

Concept Development Phase

System-Level Design Phase

Detail Design Phase

Testing & Refinement Phase

Production Ramp-Up Phase

Marketing

Define market.
Identify lead sources.
Identify competitive products.
Perform secondary market research.

Perform primary market research.
Develop plan for product options and extended product family.



Analyze market research.
Develop marketing plan.
Preliminary price points.



Advertising and promotion strategies.
Facilitate field testing and refine price points.



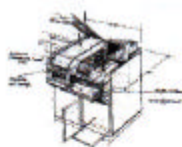
Place early production with key customers.

Design

Investigate feasibility of product concepts.
Develop industrial design concepts.
Build and test experimental prototypes.



Generate alternative product architectures.
Define major subsystems and interfaces.
Refine industrial design.



Define part geometry.
Choose materials.
Assign tolerances.
Complete industrial design control documentation.



Perform reliability, life, and performance testing.
Obtain regulatory approvals.
Implement design changes.

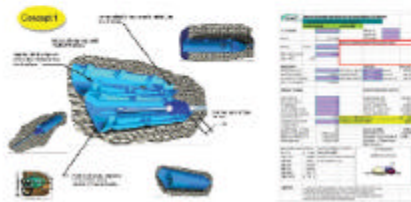


Evaluate early production output.

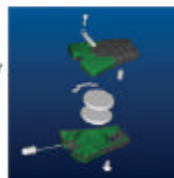


Manufacturing

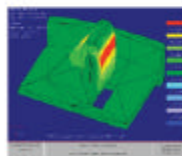
Perform manufacturing cost estimates.



Identify suppliers for key components.
Perform make-buy analysis.
Define final assembly scheme.



Define piece-part production processes.
Design tooling.
Define Q/A processes.
Begin procurement of long-lead



Facilitate supplier ramp-up.
Refine fabrication and assembly processes.
Train assembly line staff.
Refine quality assurance procedures.



Begin production operation of entire system.

