WHY IS TOP MANAGEMENT DIFFICULT TO CONVINCE?

By
John E. Snyder
The Boeing Company
Huntsville, Alabama

It is a considerable honor to give the keynote address of this THE SECOND CONFERENCE ON APPLICATIONS OF SIMULATION. The area of endeavor represented by the participants in this Conference is perhaps the most interesting, challenging, and rapidly growing on the American scene today. This situation is attested to by the attendance at this Conference (over 900 people are here), and by the response to the Call for Papers (well over 100 abstracts were submitted and there are over 80 papers actually on the Program). At the same time that dynamic growth in the applications of simulation is taking place many practitioners apparently are having difficulty convincing top management that simulation is a valuable planning tool and that there is a real place for it in corporate operations. The topic chosen by your committee to keynote this Conference, therefore, seems uniquely appropriate at this stage in the development of simulation application.

My topic is "Why is Top Management Difficult to Convince?" Before proceeding very far in an attempt to answer this question it seems appropriate that we first examine the assumption that top management really is difficult to convince. I will address myself to this question from two points of view. First, I will discuss the opinions of some people that may be considered authorities on the subject and, second, I will discuss some of my personal experience.

First, let's talk about the opinion of authorities. I got into the situation I am in today, standing here on this platform, through the invitation of Mr. Arnold Ockene of the IBM Corporation who is your Program Chairman for this Conference. He certainly must be considered an authority both on the basis of his work with the IBM Corporation and also as organizer and Program Chairman of the Conference. He obviously believes that top management is difficult to convince. In his letter to me confirming our agreement that I would be keynote speaker, he stated as follows:

> "Your topic will be 'Why is Top Management Difficult to Convince?' Most practitioners are convinced that simulation is a valuable planning tool but great difficulty is often experienced in communicating the virtues of this technique to management. Your experience at Boeing will provide valuable insight into the reasons for the existence of the credibility gap between simulation practitioners and upper management."

Do other authorities agree with Mr. Ockene? In best Operations Research style I conducted a survey. That's what we do to avoid taking a personal position on an issue. I questioned several simulation practitioners, several top managers, and one manager of a major computer installation. The quantity of responses that I received was disappointing but the quality was excellent. In response to the question, "Is Top Management Difficult to Convince?" my survey results provided an unanimous "yes" answer. Here are some of the typical phrases contained in the responses.

> "I know from personal experience that top management is difficult to convince."

> "Yes, I agree that top management is difficult to convince, but justifiably so."

> "Unfortunately, I can probably name on no more than the ten fingers on my hands those people who really believe in or understand this technique. In other words, it is still a matter of having to sell very hard this type of approach in the analysis of problems which seem to be naturally amenable to simulation."

> "In general, I would say that top management is skeptical about information generated by a computer simulation."

> "By the very nature of his job a manager should be hard to convince in any area in which he must make a decision and the higher the position he holds the harder he should be to convince. He is responsible to the corporation management or to the owners of the corporation for the consequences of each decision and his future career depends upon making more good decisions than bad decisions."

These opinions from people I consider authorities and whose judgment I greatly respect, confirm my own personal experience.

In my own work in this area we have had both successes and failures. The easy successes have come where 1) the problem was one which the top manager specifically wanted solved, and he 2) did not know of any other approach for the solution, and 3) the results confirmed his own intuition. The difficulties begin to arise when 1) the results do not match the manager's intuition, or 2) when the problem treated is one for

which the manager does not recognize that he needs a solution.

I have yet to find anyone who really feels that top management is not difficult to convince. It, therefore, seems that we have established an affirmative answer to the question, "Is Top Management Difficult to Convince?" and we can proceed to a consideration of "Why?", and further, "What can we do about it?" I will approach the subject by attempting to make a formal statement of the problem, followed by analysis of the problem as stated, and then some thoughts on how to solve the problem. I will wind up the formal portion of this keynote session with a brief summary of what I have said and then I hope we will have time for comments and discussion from the floor.

