MULTIPLE and potentially CONFLICTING
DESIGN CONSIDERATIONS

MANUFACTURABILITY

ENVIRONMENTAL
SUSTAINABILITY

ENVIRONMENTAL

PERFORMANCE

POLITICAL

SERVICEABILITY

ETHICAL

HEALTH AND
SAFETY

SOCIAL

ECONOMIC

PRODUCT
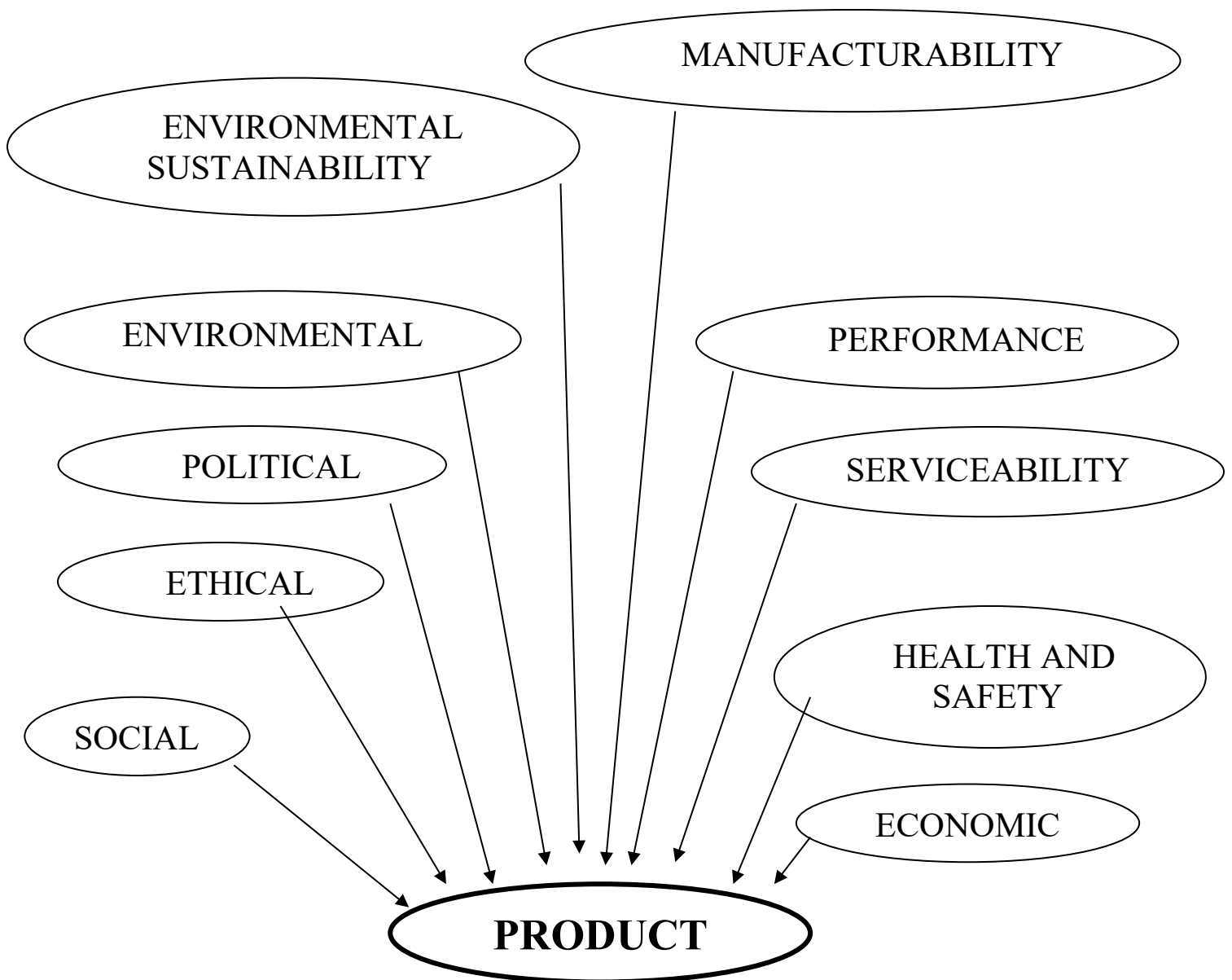
The following should be considered when developing design criteria and throughout the design process:

- **Performance** – How is the design to function? What need is it filling? What does it have to do? Is it reliable?
- **Serviceability** – Is maintenance or repair a concern? If so, can it be easily performed?
- **Economic** – Are the production and user-costs considered?
- **Environmental** – consider "cradle to grave" impact: environmental impact with the materials selected and manufacturing processes used; using the product should have a neutral or positive impact on the environment; after its useful life, will it be readily recycled or repurposed?
- **Environmental Sustainability** – *(Sustainability refers to the practice of having minimal impact on the environment. Completely sustainable practices do not deplete or degrade the environment.)* Should the design consider recycling, and using sustainable materials and manufacturing methods? Should renewable energy sources be used (such as solar)? Does the product promote sustainable practices?
- **Manufacturability** – Can the design be economically produced? Can critical elements be inspected?
- **Ethical** – Does the design contribute to the greater good? Have appropriate standards been applied? Are the design documents accurate with claims not overstated?
- **Health and safety** – Have appropriate codes and standards been applied to prevent harm? Does the design mitigate harmful effects of failure to prevent injury? Does the design directly improve the health and safety of users?
- **Social** – Does it benefit society? Are there societal implications of the product?
- **Political** – Are there political implications of the project? What materials or parts would need to be imported? Would this be exported or imported?