

## Selecting Seller by Source Selection Criteria using DAME

In procurement management it is often necessary to evaluate sellers based on proposals they have sent. Evaluation is crucial for the award decision.

Proposal evaluation is an assessment of the proposal and the offeror's ability to perform the prospective contract successfully.

Let's say you're evaluating 4 Sellers according to 4 evaluation criteria, which are:

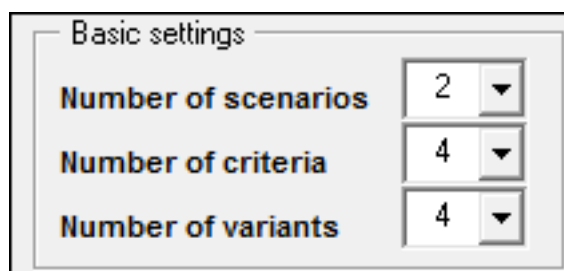
**Bid (\$)** - money asked to carry out the job -> "MIN"

**Past Performance** - Excellent (2), Satisfactory (1.5), N/A (1), Bad (0.5) -> "MAX"

**Know how possessed** - Pairwise comparison (we're comparing sellers against one another) -> PAIRWISE COMPARISON

**Own resources available** - Pairwise comparison (we're comparing sellers against one another) -> PAIRWISE COMPARISON

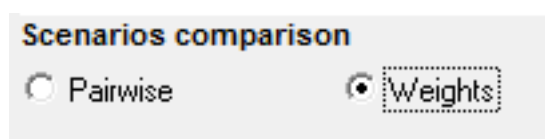
There are 2 key authorities submitting their judgements. That means 2 "scenarios". In DAME you need the following:



Basic settings

Number of scenarios	2
Number of criteria	4
Number of variants	4

You will award a weight for each "scenario" manually. One evaluator is more important than the other: CEO's word has more weight than the Project Manager's.



Scenarios comparison

Pairwise  Weights

We're going to get weight for criteria by measuring them against one another by pairwise comparisons:



Criteria comparison

Pairwise  Weights

Now, as for the 4 criteria, we need to define the following:

The dialog box is titled "Criteria" and "Evaluation of variants according to individual criteria". It contains a table of radio button options for 4 criteria. The options are:

Criteria	Pairwise	Values max	Values min
1.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
2.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
3.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

At the bottom of the dialog box are two buttons: "OK" and "Cancel".

Once that is done, you can click OK.

You can

- rename scenarios to be:

- 1) CEO (Chief Executive Officer)
- 2) PM (Project Manager)

- rename criteria to be:

- 1) Bid (marked in red because it's "minimizing")
- 2) Past Performance
- 3) Know how possessed
- 4) Resources available

- rename the variants:

- 1) Seller 1
- 2) Seller 2
- 3) Seller 3
- 4) Seller 4

<b>Names of scenarios:</b>			
CEO	PM		
<b>Names of criteria:</b>			
Bid	Past Performance	Know How	Resource
<b>Names of variants:</b>			
Seller 1	Seller 2	Seller 3	Seller 4

We're selecting Geometric Mean as the evaluation method.

**Criteria weights evaluation method:**

Method

Scenario comparison:

CEO to PM is 2:1. That means the CEO gets a weight of 0.667, the PM gets a weight of 0.333

<b>Scenarios comparison:</b>			
<i>Scenarios</i>	<i>Value</i>		<i>Scenarios weights</i>
CEO	2		0.666667
PM	1		0.333333

### CEO's evaluation:

CEO thinks that past performance is 3x more important than price, know how is 2x more important than price and resources are just as important as price (1x). Both Know how and resources are less important than past performance (in his judgement 0.5), know how and resources are equally important.

<b>Criteria Comparison:</b>						
<i>Criteria</i>	<i>Bid</i>	<i>Past Perf</i>	<i>Know How</i>	<i>Resources</i>	<b>0.011</b>	<i>Criteria weights</i>
Bid	1	1/3	1/2	1		0.147186
Past Performance	3	1	2	2		0.428747
Know How	2	0.5	1	1		0.230359
Resources	1	0.5	1	1		0.193708

As we can see, the inconsistency ratio is 0.011, which is regarded acceptable (less than 10 per cent).

Sellers have come up with the following bids:

<i>Bid</i>	Value
Seller 1	100000
Seller 2	80000
Seller 3	90000
Seller 4	95000

The CEO worked with Seller 1 before and has a very good experience with them. He does not know Seller 2, he has a good experience with Seller 3 and a bad experience with Seller 4.

