Generating Solutions

- To succeed, ultimately you must
  - Define the correct problem
  - Select the best solution for that problem
- You can’t select the best solution unless it gets on the list of potential solutions to be evaluated.
- Need an effective process for generating potential solution alternatives

Mental Blocks (1)

1. Defining the problem too narrowly
2. Attacking the symptoms and not the real problem
3. Assuming there is only one right answer
4. Getting “hooked” on an early solution alternative
5. Getting “hooked” on a solution that almost works (but really doesn’t)
6. Being distracted by irrelevant information (mental dazzle)
7. Getting frustrated by lack of success
8. Being too anxious to finish
9. Defining the problem ambiguously
Mental Blocks (2)

- There is a direct correlation between the time people spend “playing” with a problem and the diversity of the solutions generated.
- Sometimes problem solvers will not cross a perceived imaginary limit – some constraint formed in the mind of the solver, that does not exist in the problem statement.

Mental Blocks (3)

1. Stereotyping: Functional fixedness
2. Limiting the problem unnecessarily
3. Saturation or information overload
4. Fear of risk taking
5. Lack of appetite for chaos
6. Judging rather than generating ideas
7. Lack of challenge
8. Inability to incubate

Sources of blocks: Culture, environment, inability to express, inflexible/inadequate problem solving skills
Blockbusting
Problems/Solutions

1. Negative Attitude: Attitude Adjustment
   – List positives, focus on opportunity instead of risk
2. Fear of Failure: Risk Taking
   – Define the risks and how to deal with them
3. Following Rules: Breaking Rules
   – Try new things, new foods, new places
4. Overreliance on Logic: Internal Creative Climate
   – Let imagination work, play with it
5. Believing Not Creative: Creative Belief
   – Ask “what if,” daydream, make analogies

Improving Creative Abilities

- Keep track of ideas (write them down immediately)
- Pose new questions to yourself every day
- Keep abreast of your field
- Learn about things outside your specialty
- Avoid rigid, set patterns of doing things
- Be open and receptive to new ideas
- Be alert in your observations
- Adopt a risk-taking attitude
- Keep your sense of humor
- Engage in creative hobbies
- Have courage and self confidence
- Learn to know and understand yourself
Methods: Generating Solutions

• Brainstorming
• Checklist of keywords that encourage solutions
  – Modify, substitute, magnify/minimize, rearrange
• Random Stimulation
  – Picking words from dictionary
• Other points of view
  – Force yourself to other views: other people in other roles, animals, etc.

Deciding the Course of Action

Kepner-Tregoe (K.T.) approach:

• K.T. Situation Analysis:
  – Past: What is at fault?
• K.T. Decision Analysis:
  – Present: How to correct the fault?
• K.T. Potential Problem Analysis:
  – Future: How to prevent future faults?
K.T. Situation Analysis

- For prioritizing multiple problems
- Make a list of all problems
- For each, assign scores (H, M, L) for each
  - Timing: How urgent?
  - Trend: What is happening over time?
  - Impact: How serious is problem?
  - What K.T. analysis? (PA, DA, PPA)

SA Example: Store Manager

<table>
<thead>
<tr>
<th>Major Concern</th>
<th>Sub-concern</th>
<th>Timing</th>
<th>Trend</th>
<th>Impact</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Space</td>
<td>Unopened boxes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>20 new desks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personnel</td>
<td>Employee morale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finances</td>
<td>Money owed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Money due</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality</td>
<td>Scratched desk</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# K.T. Problem Analysis

<table>
<thead>
<tr>
<th>What</th>
<th>Identify:</th>
<th>IS</th>
<th>IS NOT</th>
<th>Distinction</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>What is problem?</td>
<td>What is not problem?</td>
<td>What difference between is and is not?</td>
<td>What is possible cause?</td>
</tr>
<tr>
<td>Where</td>
<td>Locate:</td>
<td>Where is problem found?</td>
<td>Where is problem not found?</td>
<td>What difference in locations?</td>
<td>What cause?</td>
</tr>
<tr>
<td>When</td>
<td>Timing:</td>
<td>When does problem occur?</td>
<td>When does problem not occur?</td>
<td>What difference in timing?</td>
<td>What cause?</td>
</tr>
<tr>
<td>Extent</td>
<td>Magnitude:</td>
<td>How far does problem extend?</td>
<td>How localized is problem?</td>
<td>What is the distinction?</td>
<td>What cause?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>How many units are affected?</td>
<td>How many not affected?</td>
<td>What is the distinction?</td>
<td>What cause?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>How much of any one unit is affected?</td>
<td>How much of any one unit is not affected?</td>
<td>What is the distinction?</td>
<td>What cause?</td>
</tr>
</tbody>
</table>

- Useful for troubleshooting, where cause of problem is not known.
- Basic premise is that there is something that distinguishes what the problem IS from what it IS NOT.
  - The distinction column is the most important
## K.T. PA Example

<table>
<thead>
<tr>
<th>IS</th>
<th>IS NOT</th>
<th>DISTINCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHAT: Rash</td>
<td>Other illness</td>
<td>External contact</td>
</tr>
<tr>
<td>WHEN: New planes used</td>
<td>Old planes used</td>
<td>Different materials</td>
</tr>
<tr>
<td>WHERE: Flights over water</td>
<td>Flights over land</td>
<td>Different crew procedures</td>
</tr>
<tr>
<td>EXTENT: Face, hands, arms</td>
<td>Other parts</td>
<td>Something contacting face, hands and arms</td>
</tr>
<tr>
<td>Only some attendants</td>
<td>All attendants</td>
<td>Crew duties</td>
</tr>
</tbody>
</table>