

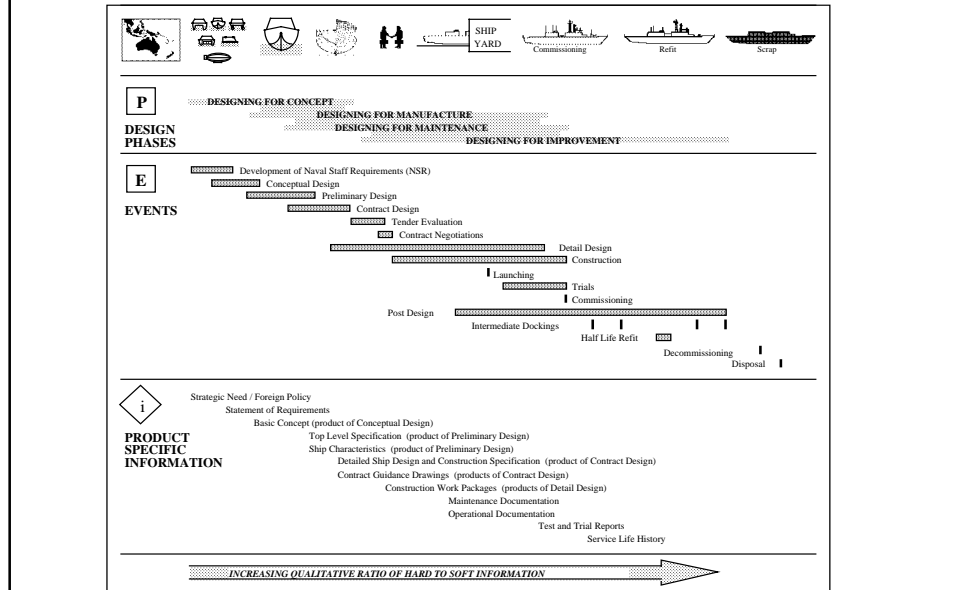
Lexicon

- **Attribute**
 - performance parameters, synonyms for properties and characteristics
 - Example: gas mileage, horsepower of a car
- **Criteria**
 - measure of effectiveness, basis for design evaluation
 - Criteria are emerging as a form of attributes or objectives.
 - Example: gas mileage, production cost
- **Objective**
 - something to be pursued to its fullest
 - An objective indicates the direction of change desired
 - Example: A car manufacture wants to maximize gas mileage or minimize production cost or minimize its level of air pollution.

Design Management (Chapters 12 &13)

- **Design Strategy** describes the general plan of action for a design project and the sequence of particular activities (tactics, or design methods).
Example: p.191. Cross.
- **Time Management:** major tasks, starting and ending dates, deadlines, group and individual assignments, other activities.

Example of Product Development Planning - Ship Design



Functional Analysis Method (Chapter 6)

- **Express the overall function** for the design in terms of the conversion of inputs and outputs (flows of materials, energy or information).
- **Breakdown** the overall function into a set of essential **sub-functions**.
- Draw a **block diagram** showing the interactions between sub-functions.
- **Search for appropriate components** for performing the sub-functions and their interactions.

Examples

What are the *functions (subfunctions)* of a (clothes) washing machine?

Finding alternative versions of the conventional forklift truck for lifting and carrying loads in factories.

Setting Performance Specifications (Chapter 7)

- **Performance specifications (PS)** defines the precise limits for performance attributes.
- **PS limits the range of acceptable solutions** (not too narrow or too broad)
- **PS setting steps**
 - Consider the different levels of generality of solution which might be applicable (product alternatives, product types, product features)
 - Determine the level of generality at which to operate
 - Identify the required performance attributes (independent of solutions)