Problem Statement

We have established that it is difficult to convince top managers to use the results of simulation. Presumably the result is that many of these top managers do not use our simulation techniques. So what? Why is this a problem? Is the problem that simulation experts don't have the corporate power that they ought to? Or does this mean that the simulation practitioners don't have enough jobs? Or, somewhat more idealistically, does this mean that the simulation practitioners are not making the contribution to society that they ought to be making?

Gentlemen, if you think that any of these is a proper problem statement then you and I are not together! But don't think that I have advanced these problem statements facetiously. They are not facetious. We need to examine our own motives very, very carefully. It is very easy for a man to become so engrossed in his own work that he unconsciously subordinates the interests of the overall enterprise to those of his immediate project. This is especially dangerous where simulation is being applied directly to influence the course of a business, and is a trap that any of us can fall into. If our work is selfishly motivated it is almost certainly doomed to failure in the long run. In an attempt to recognize this situation and to bring the consideration of appropriate objectives from the subconscious to conscious, I will propose the following problem statement:

> "Because many managers do not use the results of simulation they do not obtain as good results from their managing as they should and therefore the enterprise suffers."

Thus, if the manager is involved with the design of a missile control system the use of simulation should be promoted because it will enable him to design a better control system. If the manager addressed is a business manager and the simulation in question is a management information system or a management control system it should be promoted because it will enable that manager to obtain better financial results. Neither the health and well-being of system analysts, the sophistication of their tools, the niceties of their methodology, nor any other practitioner-centered reason is a valid reason for the manager to accept simulation. The only valid reason for the manager to be concerned with the simulation is because it will help him to get better results from his management of whatever enterprise he is involved in. Accepting the statement — "Because many managers do not attain as good results from their managing as they should and the enterprise therefore suffers" — as a reasonable statement of the problem, we will proceed to analyze the problem and attempt to shed some light on why this situation exists.

Problem Analysis

It is now time to attempt to answer the question, "Why is Top Management Difficult to Convince?" The reasons may be divided into manager-centered and practitioner-centered reasons. First, I would like to consider the possible manager-centered reasons.

First among these is the situation where the manager does not understand the simulation work that is being offered. People have a strong tendency to be suspicious or fearful of things they do not understand. Top managers have formulated their own methods of making judgments and decisions. These methods must have served them pretty well or they would not have reached top management. They are, therefore, naturally reluctant to substitute the unknown.

A second possible case is that of the manager who understands the simulation, how the computer works and all the rest of it, but instead of looking at it as another tool with which he can work to achieve better results he sees it as a threat to his personal security. He fears that it may limit his freedom of action, restrict his authority, or even ultimately take his job away from him. I hope there are not many managers that are this insecure but I am afraid there are a few around.

A third reason is one in which the manager feels that the results are not really applicable to his task. This may be because the criteria or value-judgments used in the analytical work are not the ones by which he thinks his performance is really being measured and he may choose not to enumerate the real standards by which he is being measured. Unwillingness to verbalize the standards may stem from a recognition of, but disagreement with, his boss's standards. Inability to verbalize these standards usually stems from not having thought the situation through and may provide a real opportunity for a system analyst.

A final, and probably most common, manager-centered reason is that the manager has so many demands upon his time that he is unwilling or unable to set aside enough time to really listen to the system analyst's story. The chances are good that this organization is characterized more by reaction to events, i.e., "putting out fires", than by planning and controlling events.

Now, let's take a look at the practitioner. What are the practitioner-centered reasons causing failure to convince top management?

First of all, the practitioner may be unable to specify the problem that he is dealing with from the managers point of view. Most system analysts and practitioners developing and using simulation techniques live in a different world than top managers. The world of the practitioner is generally characterized by technical depth as opposed to breadth. Some, I fear, are in danger of learning more and more about less and less until they know everything about nothing. The top manager, on the other hand, must be characterized by breadth and cannot afford the luxury of a great deal of depth in the system analysts's area. This makes communication difficult.

