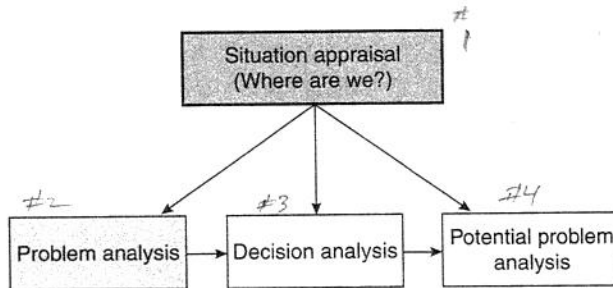


TECHNIQUE 3: KEPNER-TREGOE PROBLEM ANALYSIS



The Kepner-Tregoe³ (K.T.) problem analysis technique is one of the four components of the K.T. approach, which includes situation appraisal, problem analysis, decision analysis, and potential problem analysis. We will discuss problem analysis in this chapter and the other three K.T. components in Chapter 8.

The K.T. problem analysis technique displays information obtained by asking critical thinking questions in a unique way called the “four dimensions of the problem.” The four dimensions are what, where, when, and extent. In this technique, distinctions are made in the four dimensions as follows:

- What *is* the problem versus what *is not* the problem?
- Where does the problem occur versus where is everything okay?
- When did the problem first occur versus when was everything okay?
- What is the extent of the problem?

This kind of analysis is most useful in troubleshooting operations (Chapter 11) where the cause of the problem or fault is not known. Problems that lend themselves to K.T. problem analysis are ones in which an undesirable level of performance can be observed and compared with the accepted standard performance.

The basic premise of K.T. problem analysis is that there is something that distinguishes what the problem *is* from what it *is not*. The cause of the problem is usually a change that has taken place and produced undesirable effects. Things were okay in the past and now they’re not. Recall the example in Chapter 1 dealing with printing inks: The Bureau of Engraving and Printing changed to new printing machines and then found that ink on the new bills smeared when touched. The possible causes of the problem (deviation) were deduced by examining the differences found in the problem. In this case, the only deviation from the previous printing process was the new machines. The most probable cause of the problem is the one that best explains all the observations and facts in the problem statement. It turned out that the new machines were not putting enough pressure on the printing ink to penetrate the new paper, so it wiped off easily. The problem *was* the printing machines, *not* the printing ink.

The real challenge is to identify the distinction between the *is* and the *is not*. Particular care should be taken when filling in the "Distinction" column. Sometimes the distinction statement should be rewritten more than once to sharpen it enough to specify the distinction exactly. For example, in one problem analyzed by the K.T. method, the statement "Two of the filaments were clear (okay) and two were black (not okay)" was sharpened to "Two filaments were clear and two were covered with carbon soot." This **sharpening** of the distinction was instrumental in determining the reason for the black filament. Think in terms of dissimilarities. What distinguishes *this* fact (or category) from *that* fact (or category)? Making such a distinction requires careful analysis, insight, and practice to ferret out the differences between the *is* and the *is not*.

From the possible causes, we try to ascertain the most probable cause. The most probable cause is the one that explains each dimension in the problem specification. The final step is to verify that the most probable cause is the true cause. This step may be accomplished by making the appropriate change to see if the problem disappears.

The problem solver should also separate people's observations from their interpretations of what went wrong. A common mistake is to assume that the most obvious conclusion or the most common is always the correct one. (This point is a good place to start, but not necessarily to stop.) A famous medical school proverb that relates to the diagnosis of disease is this: "When you hear hoof beats, don't think zebras." In other words, look for simple explanations first. Finally, the problem solver should continually reexamine the assumptions and discard them when necessary.

When you
hear hoof
beats, don't
think
zebras!

The Four K.T. Dimensions of a Problem

Is, or is not?
That is the
question,
Watson!!!



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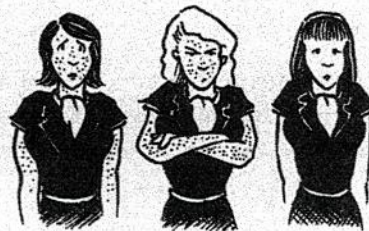
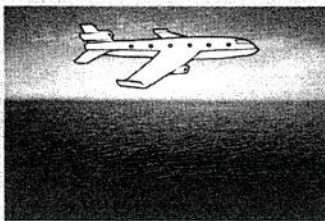
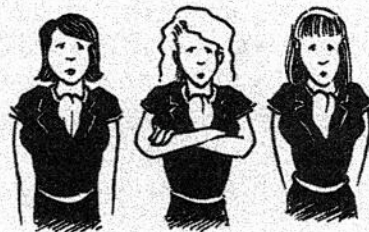
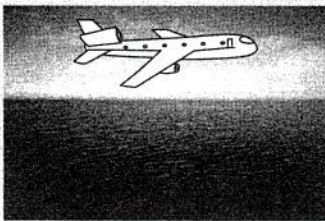
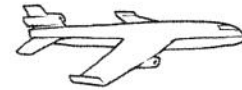
		Is	Is Not	Distinction	Cause
What	Identify	What is the problem?	What is not the problem?	What is the distinction between the is and the is not ?	What is a possible cause?
Where	Locate	Where is the problem found?	Where is the problem not found?	What is distinctive about the difference in locations?	What is the possible cause?
When	Timing	When does the problem occur?	When does the problem not occur?	What is distinctive about the difference in the timing?	What is a possible cause?
		When was the problem first observed?	When was the problem last observed?	What is the distinction between these observations?	What is a possible cause?

		Is	Is Not	Distinction	Cause
Extent	Magnitude	How far does the problem extend?	How localized is the problem?	What is the distinction?	What is a possible cause?
		How many units are affected?	How many units are not affected?	What is the distinction?	What is a possible cause?
		How much of any one unit is affected?	How much of any one unit is not affected?	What is the distinction?	What is a possible cause?

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Fear of Flying

A new model of airplane caused an unexpected issue when delivered to a major airline. Immediately after the planes were put into operation, many of the flight attendants developed a red rash on their arms, hands, and faces. The rash did not appear on any other part of the body, and it occurred only on flights that went over water. Fortunately, the rash usually disappeared in 24 hours and caused no additional problems beyond that time. When the attendants flew old planes over the same routes, no ill effects occurred. The rash did not occur on all the attendants of a particular flight, but the same number of attendants contracted the rash on each flight. In addition, those flight attendants who contracted the rash felt no other ill effects.



Continues