PROBLEM SOLVING

*Last update: 2/22/12 (Arendt)*

**Directions: Problem solving can be somewhat problematic as there are many aspects to be consided. Below is an outline to assist in both problem identification and problem solution recommendation.**

**Part 1: Creating a viable and measurable problem statement**

**Why? Well, how can you solve a problem if you cannot define it in a viable and measurable way?**

Brainstorm a rough initial problem statement (a statement, by the way, can be more than one sentence). Write down your problem or current state:

[put your answer here]

Now, make sure your problem statement is inclusive of below answers – be as specific as possible (revise above as necessary to include these in next step):

* who does it affect / does not affect (note: “me” is not an acceptable answer)
* what does it affect / does not affect (specifically not generally)
* how does it affect / does not affect (specifically not generally)
* when is it a problem / is not a problem (specifically not generally)
* where is it a problem / is not a problem (specifically not generally)

Write down your *modified* problem or current state that includes above criteria (modified problem statement is again multiple sentences):

[put your answer here]

Identify desired or future state (include the who, what, how, when and where):

[put your answer here]

Combine your revised problem or current state and your desired future state into a single statement (*this will be multiple sentences*). This might take a couple of attempts but stick with it. It needs to include who, what, how, when and where you came up with above. This is your official problem statement (final version):

OFFICIAL PROBLEM STATEMENT (MULTIPLE SENTENCE): [put your answer here]

Review your new problem statement (current and future state combined) against the following criteria. If it fails a criteria then update your official problem statement (final version) above.

* Focuses on only one problem.yes or no ( you want to be able to say yes here)
* Less than approximately ten sentences longyes or no ( you want to be able to say yes here)
* Does not suggest a solution (that is to come in the forthcoming steps) yes or no (you want to be able to say yes here)
* Is the problem stated objectively using only the facts? yes or no (you want to be able to say yes here)
* Is the scope of the problem limited enough to handle? yes or no (you want to be able to say yes here)
* Will all who read it understand the same meaning of the problem? yes or no (you want to be able to say yes here)
* Does the statement include "implied causes" or "implied solutions?" yes or no (we do not want implied causes or solutions yet, that will come soon, so here you want to be able to say no)
* Has the "desired state" been described in measurable terms? yes or no (you want to be able to say yes here)
* Do you have a target date identified? yes or no (you want to be able to say yes here)

**[STOP. Review above as this is going to be used to assess your situation as well as define and determine recommendations – then go to next part]**

**Part 2: Situation Analysis**

**Why? Knowing something about the perceived details of the problem will help you identify factors you feel should be in a decision**

 What is the history of the problem? How long has it existed? (Specifically not generally; “A long time” or “I don’t know” or similar are not acceptable answers)

[put your answer here]

How serious is the problem? (Specifically: Simply saying “serious” is not enough detail. Here you are basically asserting why I should care.)

[put your answer here]

What are the causes/influences/affects of the problem? (List a minimum of three causes)

[put your answer here]

What are the symptoms/effects of the problem? (List a minimum of three symptoms)

[put your answer here]

What methods already exist for dealing with the problem? (One word answers are not acceptable)

[put your answer here]

What are the limitations of those methods? (List a minimum of three limitations)

[put your answer here]

How much freedom do you have in gathering information and attempting to solve the problem? (and did you actually gather the information you could from places such as the UVU web site?)

[put your answer here]

What obstacles keep you from achieving the goal? (One word answers are not acceptable)

[put your answer here]

Can the problem be divided into sub problems for definition and analysis? yes or no (we usually want a single issue to focus on, so here you want to be able to say no in most cases)

**[STOP. Review above as this is going to be used to drive your decision analysis – then go to next part]**

**Part 3: Decision Analysis**

**Why? Having a clear idea of what you (and others – multiple viewpoints are strongly recommended) consider to be the most important factors in a decision will help you in making an informed decision**

First, ***before*** *making any recommended solutions, we* have to identify a few criteria:

Examine what an ideal decision consists of and what should be included and excluded out of that decision. (List a minimum of 4 factors that should be considered when choosing the best decision. Things like: Solution is feasible, solution is affordable with current budget, solution will work for the medium to long term, solution can be implemented within one year, solution will not negatively impact other areas of organization, etc)

[put your answer here]

Identify what a reasonable or fairly good situation would be. This becomes important when the ideal solution can not be reached.

[put your answer here]

Determine what standards should be utilized to judge a decision. (List a minimum of four standards that need to be met when choosing a best decision. Things like: The solution must be sustainable for a minimum of 5 years, the solution must cost less than $250,000 in total in up-front costs and less than $20,000 in ongoing yearly costs, etc.).

[put your answer here]

**[STOP. Review above as this is going to be used to assess your recommended solutions – then go to next part]**

**Part 4: Recommendation Selection**

**Why? Having a number of options considered and weighed will increase your likelihood of making a decision that is more beneficial.**

Identify as many possible solutions to our problem as you can (you need to have a minimum of four possible solutions here)

[put your answer here]

Choose what you see as the best solution based on the criteria you specified in decision analysis above (part three)

*[list your chosen solution here]*

Eliminate any solution that does not meet the requirements above and focus on those that could ultimately be utilized.

You should also be concerned with whether or not the solution chosen solves the problem or just minimizes it.

RECOMMENDED SOLUTION: [put your final answer here]

**[STOP. Review above as this is going to be your recommendation– then go to next (and final) part]**

**Part 5: Situation and Recommendation Review**

**Why? Knowing something about the history and current situation will help you understand how things came to be and the parameters within which a solution needs to function. This will help you communicate your ideas as well as better understand your audience’s perspective (to whom you will be proposing idea)**

Is the solution workable in relation to the problem? yes or no ( you want to be able to say yes here)

Are there any limits that the solution presents? (Note: all solutions have limits. One word answers are not acceptable)

[put your answer here]

When looking at the advantages and disadvantages of your proposed solution, which are there more of?

[put your answer here]

Does the chosen idea live up to the standards of the decision criteria? yes or no ( you want to be able to say yes here)

Are the facts and information gathered consistent with the proposed solution? yes or no ( you want to be able to say yes here)

What would have to be done to accomplish your proposed course of action? (be specific – this should be a minimum of a few sentences)

[put your answer here]

When could you reasonably expect results?

[put your answer here]

What unplanned events or accidents are likely to jeopardize planned actions? (all plans have risks—identify the risks here)

[put your answer here]

What are the long and short-term effects of this solution if adopted? (one word answers not acceptable here)

[put your answer here]

and lastly,

Would the solution really, in a currently feasible way, solve the problem even after you answered the above questions? yes or no ( you want to be able to say yes here)

**If you made it to here, you have likely made an excellent problem statement and problem solving recommendation!**

**Now go share your idea and make it happen.**

**Don’t forget to credit those involved throughout implementation.**