Secondly, a great many analysts tend to be technique-centered rather than result-centered; whereas managers must be concerned with results. This is analogous to the old story of the surgeon who could comment, "The operation was a success. It's too bad the patient died". The manager (and patient) care little for the niceties of the surgical technique. They prefer a live patient after a clumsy operation, to a dead patient after a skillful operation. To bring this point closer to home I surveyed the titles of the 80 odd papers submitted for this Conference. Of these at least 22, or more than 25% have titles that are technique-centered rather than result-centered. More specifically, the titles of these 22 papers tell what is being simulated and not why it is being simulated. The revealing key words fall in three groups. These are:

"Simulation of _____", 16 papers;
"_____Simulation", 2 papers;
"Simulating the _____", 4 papers.

I found only one paper that used these words and went on to say ". . . for the Purpose of _____".

Another area worthy of mention is the use of technical jargon. The technical journals of America are probably the worst examples of communication that exist. The inescapable use of scientific terms is compounded by the authors' choice of four and five syllable words where two syllable words would do the job as well. I fear that this is often done deliberately in the attempt to appear intelligent or well-educated. Its effect, however, is to make the writing less effective and less useful. The usual manager has a tremendous amount of reading to do, and he will want to scan the material. If he can not get most of the message quickly, the chances are that he will consign the report to the wastebasket.

A fourth problem area is a tendency to present too much data to the manager. Through modern computer systems we have acquired the capability to gather and process fantastic quantities of data. We seem not to have acquired the commensurate capability to select and interpret the significant points. The result is that the manager receives so much data that he is unable to digest and act on it.

The next reason that I would like to bring up is incomplete staff work. Completed staff work is the study of a problem and a presentation of a solution in such form that all that remains to be done by the boss is to indicate his approval or disapproval by the completed action. It provides him with answers, not questions. It requires that the choice of the proposed course of action be made by the subordinate and is the result of his own best thinking. The final test is, "If you were the boss would you be willing to stake your professional reputation on the action you propose being right?" The greatest danger in presenting incomplete staff work is that the ideas may not have been fully developed and fail to sell for lack of clarity, or, worse, may have undesirable consequences that are obvious to the manager but have not occurred to the analyst. Completed staff work, though not infallible, helps to avoid these errors.

A situation closely related to incomplete staff work is the one in which the practitioner reveals a lack of confidence in his own work. This usually shows up through over-qualification of the conditions under which the results apply. He says, "The results apply if the data is good", "if the assumptions are correct", "if nothing unexpected happens", "if", "if", "if", ad infinitum. The result of this approach is to destroy any confidence the manager might otherwise have had in the report.

The opposite approach is equally damaging. I have observed situations in which an immature analyst has come to rash conclusions based on inadequate data and has attempted to pass off the results as firm and well founded as a basis for action. The manager who discovers this kind of staff work may lose faith for all time in the analyst.

Failure to sell is a problem that plagues a great many practitioners. The individual may have a tremendous depth of technical competence but be unwilling or unable to sell or just not see the necessity. Very few things sell themselves. If we wish to make others

change their behavior in response to our work, we must sell.

The practitioner may also fail to convince the manager because he has failed to establish his personal credibility. This occurs especially with managers who are strongly people-oriented rather than thing-oriented. It is essential that the practitioner acquire the confidence of the manager in him as an individual. That may be a much tougher problem than the related one of failure to establish technical credibility.

Technical credibility must always be established and it is often difficult because the kind of problems that are best attacked with simulation are usually very complex ones, and it is difficult to trace the logic and processes step by step in language that the layman can follow. There are a number of discrete steps that can be taken to establish the technical credibility of the work and these should be attempted. These include validation of the simulation through examination of the assumptions, the data quality, the logic, and the sensitivity of the results over the expected range of variation of these parameters. Also, wherever possible the simulation should be exercised on problems with known answers.

