

IESE's Six Step Process for Resolving Unstructured Problems

Introduction

In life, as in business, we are confronted by a wide array of problems and situations, which require us to take action. Some problems are relatively straightforward or structured.

Taking a series of actions in a well-defined way can generally solve these types of problems. A flat tire is a good example. If you carefully follow the steps in the owner's manual and have a spare, you will usually be able to continue with your journey. Structured problems always have this clear connection between a finite set of solutions and outcomes that essentially occur every time.

In business most problems are not so easy. They often involve economic, technical, and human issues and can be quite complex or unstructured. By definition, they do not have a unique, "correct" solution. In fact, such problems have almost an infinite set of solutions and a very wide variety of outcomes. A particularly frustrating aspect of unstructured problems is that two similar problems may not respond to the same solution in the same way. A common problem in management is a certain tendency on the part of experienced managers to apply last year's (or decade's) solution to this year problem for which it is no longer valid.

Solving such unstructured problems on a constant basis is much of what managers do and the ability to solve them is what sets apart the best from the rest.

Often what distinguishes the best managerial talent is the pursuit of three key objectives when dealing with such problems. The three objectives are achieving tangible results, promoting learning on the part of the manager and his or her organization, and building a larger sense of purpose or identification between the people who make up the organization.

6 Step Process

As their name implies, unstructured problems are difficult to deal with and do not respond well to many traditional decision analysis tools. The major difficulty lies in that such problems often require a combination of fact based data analysis and highly subjective and even intuitive judgements about aspects of the problem.

*Prof. Mike Rosenberg
General Management Department, IESE Business School*

Over the last 40 years, IESE Business School has been working with a six-step process for dealing with such problems. The process has been found to be robust in the widest variety of business problems and had an impact on literally thousands of executives and MBA students from around the world.



Six Step Process

- Problem Definition

A surprisingly complex first step is to determine the exact nature of the problem at hand. One part of this is to separate root causes from symptoms for example treating the infection and not just the fever.

A separate issue has to do with scope. For a specific manager, a critical issue is to define problems in such a way as to actually be able to solve them in terms of authority and access to data. It is simply too easy to maintain that all of the critical issues of the day are outside of one's personally ability to change things. One may not have any antibiotics available and therefore could say that since I cannot treat the infection, there is nothing I can do. In our view, however, the problem then becomes, what can I do without antibiotics to make a patient feel better? Perhaps cooling them down and treating a fever would make sense in this context.

In automotive terms a Country Manager of Honda once complained of their lack of diesel engines implying that his low market share was part of a company level problem having to do with diesels. Perhaps, he could have formulated the problem as what can I do to maximize share despite my lack of diesel engines?

- Criteria Selection

Criteria are those elements that will be used to distinguish between alternatives and to select one. The word selection is used because the key to successfully solving a problem is choosing which if all of the possibly important issues will really be the most critical in making a decision.

Normally the key criteria in any decision include some aspect of the tangible results one is looking for, some aspect of risk, and some items which deal with the human beings involved in the decision are they customers, employees, suppliers or some other people with a stake in the outcome.

- Alternative Development

Alternatives are the different ways one can go about solving the problem. Since they are an infinite number of alternatives for an unstructured problem, it is useful to do the analysis along the lines of several basic types of alternatives.

When moving to a new city, one could live in different neighbourhoods and buy or rent a new house. One could, for the same amount of money, buy a large house in a middle class neighbourhood or a small house in a wealthy neighbourhood. One could rent a house or perhaps an apartment downtown. The trick in developing alternatives is to be clear which are the most essential choices to make based on the problem as defined in step 1.

If the problem is ‘where to live?’ then the alternatives should probably be different neighbourhoods. In this example a second level of analysis would have to be done for the decision to rent or buy. If the problem, on the other hand is “what type of real estate transaction to make?” then the alternatives will probably be rent, buy and maybe something in between if such alternatives exist. In any case there will likely be a set of sub-alternatives within each alternative and these can be handles either as part of the Action Plan Creation in step 6 or formulated as a separate problem. It is worthwhile to invest some time in developing some major alternatives for consideration in such a way as to represent the most basic important of the choices involved.

An important aspect of the six-step process is that it is essential to select the criteria prior to developing the alternatives in order to limit the bias introduced. This is a reflection of how people tend to think. If one has already set up the alternatives as take a Management course at IESE Business School or a School in Paris or London, one might introduce the weather or “being in Spain’ as a criteria which will always be favourable for the IESE option.

A better approach is to do some serous thinking about which criteria are in fact most important and then to develop alternatives.

