

A DECISION MAKING/PROBLEM SOLVING MODEL

By Thomas Williams

Objective decision making is an essential skill for leaders in any high performance organization.

To rely upon unchallenged assumptions or sloppy reasoning (where personal agendas masquerade as evidence) is to invite “group think” and risk.

This seven step deliberate decision making model will help you and your team make objective, fact based, decisions.

Although following a model like this one does not guarantee a good decision, it does guarantee that your team will think about real options, versus having romantic attachments to someone’s ideas or pre-selected courses of action.

The Seven Step Model

- Identify the problem
- Gather Information
- Generate alternatives
- Analyze the alternatives
- Compare the alternatives
- Make a decision
- Assess

Even if you have the experience (and instinct) to run through these steps intuitively, you should run through them anyway. For those with less experience, or very different frames of reference, it’s important to establish some kind

of common ground and it’s a great learning opportunity. Also, if you use this process regularly it will become instinct for everyone and you will experience a more efficient team. Although you don’t have to follow every step rigidly, skipping or shortcutting tends to reinforce subjectivity, and the substitution of “gut reasoning” over logic.

Step One: Identify the Problem

You might also say this is asking, “Just what are we deciding upon here?” It’s not always as obvious as it sounds, so you need to give it some thought. If you focus on the symptoms of a problem (the visible things that caught your attention) you might come to false conclusions.

As an example, if people are getting sick after eating lunch, and you simply medicate your patients but do nothing about the food, you are most likely fixated on solving a symptom.

Here are some questions to ask to help define the scope and size of the problem:

- Who does the problem affect?
- What is affected?
- When did the problem occur?
- Where is the problem?
- Why did the problem occur?

Step Two: Gather Information

Here you are listing all of the relevant facts and assumptions of the problem.

- Facts
- Assumptions
- Limitations

Facts and Assumptions

Facts are verifiable truths. Assumptions are likely to be true, but are yet unverified. As you list your facts (and assumptions) make sure that they relate to the problem, not to possible solutions. For example, when thinking about buying a new car, a fact concerning the problem might be that the use of the car will be for deliveries, and will require cargo space. Later, and as you generate options, you will note that the details about the individual cars, and that

some cars have larger trunks than others (a selection criterion?).

Also, decision makers sometimes link their assumptions to their facts, as in “it’s raining (fact) and we assume for planning purposes that it will stop raining tomorrow.

Be wary of opinions. Although opinions may be relevant, they are not always factual or reliable.

Limitations

You also need to understand what limitations might be out there. Limitations include constraints and restraints.

A constraint is something the boss says you must do. A restraint is something that you should not do.

Step Three: Generate Alternatives

This is a brainstorming process that encourages creativity and quantity. Don’t judge ideas at this stage – that comes later when you conduct analysis and comparison. When you’re done, you should have several good statements that describe your potential courses of action.

The point here is to develop *some real alternatives*, not the first solution (which may or may not be the best solution) that comes to mind. It’s tempting to simply generate a favorite and some clearly weak alternatives. This is not fair to the boss who wants options, not simply your preference.

Later in the process you will test your ideas to select which is best by objective standards. It’s common to see teams surprised by the outcome of their analysis and comparison. Pointedly, some teams will try to skew the results to ensure that their favorite “wins.” Be wary not to let this happen. When you seek confirming evidence, your decision may be popular, but it may not be right.

Step Four: Analyze the options

This is the step where we begin to narrow your selection. When you brainstormed (in step three) some options will be ill conceived and

may not work. For each concept, ask yourself is it:

- Suitable – It’ll work
- Feasible – You have the resources
- Acceptable – It’s worth the cost and risk

If the answer is no, then don’t bother evaluating this option against the others. Toss it aside.

With the options you have left, you’ll want assess them against some standard measures so you know how they’ll stack up against each other.

These are called evaluation, or ‘want’ criteria. They are objective measures by which you and your team can judge each of the options without resorting to clashes of opinion.

Common evaluation criteria include:

- Cost
- Time
- Efficiency
- Simplicity
- Safety

Create as many criteria as necessary to evaluate each of your ideas, but make sure you define what you mean by each, that is a unit of measure that will allow like-wise comparison. For example, when thinking about gasoline, cost may not be just the total price. It may mean price per gallon. You might measure efficiency as miles per gallon, or if your mission requires long distance travel, the number of miles per tank.

