

features of natural processes and we are thus compelled to search for radically new forms of thought for their description." If Maxwell were alive today he might refer to science as a "mind expanding" force in our society. And there is abundant evidence that he would be right. Current thinking in science and technology not only affects our method of dealing with specific matters, but it has also given us a new outlook or insight into dealing with broader problems.

As a result, there is a vital two-way force at work for man today. For many decades now science has been "scoping down" on the objects of its investigation, breaking into greater numbers of disciplines as it seeks more knowledge about more things. At the same time technology has been applying the results of this greater amount of knowledge to larger and more complex systems. New interdisciplinary fields of science are also developing because we are discovering the importance of so many interactions that cut across specific lines of study.

What does this all mean to those not in science and engineering? Well, this type of thinking—combining both the rationality of scientific method with the interdisciplinary approach of systems engineering—is being adopted outside science and technology. It is influencing the thinking and actions of people involved in industrial, economic, social, and educational matters. It is helping all of us to see our world in a different light—one that will allow us to understand its complexities better and to deal with them more rapidly, more efficiently, and more totally. In this context the computer is playing and will continue to play an increasingly important role in our society. It makes possible the extensive use of the systems approach, of such vital management tools as cost analysis and operations research. The value of these special influences is just beginning to be realized, and over the coming decades they may be among our most important assets in dealing with our new world.

The other general point I want to stress involves a concept that could also have a great influence on the outcome of the next three decades and the position in which we will be by the year 2000—if we could get men and nations to accept it and act on it. Perhaps it can best be explained in this way.

Throughout the ages men, from peasants to kings, have believed and acted on the belief that their material world was like the proverbial pie of a certain size, that it contained just so much, and that the more it