

MORPHOLOGICAL MATRIX



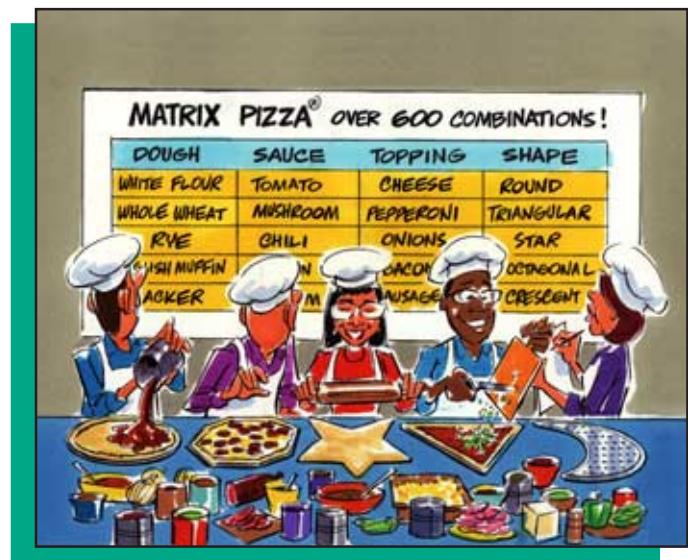
Purpose

The Morphological Matrix stimulates new thinking by combining elements from several attributes of the task. Use this tool to:

- Stimulate incremental change or improvement;
- Produce a large number of options very quickly; or
- Explore new combinations within an existing structure of a task.

Description

The Morphological Matrix uses 3-5 key parts or parameters of the task as a framework for creating new options. Each parameter is listed as a column heading in the matrix. Below each parameter are placed specific examples of possible values that parameter might have. New options are generated by selecting one item from each column. These items are combined to make a composite option. A matrix containing four parameters with ten values for each parameter yields ten thousand possible combinations!



History

The Morphological Matrix stems from morphology, the study of form and structure in nature. Zwicky (1969) used the morphological model in the philosophy of scientific thought and research. Allen (1961) applied Morphology in creative thinking and problem solving. Methods or tools similar to the Morphological Matrix have often been used in the entertainment industry. For example, Fran Striker reported using this tool to write plots for the Lone Ranger radio and television series, and Disney's writers (Greene, K., & Greene, R., 1991) have used related tools (e.g., Storyboarding) to map out the plots or story possibilities for movies and television shows.

References

- Allen, M. S. (1961). *An introduction to morphological creativity*. Long Beach, CA: Institute of Applied Creativity.
- Greene, K., & Greene, R. (1991). *The man behind the magic: The story of Walt Disney*. New York, NY: Penguin Books USA Inc.
- Zwicky, F. (1969). *Discovery, invention, research through the morphological approach*. NY: Macmillan.

Suggested Materials

- Morphological Matrix on worksheets, flipchart or transparencies.
- General facilitation supplies (e.g., flipchart, markers, tape, etc.).

Steps for Using the Morphological Matrix

1) Focus the Group on the Task

- Write the task so it is visible to the entire group.
- Ask the client to explain the task to the group.
- Have the client answer questions about the topic (if necessary).

2) Review Generating Guidelines

- Establish the guidelines for generating options: Defer Judgment; Freewheel; Seek Combinations; and Strive for Quantity.
- Clarify questions about process or content.

3) Provide an Overview of the Morphological Matrix (if new to the group)

- Clarify the purpose and outcome of the Morphological Matrix.
- Overview the steps.
- Set a target number of options to generate.
- Answer questions about the Morphological Matrix.

4) Identify Parameters in the Task

- Ask client to identify the 3-5 most important parameters (parts or variables) of the task.
- Clarify the meaning of parameters.

5) Create the Morphological Matrix

- Write each parameter title at the top of a column in the matrix.
- Ask group members to identify elements of each parameter; these should represent real elements within the task.
- List the elements under the appropriate title.

6) Generate Options

- Select one interesting element from each column.
- Ask group members to create new options by combining the elements. For example:
 “What does this combination suggest to you?”
 “What do you get when you cross these elements together?”
- Repeat this step until the target number of options has been reached.

7) Check on Progress

- Get feedback from the client about every 15 - 25 options. For example:
 “Is this going in the right direction?”
 “Is this working for you?” “Are you getting the kind of options you need?”
- Once the target number is reached, ask the client:
 “Do you have enough options to consider?”
 “Would you like more options?”

8) Take Next Steps

- Examine possible next steps. For example:
 Generate additional options using the same or different tool;
 Focus options;
 Provide time for reflection and incubation; or
 Identify actions to be implemented.

Tips for Using the Morphological Matrix

- Limit the number of parameters to 3 - 5. The elements under each should be real parts of the situation being addressed. These are often best identified by those who know the situation.
- Use multiple flipchart pages to make the matrix large enough to read.
- Post-its® can be used to speed up the process.
- It can be helpful to create an overhead copy of the matrix to guide the group.
- Review and reinforce the guidelines for generating options.
- Number the rows in the matrix. For random selection of elements, use number combinations (e.g. phone numbers, social security numbers, etc.).
- Elements unrelated to the task situation can also be put in the matrix to generate a wider range of novelty.

Morphological Matrix Worksheet

Statement: _____

	Parameter 1	Parameter 2	Parameter 3	Parameter 4
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

Combinations: _____
