



Foundations of Technology

Society Shapes Technology



You will learn...



“The Science of today is the technology of tomorrow.”

-Edward Teller

Outcomes:

- Different cultures develop their own technologies, (ITEA 6-H)
- The decision whether to develop a technology is influenced by societal opinions and demands, in addition to corporate cultures, and (ITEA 6-I)
- A number of different factors, such as advertising, the strength of the economy, the goals of a company, and the latest fads contribute to shaping the design of and demand for various technologies. (ITEA 6-J)

Cultures Develop Their Own Technologies

Different cultures develop their own technologies to satisfy their individual and shared needs, wants, and values.

Technology is connected with and influenced by all of society's institutions, including economic, family, political, and educational.

American transportation systems are closely linked to freedom and independence, whereas other cultures might place more value on the speed and convenience associated with mass transportation systems. In America, our lack of mass transit is also related to corporate influence. Automobile and oil companies have worked to insure that mass transit is not an option that conflicts with corporate profits. This may be one reason we do not have the high speed trains that are common in other countries.

High Speed Mass Transit





Cultures Determine Use and Consequence

The individual circumstances of any people will determine what technologies they need and which ones they will develop. The culture will dictate how technologies are used and therefore what the consequences will be.

For example, the United States is the top consumer of fossil fuels in the world. One reason is widespread use of cars which is possible by low car and fuel prices compared to other cultures.

The United States is a car culture; the carbon dioxide emissions of the United States averages twenty metric tons per capita. The United States is contributing to global warming.

In other countries, people do not drive a lot because they cannot afford cars or fuel, or there are not enough roads, or there are adequate and affordable methods of public transportation.

Technological Decisions

The decision whether to develop a technology is influenced by social opinions and demands, in addition to corporate cultures.

The technological expertise to develop a particular product or system may be available, but if the public reaction to such development is in opposition, or if a corporation refuses to adjust to new and complex ideas, the development is most often limited or stopped. This may explain our slow pace to solar and wind power or hydrogen fuel cell cars.

A number of different factors, such as advertising, the strength of the economy, the goals of a company, and the latest fads contribute to the design of and demand for various technologies among different cultures.

Sometimes these forces are consistent with one another. At other times, they may compete. The general public may or may not be aware of the influences that shape technology or how technological development will impact the environment.



The Economy



Advertising



Latest Fads

Cultures Develop Their Own Technologies

Social and cultural priorities and values are reflected in technological devices. For example, an unenthusiastic attitude toward the use of genetically engineered foods has affected the use of this technology, yet many seed-producing companies are pressed to develop insect and disease resistant plants.

Likewise, consumer tastes influence technological design, such as color and style.

Cell Phones



Economic, Cultural, Political, and Environmental Concerns

Whether or not a technology is accepted by society depends, first, on whether it does its job and, second, on how well it fits in with various economic, political, cultural, and environmental concerns.

With little regard to underlying technology, people expect buildings to provide shelter, bridges to span water, and dams to provide power and recreation.

These societal institutions have a powerful influence on how people live, work, play, and learn. The influence of society on technology directly affects the development of a product or system.



Buildings for Shelter



Bridges



Dams Provide Power

Personal Decisions/Public Opinion

You live in a technologically complex world and decisions you will be asked to make in your life can be affected by your own understanding of technology. The more opportunities you have to practice your technological thinking and decision making, the better prepared you will be to make decisions regarding outcomes of a product or system.

Just because a product or system can be developed does not mean that it should be — acceptance or rejection by society often determines its success or failure. If companies do not consider public opinion, their products or systems can be doomed for failure, which can lead to significant financial losses. Advertising is an important tool used to help influence public opinion.

Examples of inventions and innovations with limited success based on poor public opinion include the Edsel, named for Henry's Ford son, considered a poorly designed automobile. After the Hindenburg disaster, production of the dirigible (blimp), a large hydrogen-filled balloon, was halted.

The Edsel



The Hindenburg



Cross Cultural Sharing

Cross cultural sharing of technologies can lead to unexpected results. If a technology comes from within a culture, it is more suitable for that culture than a foreign innovation.

For example, when the Inuit people in the arctic region started using guns to hunt seals, the seals quickly died out. This culture could not foresee the long term implications of this new technology — the gun.

Like most cultures who invent a technology, Americans are concerned with an immediate need and have the mindset that a particular technology will serve them a long time; as a result, the long term ramifications of new technologies may be overlooked until they become an immovable part of the culture.

For example, how would you feel if cell phones were no longer part of mainstream American culture? Could you go a day, a week, or a longer period of time without your cell? I doubt it, because it is an immovable part of your culture.

Ultimately any new technology becomes a part of people's lifestyle and both this technology and its corresponding lifestyle become a permanent part of a culture.



Summary

- Different cultures develop their own technologies to satisfy their individual and shared needs, wants, and values.
- Social and cultural priorities and values are reflected in technological devices.
- Public opinion and demands directly affect the market-place with respect to products and systems.
- Technology does not exist in a vacuum. It develops to fulfill cultural needs.
- Technology and its corresponding lifestyle becomes a permanent part of a culture.

This has been a presentation on...



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