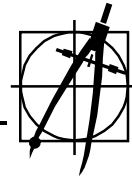


Prioritization Matrices



Prioritization matrices are useful for applying a systematic approach to weighting/prioritizing criteria towards evaluating solutions against the criteria. The use of these matrices helps teams focus and come to a consensus on key items.

Project activities in which prioritization matrices are useful:

- * Having customers prioritise “wants”
- * Prioritizing functional and design requirements

Other tools that are useful in conjunction with prioritization matrices:

- * Brainstorming
- * Eliciting Input
- * Evaluation Matrices
- * Functional Cost Analysis
- * Kano Model Analysis
- * Requirements Management

Introduction

There are a number of different prioritization matrices. Two different matrices are provided in this tool. The first matrix allows a simple comparison against paired items (i.e., Is A or B preferred?) resulting in a rank order. The second advanced matrix facilitates a more discerning comparison where it is determined, for paired items, if A is much more important/better, more important/better, the same, less important/better, or much less important/better than B.

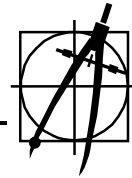
The weakness of the simple matrix is that it is not as useful at providing a more meaningful relative comparison to be used in further evaluations. However, if the items being evaluated are viewed to be similar in terms of priority or importance, there is a risk to using the advanced matrix in that there is temptation to evaluate the majority of paired items as equally important, thus prioritization would not be achieved. The simple matrix would be recommended in order to force decisions.

Application of Prioritization Matrices

- Obtain the list of items to be prioritised through customer input, brainstorming, affinity diagrams or other appropriate sources such as legislative requirements. If there are more than 20 items to compare, try to reduce the list through an affinity exercise* or by eliminating the items that are obviously a very low priority.

* An affinity exercise or diagram is a method designed to allow a group to generate a list of ideas then arrange those ideas into natural groupings which are subsequently named or given headings (The Memory Jogger II, 1994).

Prioritization Matrices



- Determine who will participate in the prioritization exercise and the most appropriate matrix to use considering the strengths and limitations of the matrices. Populate the horizontal and vertical columns of the matrix with a list. If customer “wants” are being prioritised, make every effort to bring the customer together with the team to complete the prioritization exercise. If this is not feasible, provide the matrix to the customer(s) for completion.

Simple Prioritization Matrix (Figure 1)

- Working down each column, enter the number of the preferred item in the box at the intersection of the two items being compared (e.g., in the example below, Cost (1) is deemed more important than Size (2) therefore ‘1’ is entered into the box at the intersection of the Cost column and Size row).
- Repeat this comparison until you have compared each item against all others.
- Count the number of times each item is selected.