I'm sure these are only a few of the reasons why managers are difficult to convince. But hopefully we have touched on the most significant ones. Let's now take a look at what we can do about it.

Problem Solution

We have attempted to analyze the problem of convincing managers in terms of manager-centered reasons and practitioner-centered reasons. Let's look for solutions in terms of how we can change the managers and how we can change the practitioners. First, the managers.

Managers are changing and changing rapidly. Today more managers retire early and fewer continue managing into old age. The tremendous growth and expansion of American industry requires a constant input of fresh new managers from the bottom and causes them to advance rapidly to the higher echelons. Tremendous emphasis is being put on the education, both formal and informal, of managers to keep pace with the technical changes that they are faced with. New tools are constantly being made available for them to manage with. The managers are using the new tools and are finding them effective and are thereby changing their methods and techniques.

This changing of managers, however, is an evolutionary one over which the simulation practitioner has very little direct control. He must learn to work with the particular managers he is exposed to. If he expects to make a radical change in those managers he is probably going to be disappointed. Instead, he had better take a look at himself and his own ways of doing business and see if there aren't ways that he can make himself more useful and more effective.

First of all, he should learn to think like the manager does (not like the manager should). Then he can begin to review his own work critically from the managers point of view and understand what the manager will see as the weak points of his work.

Secondly, he must learn to talk the manager's language and should make a strong point of presenting both written and oral reports and recommendations for action in the kind of terms that the manager himself uses and is most comfortable working with.

Third, the practitioner should be solution-oriented not methodology-oriented. By this I mean that he should explain the action recommended and follow this with a logical explanation of why this is the right action in terms of the enterprise and its environment — not in terms of his fine methodology.

Fourth, the simulation practitioner should attempt to do completed staff work. He should make it easy for the manager to implement the actions that he recommends. Necessary directives, memos, etc., should be prepared in the smooth, previously coordinated with the managers staff, and be completely ready for his signature.

And, finally, the analyst must be sure that he is creating answers for the manager, not problems. The manager has more problems than he can handle effectively and is looking for people with solutions, not more problems. Better reporting will ease this situation somewhat.

A good report to the manager will tell him specifically what action is recommended and why; what alternatives were considered, and what were the consequences of the alternatives; what is the common sense logic of the action required; what are the limits or constraints within which the results apply; and how much confidence should he have in the results.

A verbal report should cover how the work was done only if the manager specifically asks for it. In a written report the "how" should be included but the report should be structured so that the manager can skip that section without losing continuity.

There are several qualities that the report should have. It should be clear, concise, factual, easy for the manager to understand, and should be both oral and written. Furthermore, the report should be prepared in the style and order that the manager, not the

author, likes. For example, some people are more comfortable knowing what the end point is and then how you got there. Others prefer an orderly one, two, three, sequential development leading up to the end point.

There are also some qualities that the report should not have. First, it should not attempt to teach. It should be action-oriented, not education-oriented.

Second, the report should not be erudite. It is more likely to be implemented if it is written in third grade language than if the manager has to use a dictionary to understand what it says.

Third, the report should not over-emphasize methodology. The manager should be ready to accept the investigators basic technical competence and should be more interested in the conclusions and actions required than in how the investigator arrived at those conclusions.

Summary

In summary, it appears that managers are often hard to convince relative to the usefulness of the results of simulation. Since they thereby may not be receiving full benefit of an effective management tool, it seems an appropriate problem to try and do something about it. The reasons for the managers skepticism seems to include general conservatism and perhaps some degree of management obsolescence, possible experience with poor analysis or analysts, poor reporting, and failure to sell the results. There seem to be several things the practitioners can do about it. These include learning to think like a top manager, critically evaluating his own work, doing completed staff work, better reporting, and selling results.