COMMENT: OR - the way forward

BRIAN SHORROCK suggests what needs to be done to ensure that OR has a greater impact, and how OR Insight can help...

It is now over 25 years since I first became involved with operational research. Today, I am largely preoccupied with other activities, but I can still recall vividly my initial enthusiasm for OR, and this has in no way diminished over the intervening years. Looking back, my only regret is that OR has not had the impact that it should have had. As Professor Robert Dyson pointed out in the first issue of *OR Insight*, we are still in a situation where the vast majority of people have never even heard of OR.

The appearance of *OR Insight* is therefore a very welcome innovation. However, after reading the first edition, I cannot help feeling that it is slightly off-target. To be more precise, it should, I believe, be directed at 'converting' rather than at 'the converted'. In other words, the prime target should be management in industry and commerce, rather than OR staff. We already have, in the *Journal of the Operational Research Society*, a journal which is well able to handle the problems of the academic-practitioner interface - even though it may not have addressed them very well. What is missing is a journal that can be read by non-OR managers to enable them to see how OR can help; which reminds me of how I was first introduced to OR. In the late 1950s, an article on economic batch sizes appeared in a magazine called *Metal Working Production*, and I was asked by one of my directors to evaluate the implications. Within two months this had led to the formation of an OR group.

However, to return to the question of a journal for non-OR managers. Clearly, what I have written so far is aimed at OR rather than non-OR people, and should perhaps therefore appear in *JORS* rather than here, but I hope that what I am about to suggest will help to pave the way for the future of *OR Insight*.

So, what needs to be done? Well, firstly I would suggest that we need a simple definition of OR. If you speak to most managers in terms of "...a scientific model (of their business)...", they won't have a clue what you are talking about. Why not simply say "*the purpose of OR is to help management to determine its policies and actions scientifically, usually by identifying and quantifying the main factors involved*"? This may seem to be an academic issue, but it is not. If managers cannot understand what OR is about they will almost invariably treat it with suspicion. I say 'almost' invariably because

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once, many years ago, I found myself engaged on a particular project thanks to a manager taking the attitude, "...Well, we've tried everything else: we don't know what OR is, but let's see if *that* can solve our problem".

The problem then in question involved a boom welding machine, which, as its name suggests, is essentially a welding head driven along a boom. This had been used successfully in the USA but couldn't be made to pay in the UK. Two development engineers had spent three months experimenting with a variety of different welding rods and fluxes, but without success. When I was invited to look at the problem the fabrication manager had been warned that he would be sacked if the machine couldn't be made to pay within four weeks. I did a work-sampling exercise on the machine over a period of two weeks. This revealed that the machine was in fact welding for less than 10% of the time. What hadn't been appreciated was that, whilst hand-welders could move readily from one weld to another, the machine could not. It was heavily dependent on cranes and other services like grinders and de-scalers. So, by simply ensuring that the machine had priority on these services, the problem was resolved.

To return to the *Journal*, I believe that we must think in terms of 'theoretical' and 'practical' OR, rather than of 'academics' and 'practitioners'. The latter approach is unnecessarily divisive, particularly as many academics are skilled in practical OR and *vice versa*. Unfortunately, most of the published OR work is of a theoretical nature and usually consists of adding yet another parameter to already unmanageable equations. This is particularly true as far as stock control is concerned, which I find very frustrating. As a consultant I visit large numbers of manufacturers and many of them don't even have stock records (at first I found this somewhat surprising until I realized that most retailers, for example, do not keep stock records). This is typical of the enormous gulf which exists at present between the level of theoretical OR and commercial practice, and I sincerely hope that *OR Insight* can help to bridge this gap.

However, to do so it is essential that it should consist largely of practical articles aimed primarily at exciting the interest of lay-management. In many ways this is what *JORS* has attempted to do. However, the concept that contributions need not cover new ground is highly significant. There is a tendency to think that, because something has been published once, everybody knows about it; whereas the level of awareness of even elementary OR techniques is generally negligible. So, I hope that being aware of this will encourage contributions of a simple practical nature.