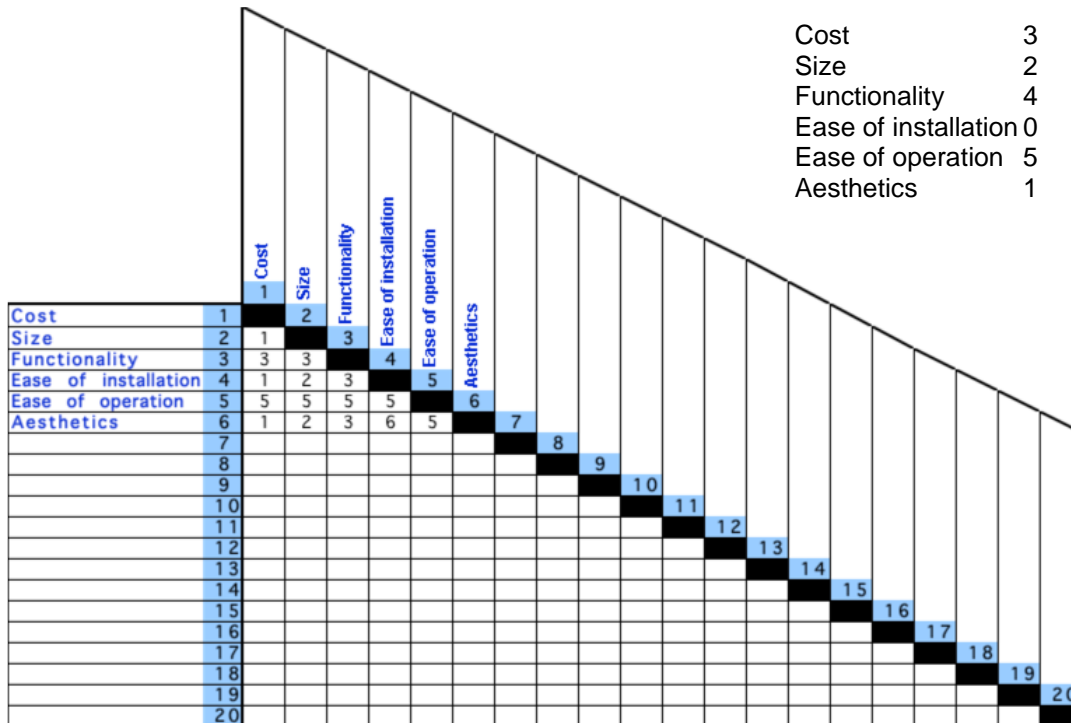
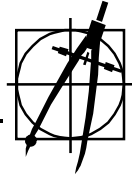


Figure 1-Simple Prioritization Matrix

Prioritization Matrices



- If desired, a rank and/or percentage score can be determined for each item. The item with the greatest count ranks #1, such as “Ease of operation” in the example above. It is possible that two or more items may have been selected the same number of times. These items can be assigned the same rank or the items can be re-compared against each other if having multiple items with the same rank is not desired.
- Determine the percentage score by determining the overall count total then divide the count for each item by this overall count total. The percentage score for “Functionality” in the example above is 27% ($4 \div 15 \times 100\%$).

Advanced Prioritization Matrix

- Working down each column, evaluate A (row headings) vs. B (column headings) and insert the rating, based on the following table, in the white box at the intersection of the two items being compared
 - 10** A is much more important/much better than B
 - 5** A is more important/better than B
 - 1** A is the same as B
 - .2** A is less important/worse than B
 - .1** A is much less important/much worse than B
- Enter the reciprocal value into the corresponding grey cell.

Example (Figure 2): “Functionality” (A) is determined to be more important than “Cost” (B) and therefore ‘5’ is entered into the matrix. A value of ‘0.2’ is entered into the corresponding grey cell. (Note: the product of corresponding cells is 1).

Prioritization Matrices

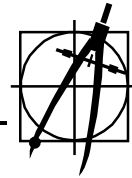
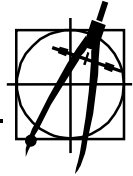


Figure 2-Advanced Prioritization Matrix

	Cost	Size	Functionality	Ease of installation	Ease of operation	Aesthetics															TOTALS
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Cost	1		0.2	5	0.2	10															16.
Size	2	1		0.2	1	0.1	1														3.3
Functionality	3	5	5		0.1	1	10														21.
Ease of installation	4	0.2	1	10		0.1	0.2														11.
Ease of operation	5	5	10	1	10		0.1														26.
Aesthetics	6	0.1	1	0.1	5	10															16.
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- Total each row to determine the score for each item.
- A rank and/or percentage score can be determined for each item in the same manner as the simple prioritization matrix. The item with the greatest score ranks #1, such as “Ease of operation” in the example above. It is possible that two or more items may have the same score. These items can be assigned the same rank or the items can be re-compared against each other if having multiple items with the same rank is not desired.
- Determine the percentage scores by determining the overall score total then divide the score for each item by this overall total. The percentage score for “Functionality” in the example above is 22% ($94.6 \div 21.1 \times 100\%$).

