

ACHIEVING SUSTAINABILITY THROUGH VALUE ENGINEERING A COST-BENEFIT ANALYSIS

*Saeed Mohaghegh, Department of Business Studies, Assumption College, 500 Salisbury Street,
Worcester, MA 01609, 508-767-7462, smohaghe@assumption.edu*

ABSTRACT

Sustainability is a feature of processes that are satisfying humanity's desires without hurting future generations. It includes financial, environmental, and social responsibilities. Financial responsibility is a component of sustainability that addresses the financial needs of the firm's stakeholders. Environmental responsibility is an element of sustainability that addresses the ecological stability of the planet and the organization's stewardship of the natural resources used in the production of goods and services. Social responsibility is a component of sustainability that addresses the moral, ethical, and humanitarian expectations that society has of a firm. Sustainability is often viewed as a divergence from an outdated business perspective in which management decisions are driven predominantly by the desire to increase profits whereas social and environmental concerns are abandoned. A preliminary review of data and literature by the author has revealed that sustainability can be achieved through value engineering efforts-designing products that not only improve the efficiency of the firm and improve its bottom line, but help the society and the environment as well.

Value engineering reduces design complexity and negative environmental impact, improves functionality and serviceability of goods and services, and provides a robust design which results in lower cost and higher quality products. Conservation and renewal of resources through the entire product life cycle is an important goal. It is possible to enhance productivity and quality and deliver goods and services in an environmentally and ethically responsible manner. Although sustainability initiatives can be implemented during design, production, distribution, and destruction of products, this paper focuses on the achievement of sustainability during the design stage. The ethical decision in design of goods and services is to develop sound and safe products and processes by using appropriate business practices. This will in turn help to minimize waste of resources, reduce environmental liabilities, and increase cost-effectiveness of complying with environmental regulations.

In this paper, the author emphasizes the key role that value engineering plays in design and production of products that are environmentally friendly, socially desirable, and economically advantageous. A cost-benefit analysis will show how value engineering efforts in a few select corporations have helped them to achieve a sustainable business and be recognized as good corporate citizens. The sustainability strategies, their implementation, and evaluation as well as the future of sustainability will also be discussed in this paper.