Technology and social engineering

Technology and Social Engineering School/ Whether Technology will Always Find a Solution to Human Problems Technologyis the core aspect of development. It is the technical means of applying tools and systems to improve the surroundings for easier and better living. Technology also helps to control the natural and man-made worlds, and creates new physical and human environments. There has been development in technical expertise, skills and tools since the Stone Age when primitive man developed tools necessary to live, and to protect himself from enemies. However, the development of technology is marked from the time of the Iron Age, when iron replaced bronze for producing implements and weapons. The Roman empire in the ancient world built the highly sophisticated waterway system known as large aqueducts that carried water for hundreds of miles, introduced advanced sewer systems, invented durable cement, and constructed concrete structures. Other human problems related to improved communication, transportation, information transmission, mechanization, medicine, etc have been solved with the help of technology in the last two centuries through various inventions (Gupta, 2007).

Technological innovations are related to philosophy's aspects of values and ethics. Thus, planned and controlled technologies though regulated by laws are the worst offenders in creating environmental degradation. " A close survey of global problems indicates that neither science nor technology alone has the answer" (Gupta, 2007, p. 383) to solve some major human problems. An example is that technology cannot create a species which has become extinct due to the decline in biodiversity. The main crises include destructive organizational, political and technological patterns; the breakdown in the human environment, the depletion of non-renewable

resources such as fossil fuel, and other problems. Therefore, human behavior has to be improved, and relevant courts and controls should be applied to maintain checks and balances on the development of new technology and in its implementation (Chorafas, 2011).

Whether Technology Fixes can be Used to Replace Social Engineering

Social engineering is the organizing and " channelling of environmental and social forces to create a high probability that effective social action will occur" (Podgorecki, Alexander & Shields, 1996, p. 1). It denotes the development of processes in which human beings serve as raw materials. In the twentieth century, grand plans of social engineering projects have proved to be costly and failures, as seen in the utopian experiments using violent measures to break the will of the people. On a smaller scale are interventions for improved national interest, social order and morality. The reason for failure is that human beings as the material used are resistant, and cannot be compelled to comply with the designer's purpose (Podgorecki et al, 1996).

An example for using technology fixes instead of social engineering, is in resolving a water shortage situation. The social engineers would attempt to change people's attitude and behavior of using water wastefully or stealing water from other sources. On the other hand, the use of technology would aim at providing more water at a lower cost. " The technological fix for water is based on the availability of extremely cheap energy from very large nuclear reactors" (Weinberg, 2003, p. 110). Other beneficial social consequences emerging from extremely low cost energy is its eventual availability to every country irrespective of the latter's resources. Additionally, hydrogen will be produced from the electrolysis of water,

resulting from the low cost nuclear energy, thereby producing ammonia fertilizer vital for feeding the world's hungry. Further, metals will be reduced without using coal as fuel, automobiles will be powered by electricity, through fuel cells or storage batteries, thus reducing air pollution and dependence on crude oil. The cheap energy would lead to an energy self-sufficiency across the globe, and this will give rise to self-sufficiency in several basic human requirements. Therefore, it is concluded that technology fixes can beneficially replace social engineering.

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