Prioritization Matrices

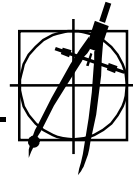


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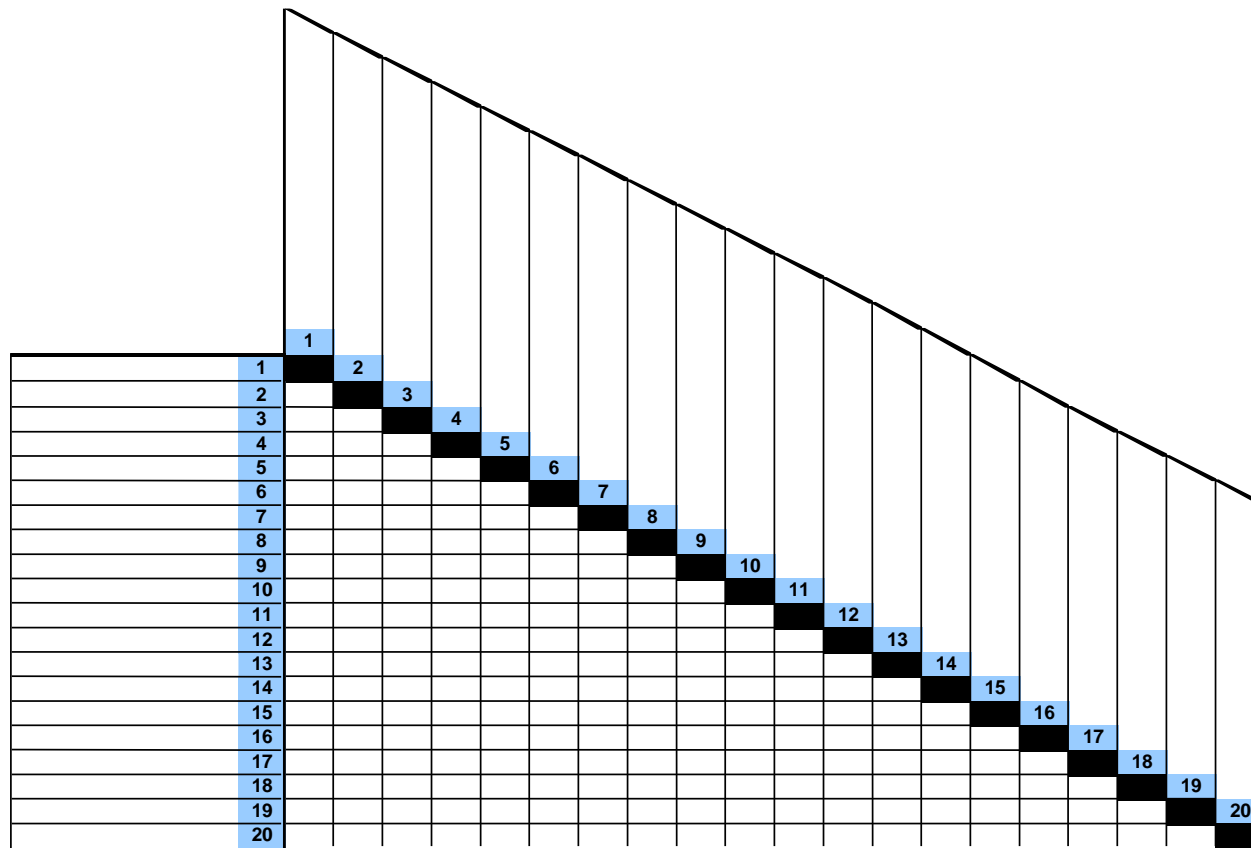
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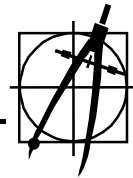
Prioritization Matrices



Simple Prioritization Matrix



Prioritization Matrices



Advanced Prioritization Matrix

