Engineering management report

Engineering

Engineering Management Case Study Section 9 Introduction Glenn Foreman, the president of Connivance Development Corporation Is considering submitting a bid for a property to build a condominium. However the property is designated to be used for single-family residences only. He has a plan to send a referendum to change zoning of property and the permit for the construction of the condominium. He also plans to hire a researcher to find out the probability of the referendum being approved.

Below are the important dates that play an important part in the decision making by Mr. Foreman Findings The president of Connivance Development Corporation decided to Invest on a $1 property to build condominiums. He also has plans to send a referendum bold to change the zoning of property which requires him to pay 10% down payment from the cost of property. Cost of property Cost of construction - $8, 000, 000 If the bid is rejected, the deposit will be refunded.

If the bid is approved but Mr. Foreman failed to follow through within six months the deposit will be forfeited. Mr. Foreman has plans to hire a market researcher in order to get a better estimation or reduction on whether his referendum will be approved or not. The cost of hiring a market researcher is $15, 000. Consider the flowchart presented in Figure 1. 2. Note that It combines the first three steps of the decision-making process under the heading of " Structuring the Problem" and the latter two steps under the heading " Analyzing the Problem. Let us now consider in greater detail how to carry out the set of activities that make up the making process may take two basic forms: qualitative and quantitative. Qualitative analysis is based primarily on the manager's Judgment and experience; it includes he

manager's intuitive " feel" for the problem and is more an art than a science. If the manager has had experience with similar 4 Chapter 1 Introduction Starting Potential for Job Alternative Salary Advancement Location 1 . Rochester $48, 500 Average Average 2.

Then, by using one or more quantitative methods, the analyst will make a recommendation based on the quantitative aspects of the problem. Although skills in the qualitative approach are inherent in the manager and usually increase with experience, the skills of the quantitative approach can be learned only by studying the assumptions and methods of management science. A manager can increase decision-making effectiveness by learning more about quantitative theology and by better understanding its contribution to the decision-making process.

A manager who is knowledgeable in quantitative decision-making procedures is in a much better position to compare and evaluate the qualitative and quantitative sources of recommendations and ultimately to combine the two sources in order to make the best possible decision. The box in Figure 1. 3 entitled " Quantitative Analysis" encompasses most of the subject matter of this text. We will consider a managerial problem, introduce the appropriate quantitative methodology, and then develop the recommended decision.

In closing this section, let us briefly state some of the reasons why a quantitative approach might be used in the decision-making process: 1 . The problem is complex, and the manager cannot develop a good solution without the aid of quantitative analysis. 2. The problem is especially important (e. G. , a great deal of money is involved), and the manager

desires a thorough analysis before attempting to make a decision. 3. The problem is new, and the manager has no previous experience from which to draw. 4.

Solution procedures can then be employed to find the best solution for the model. This best solution for the model then becomes a recommendation to the decision maker. The process of developing and solving models is the essence of the quantitative analysis process. Model Development Models are representations of real objects or situations and can be presented in various forms. For example, a scale model of an airplane is a representation of a real airplane. Similarly, a child's toy truck is a model of a real truck.

The model airplane and toy truck are examples of models that are physical replicas of real objects. In modeling terminology, physical replicas are referred to as iconic models. A second classification includes models that are physical in form but do not have the same physical appearance as the object being modeled. Such models are referred to as analog models. The speedometer of an automobile is an analog model; the position of the needle on the dial represents the speed of the automobile.