- Analysis

In the context of the six step process, analysis refers to looking at how the different alternatives can be evaluated using the criteria already selected. Some parts of the analysis may be highly numerical while others will be purely subjective. Typically a selection grid will be used to keep track of the results of the analysis as follows:

Criteria\Alternatives	Alternative 1	Alternative 2	Alternative 3
Criteria 1	++	-	+
Criteria 2	---	+++	+
Criteria 3	++	--	+/-

If criteria 1 in a specific decision was to be net present value over the 10 year life of an investment, one could imagine a detailed calculation supporting the analysis with an internal scale which explains that alternative 1 generates a value of over \$ 1 million U.S., while alternative 2 is -\$500,000 U.S. and alternative 3 about \$450.000 U.S. The point of the exercise is to clearly establish the relative attractiveness of the different alternatives with respect to the criteria.

In the same example, criteria 2 might be the trade union’s likely response to the new investment. Here, the analysis might be a conversation with the labour relations manager who expresses her opinion that alternative 1 will certainly lead t a strike, alternative 2 will clearly improve the climate in the plant and alternative 3 may have some positive impact.

At this stage no effort is made to rank order the criteria or give them different weights. That is the subject of step 5, taking a decision.

- Decision

As is seen in the example above, it is extremely rare to have clearly positive and negative alternatives in real life and most decisions require balancing good points with bad points and coming up with an 'optimum' solution. In fact, if an analysis produces a very clear-cut answer, it is likely that some key criteria, which would reflect negatively on a preferred alternative, were simply left out.

Here it is important to state that the six-step process is not a format for making managerial reports or for making recommendations. Many such reports, and particularly those made by management consultants, often stress only the positive aspects of a particular decision and that is not the purpose of the six-step process.

Instead, the purpose is give the decision maker a tool to look carefully at the different aspects of a problem and then to choose which of the criteria are really the most critical at this point in time. If a company is undergoing a complex labour contract negotiation and there is a managerial priority to make such a process go smoothly, then the best course in the example above would probably be to take either alternative 2 or 3 and not choose the alternative with the highest net present value.

What the process does do is to force decision makers or teams to deal openly and explicitly with all the issues involved.

- Action Plan Creation

The last and most important step in the process is to develop an action plan to implement the decision taken. Managers, as stated above, exist to make decisions which impact the world around them and their success or failure has to do with their ability to make things happen.

Using the six-step process in a robust way, the manager will have identified the key issues involved in moving their decision ahead as part of the process itself. The idea then is to develop action plan steps, which maximize the positive aspects highlighted by the analysis, and mitigate the negatives.

Going back to the simple example mentioned above, if alternative 3 was chosen, a key issue would be to work with the Labour Relations Manager to assure that the union will have a positive reaction. One could even go further with the example and develop a plan where Alternative 2 could be implemented as a contingency plan if in fact such a reaction is not forthcoming.

Two types of people, One process

What we have found in working with students and executives is that the six-step process is helpful in bringing together two very different ways in looking at the world.

In many educational systems, students are asked to choose at a relatively early age between studying Science or Liberal Arts. In some countries it is simply called Mathematics or Letters. In essence the systems recognize (or create) two types of people: those that see the world in terms of numbers, and those that deal with ideas and emotions.

Engineers, Financial people and accountants, and many business majors are trained to see the world in terms of numbers. They naturally tend to bring their numerical training to bear on virtually every problem they encounter. The problem with the mindset is that there are normally aspects of unstructured business problems, which either cannot be quantified at all or can only be done so at the risk of oversimplification. Another problem is that it is often necessary to make so many speculative assumptions that estimations become more like pure fiction and may not even deserve the term 'educated guesses'. Numerically oriented managers often fail to pay sufficient attention to those aspects of the problems that they encounter which do not lend themselves to quantification. People's reactions, political issues associated with a decision, and other highly subjective aspects are often ignored or considered as less important by such managers due to their 'natural' bias.

Creative marketing types, designers, human resources professionals, and others are taught to see the world in terms of forms, ideas, emotions, and feelings rather than numbers. This type of person is more likely to rely on a flash of insight, or intuitive grasp of the issues, to decide what to do in a given situation. In contrast with their more numerical colleagues, the danger such managers face is to simply not 'do' the numbers and simply go with what they 'feel' to be is the right approach.

The advantage of the six step process is that it can, if applied rigorously, effectively bridge the gap between these two ways of looking at the world and force the numerically oriented people to deal with the softer issues and also force the conceptual types to not only do whatever analysis is required, but also to make their leaps of faith explicit. Perhaps the greatest benefit of the process in the context of making group based business decisions is that it allows both types of people to actually communicate with one another in a positive, rigorous way.