

Production design

[Design](#)



Standardization Extent to which there is an absence of variety in a product, service or process. Advantages of Standardization * Fewer parts to deal with in inventory & manufacturing * Less costly to fill orders from inventory Reduced training costs and time * More routine purchasing, handling, and inspection procedures * Opportunities for long production runs, automation * Need for fewer parts justify increased expenditures on perfecting designs and improving quality control procedures. Disadvantages of Standardization * Decreased variety results in less consumer appeal.

Designs may be frozen with too many imperfections remaining. * High cost of design changes increases resistance to improvements * Who likes optimal keyboards? Standard systems are more vulnerable to failure Epidemics: People with non-standard immune system stop the plagues. Computer security: Computers with non-standard software stop the dissemination of viruses. Design for: a) Manufacturing Design for Manufacturing (UDF) and design for assembly (DEAF) are the integration of product design and process planning into one common activity.

The goal is to design product that is easily and economically manufactured. The importance of designing for manufacturing is underlined by the fact that about 70% of manufacturing costs of a product (cost of materials, processing, and assembly) are determined by design decisions, with production decisions (such as process planning or machine tool selection) responsible for only 20%. The heart of any design for manufacturing system is a group of design principles or guidelines that are structured to help the designer reduce the cost and difficulty of manufacturing an item.

The following is a listing of these rules: 2. Reduce the total number of parts. 3. Develop a modular design. 4. Use of standard components. 5. Design parts to be multi-functional. 6. Design parts for multi-use. 7. Design for ease of fabrication. 9. Minimize assembly directions. 10. Maximize compliance. 11. Minimize handling. B.) Disassembly Design for Disassembly is a design strategy that considers the future need to disassemble a product for repair, refurbish or recycle. Will a product need to be repaired? Which parts will need replacement?