List your options and how they measure up individually against each criterion. Remember, you’re not comparing options yet; you’re only gathering the data so you can compare apples to apples, per se.

Step Five: Compare the options

Once you’ve gathered the data from step four, it’s time to put the choices side by side. There are many ways to compare, but in complex situations, it’s often best to use a matrix like this one:

	Criterion	Criterion	Criterion	Total
Option 1				
Option 2				
Option 3				
Option 4				

Using a ranking system (1, 2, 3, 4, etc., where 1 is best) evaluate your options according to each criterion. If there's a tie, give each option the same number.

	Criterion	Criterion	Criterion	Total
Option 1	1			
Option 2	3			
Option 3	2			
Option 4	4			

For example, option one is best. Option three is next. Option two is third. Option Four is last. It's the worst for this criterion.

When you're done, you should be able to sum up your numbers in the total column and pick the one with the lowest sum. Here, "Option 1" scored the lowest. It's the best overall blend of each criterion and is my logical choice.

	Criterion	Criterion	Criterion	Total
Option 1	1	1	4	6
Option 2	3	1	3	7
Option 3	2	2	2	13
Option 4	4	3	1	8

Step Six: Decide

You now have an objective selection, so it's time to act on your choice, or brief the boss, or relevant staff person on what you recommend and why.

Step Seven: Assess

Nothing is foolproof. If you make a decision, and some of your assumptions, or criterion measures turn out wrong, your solution may need adjustment. You may also decide that one criterion is more important than another. This is fair, and you can add a numeric weight (such as, this criterion is worth two-times the others...we're going to double each result.) Just be careful not to adjust the criterion weights to force the outcome in the direction of your pre-selected favorite.

An Example

Here's an illustration so you know this process isn't so foreign:

You're in a grocery store to buy a box of cereal. There are dozens of choices. Mentally, you list your facts and assumptions:

Fact: There are organic cereals, sweetened cereals, non-sweetened cereals, and healthy cereals

Fact: The average price for a box of organic cereal is \$6.00.

Fact: Not all boxes are the same size
 Assumption: *The best deal may not be the cheapest price*

Fact: You have \$5.00 to spend
 Assumption: *This limits your choice*

Restrains: Your family told you not to buy any product made by company X.

Now you consider your options given these facts, assumptions and limitations.

You know you cannot afford the high priced organic blends. You toss it aside as a non-starter. Eliminating all of Brand X's cereals leaves you with only four choices. (It's a small grocery store...) Now you have to decide which one is best.

You have some criteria in mind, such as getting the best value for your dollar, how much your family will enjoy eating your purchase. You also want something that has nutrition.

Your criteria are: Cost, Taste, and Health.

But cost is not that simple with cereal. Some boxes are \$3.00, and others are \$4.00. Not all boxes are the same size. *You decide to define cost as dollars per ounce.*

Taste is somewhat subjective, but you decide that sweetened cereal tastes the best, while non-sweetened cereal is second, and health-food cereal is last.

Defining health is not so easy, so you decide to go with something simple, the total calories per serving.

Here's what you came up with for options:

Option 1 is a 21 oz box made of oats for \$4.99. That's 24 cents per ounce. It's sweetened, and has 120 calories per serving.

Option 2 is a 20 oz box of oats for \$3.99. That's 20 cents per ounce. It's unsweetened and has 100 calories per serving.

Option 3 is a 19.25 oz box of oats for \$4.39. That's 23 cents per ounce. It's considered 'healthy,' but its calories are 230 per serving.

Option 4 is a 15.6 oz box of rice for \$3.79. That's 24 cents per ounce. It's unsweetened, and has 100 calories per serving.

How do you compare these? You might construct a simple matrix (or do this in your head...)

For this chart, one (1) is best. Where there is a tie, I assign the same number to each. When I sum up my points, I look for the lowest score. In this case, it's option two!

	Cost	Taste	Health	Total
Option 1	3	1	2	6
Option 2	1	2	1	4
Option 3	2	3	3	8
Option 4	3	2	1	6

In this objective, fact based decision making process you whittled down all of your choices to a balance of price, taste, and health.

Taking the box of cereal home, your family devours it without comment, validating your selection.

Why is this process important? Some of the members of your team might have had a bias for option four. Option four will do the job, but it's not the best option when measured against objective criteria. You want unemotional, unbiased, and objective decisions in a crisis. You want the best course of action, not someone's favorite.