information Transformation from industrial society to information society After discovery of modern computer: main tool for information society Computer technology is to information age what mechanization was to the industrial revolution.

In computer age, we are dealing with the conceptual space connected by electronics rather than physical space connected by motor car Combined technology of telephone, computer and television have merged into an information and communication system Information economy.