

Chapter 1

The Nature of Technology

Short Answers

1. Define technology. What are some of the limitations of this definition? pp. 7
2. The word “technology” comes from the ancient Indo-European word techne. Explain the evolution of this word from its Greek roots to its first modern usage. p. 4
3. For the incandescent light bulb to be a commercial success, there had to be a complementary structure to support it. What were the key elements of that system that Thomas Edison created? p. 6
4. How does the history of the pen exemplify some key aspects of technological change? Explain the transition from the organic to the industrial and how it represents overall technological change. p. 6
5. What is a sigmoid curve? How is the curve relevant to the course of technological change? p. 9
6. Give an example of a technology that seems to embody progress. According to what standards may it be deemed progressive? p. 11
7. Give an example of a technology where its contribution to overall progress is ambivalent at best. p. 11
8. What in a technical sense is meant by “feedback”? Note a particular technology that makes use of the feedback principle. pp. 11-12
9. What is meant by rationality? How is it connected to the development of technology? How does it relate to the way Max Weber used the word “disenchantment”? p. 15
10. What is meant by technological determinism? What is meant by social constructivism? Why is neither completely adequate to describe the nature of technology? p. 16

Essay Questions

1. Reliance on today’s advanced technologies has been criticized as being “unnatural.” Is this a fair criticism? Why or why not? p. 4
2. Why is organization an essential complement of technology? Give an example of a complementary relationship of organization and technology. p. 5
3. How does the history of high-speed aircraft illustrate the process through which new technologies emerge? p. 6