Make a Choice

Use a selection matrix to pick projects, evaluate solutions

A SELECTION matrix, also known as a prioritization matrix, is a ranking technique used to evaluate potential projects, problems, alternatives or remedies based on specific criteria or quality dimensions.

The selection matrix has many uses, such as when a quality group is selecting the right type of project for improvement. Does the group want a project with the greatest return on investment (ROI) or one that can be implemented quickly?

The matrix can also be used during quality improvement projects to help project teams evaluate proposed remedies or solutions to a problem.

Using the matrix

Create a simple matrix template to list the desired criteria and available alternatives. The matrix lists the criteria in the left-hand column and the alternatives in columns to the right.

To begin completing the matrix, the project team agrees on the criteria to be used or the ideal items that satisfy the criteria. Sometimes, a team is told which criteria to use. In other cases, the team brainstorms to generate a list of potential criteria and reaches consensus on the criteria to be used.

After consensus is reached, place the criteria items under the criteria column on the matrix. In the example in Table 1, an improvement project team agreed on the criteria to be used to rate and rank three proposed remedies.

Next steps

Rate the alternatives against each of the criteria using a scale of 1 to 5, with 5 being closest to ideal. This can be done by collecting and analyzing actual data if it exists or by rating the alternatives subjectively.

In the example, the cost of implementation (criteria item A) for remedy A is higher than the cost of implementation for remedies B and C (see Table 2). Remedy C has the lowest implementation cost and is rated a 5. Similarly, the return on investment (criteria item E) for remedy B is rated a 4—higher than the ROI for remedies A and C.

When all of the ratings are complete, compute an overall score by multiplying the individual alternative ratings in the respective columns (see Online Table 1 at www.qualityprogress.com). For example, to compute the overall score for remedy A in the example:

$$3 * 3 * 2 * 3 * 2 = 108.$$

After the overall score is computed for each alternative, rank the alternatives and agree on the most suitable option. In this example, remedy B has the highest overall score and an alternative ranking of 1, making it the most suitable alternative.

The proposed remedy should still be tested for suitability using quality tools, such as a failure mode and effects analysis. QP

CECELIA MCCAIN is a quality consultant in Detroit. She is a senior member of ASQ and a certified Six Sigma Black Belt.

Selection matrix template / TABLE 1

Selection matrix			
Criteria	Alternatives		
	Remedy A	Remedy B	Remedy C
A. Cost of implementation			
B. Training time			
C. Time to implement			
D. Alignment to strategy			
E. Return on investment			
Overall score			
Alternative ranking			

Selection matrix template with scores / TABLE 2

Selection matrix			
Criteria	Alternatives		
	Remedy A	Remedy B	Remedy C
A. Cost of implementation	3	4	5
B. Training time	3	5	1
C. Time to implement	2	5	3
D. Alignment to strategy	3	5	2
E. Return on investment	2	4	1
Overall score	**108**	**2,000**	**30**
Alternative ranking			