<i>Past Performance</i>	Value
Seller 1	2
Seller 2	1
Seller 3	1.5
Seller 4	0.5

CEO knows that Seller 3 is best equipped by know-how for the job at hand (they are well-known for that in the industry) and Seller 4 is "fairly new" to the required scope.

<i>Know How</i>	Seller 1	Seller 2	Seller 3	Seller 4	0.010
Seller 1	1	1	1/3	3	
Seller 2	1	1	1/2	2	
Seller 3	3	2	1	6	
Seller 4	0.333333333	0.5	0.166667	1	

The CEO "heard" that the best resources for the job are in possession of Seller 3. He is not sure about others.

<i>Resources</i>	Seller 1	Seller 2	Seller 3	Seller 4	0.005
Seller 1	1	1	1/2	1	
Seller 2	1	1	1/2	1	
Seller 3	2	2	1	3	
Seller 4	1	1	0.333333	1	

Overall evaluation by CEO has generated the following results:

### Evaluation of Variants According to Individual Criteria:

Zn=	Weight	Rank
Seller 1	0.258542275	2
Seller 2	0.254159594	3
Seller 3	0.184129579	4
Seller 4	0.303168552	1

Seller 4 is at the top of the list.

### PM's Evaluation:

PM thinks that the most important criterion for this kind of evaluation is Know-How, then Price (Bid). Resources are "fairly" unimportant.

Criteria Comparison:							
Criteria	Bid	Past Perf	Know How	Resources	0.059	Criteria weights	
Bid	1	2	1/4	3			0.233996
Past Performance	0.5	1	1/2	1			0.14951
Know How	4	2	1	4			0.50289
Resources	0.333333333	1	0.25	1			0.113603

The Bids (proposed) is given and is the same as for the CEO.

Past Performance as viewed by the PM is most favourable for Seller 2 which whom he has the best personal experience over Seller 3 with whom he was "a bit dissappointed" in the past.

Past Performance	Value
Seller 1	1
Seller 2	2
Seller 3	0.5
Seller 4	1

The fact that Seller 3 is best fitted for know-how is is recognized by the PM too:

Know How	Seller 1	Seller 2	Seller 3	Seller 4	0.082
Seller 1	1	1/2	1/5	1	
Seller 2	2	1	1/4	1/2	
Seller 3	5	4	1	1	
Seller 4	1	2	1	1	

PM does not have any information about Resources making all Sellers equally important:

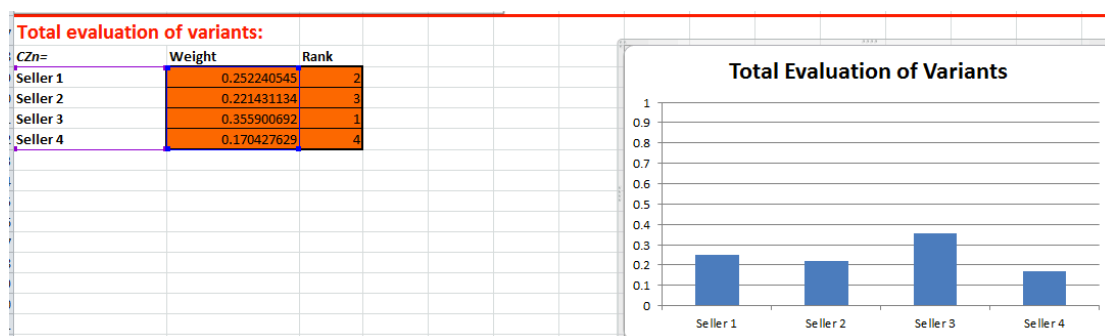
Resources	Seller 1	Seller 2	Seller 3	Seller 4	0.000
Seller 1	1	1	1	1	
Seller 2	1	1	1	1	
Seller 3	1	1	1	1	
Seller 4	1	1	1	1	

According to PM's evaluation Seller 2 would receive the highest rank (unlike the CEO who would award Seller 4):

Evaluation of Variants According to Individual Criteria:		
Zn=	Weight	Rank
Seller 1	0.250075541	2
Seller 2	0.322145173	1
Seller 3	0.194376477	4
Seller 4	0.233402809	3

## Overall Evaluation

When those two evaluations are compiled together, Seller 3 comes first overall, followed by Seller 1, Seller 2 and Seller 4.



The best-evaluated seller by both the CEO and the Project Manager is Seller 3.