

# Definition of technology

- The economist John Kenneth defined technology as the systematic application of scientific or other knowledge to practical tasks.
- Any systemized practical knowledge based on experimentation and /or scientific theory which enhances the capacity of society to produce goods and services and which is embodied in productive skills, organization and machinery. (Gendron)



# Introduction to technology

- The application of scientific or other knowledge to practical tasks by ordered systems that involve people and organizations, living things and machines. (Pacey)



# Definitions of technology

The three definitions of technology are:

- Technology as hardware
- Technology as rules
- Technology as systems

# Definitions of technology

## Technology as hardware

- Technology is the use of tools and machines . This can be seen in a brochure or flier on technology that shows rocket, computers, factories and power plants.
- The problem with this definition is that there may be a non-hardware technology such as Behavioral technology of the psychologist B.F.Skinner (1904-90)



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## Technology as rules

- This concept explains technology as rules rather than tools.
- The same relationship can be seen between a hardware and a software.
- The sociologist Max Weber (1864-1920) emphasizes on rationalization when highlighting the rise of the West in terms of rule-governed systems whether in science, law or bureaucracy.
- So the technology may not be the physical tools but patterns systematically developed.

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## Technology as system

- It is not clear that hardware not in human use and understanding functions as technology. Some examples are:
  - 1- An airplane crashed or abandoned resting in a rain forest will not function as technology. It is treated as religious objects by members of a cargo cult in the Pacific. The cargo cults arose when US planes during Second World War dropped huge amounts of goods on Pacific islands and cults awaited the return of the big “birds”(planes).



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- 2- The Shah of Iran attempted to modernize the country in 1960's . He used the oil wealth to import jet planes and computers but lacked sufficient number of skilled personnel . It is said that the airplanes and main frame computers sat outside and accumulated sand, dust and rust when no warehouse was provided for storage. There was no staff to operate or repair these machines so the machinery did not function as technology.

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Technology as applied science

- Many scientific inventions are products of chance because these were not pre-planned .
- Many chemical discoveries are the results of accidents.
- Safety glass was discovered when chemical solution was spilled on a piece of glass which accidentally dropped and did not break.



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- Paper chromatography was discovered when a scientist accidentally spilled some chemical on a filter paper and the chemical separated into two components as it seeped up the paper.

# Introduction to technology

- Technology is the state power to both developing and developed countries.
- Technology is a strategic tool in achieving economic targets and in the creation of wealth and prosperity in the developing countries, while technology is taken as an instrument to get large profits in the developed countries.
- According to Megantz, developing and implementing effective licensing programs that technology is wonderful, amazing, always changing bags of tricks





# Introduction to technology

that helps human beings to live healthier, happier and more fulfilling lives.

- To a scientist, technology is the end product of one's research.
- To an engineer, technology is the tool or process that can be employed to build better products or solve technical problems.
- To an attorney, technology is intellectual property to be protected and guarded.

# Introduction to technology

- To a business executive, technology may be the most important yet least understood, company asset.
- Technology is viewed as competitive advantage against rivals.
- In other words, technology has to create things that benefit human beings.
- Miles defines technology as the means by which we apply our understanding of the natural world to the solution of practical problems.



# Introduction to technology

- The UN Conference on Trade and Development (UNCTAD) has provided the following definition.
- Technology is bought and sold as capital goods including machinery and productive systems, human labour usually skilled manpower , management and specialized scientists.
- Information of both technical and commercial character, including that which is readily available, and that subject to proprietary rights and restrictions.

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- Rosenberg and Frischtak pointed out that specificity of technology as close links with nature of the inputs to its production and of the resulting outputs.
- In most advanced countries, at least 60% of research and development expenditures are on development.
- It is the expenditure to develop new products and processes.