

About Brainstorming

- **Objective of Brainstorming**
 - Generate a list of ideas and possible solutions
 - Cover the full range of possibilities
 - Stimulate creativity
- **Why More Than One Idea**
 - You do not know which one will be the "best" idea until you look at several
 - The other ideas put the "best" idea into perspective
 - You can combine elements of several ideas
- **On Brainstorming**

Criticism is deferred until later, "Free wheeling" is encouraged, Quantity is the aim, Combine ideas; Turning bad ones into good
Done in a group (4 to 12 people)

Brainstorming - Tips and Roadblocks

Tips

- Think about topic before meeting
- Talk to others
- Question everything
- Watch prejudice
- Go to the literature
- Look for analogies

Roadblocks

- Past experience
- Limited range of basic knowledge
- Stop at first solution
- Failure to consider all of the detail
- Failure to distinguish between cause and effect
- Failure to see what is around you
- Fear of failure

Morphological Chart (Chapter 9)

Solutions		1	2	...	j	...	m	
Sub-functions	1	F_1	S_{11}	S_{12}		S_{1j}		S_{1m}
2	F_2	S_{21}	S_{22}		S_{2j}		S_{2m}	
⋮		⋮	⋮		⋮		⋮	
i	F_i	S_{i1}	S_{i2}		S_{ij}		S_{im}	
⋮		⋮	⋮		⋮		⋮	
n	F_n	S_{n1}	S_{n2}		S_{nj}		S_{nm}	

- List the features or functions that are essential to the product
- For each feature or function list the means by which it might be achieved
- Draw up a chart containing all the possible sub-solutions
- Identify feasible combinations of sub-solutions

Evaluating Alternatives

- List alternative ideas/designs/options
- List constraints and criteria
- Eliminate alternatives which don't meet the constraints
- **Assign weights to the criteria (1-10)**
- **Assign scores to each alternative w.r.t. each criteria (1-10)**
- Put in matrix form
- Multiply scores and weights; add to find total score
- Compare total scores