The growing sophistication of customers in both consumer and industrial markets is leading them to increase the demands they place on their suppliers. It is possible that the availability of the new technologies might be seen as requiring managers to develop new methods of management to meet this challenge. But in practice this is not the case. What is more important than technology is the way it is managed. Technology may change the emphasis of the manager's job but unless he carries out his basic task, to create and satisfy existing and potential customers, well then he will not be successful no matter how firm his grasp of technology.

Managers responsible for the running of manufacturing companies throughout the world are acutely aware that the nature of the pressures on their businesses are changing. The growing sophistication of customers and their awareness of what has been made possible by technology is leading them to increase their demands on their suppliers; requiring them to provide a better overall service in many ways. As examples of this better service we can see improvements in quality, the provision of a wider range and variety of products and the pressure to reduce prices.

And this trend is apparent not only in the more volatile consumer markets but also now in the once stable areas of industrial selling and marketing.

At the same time many companies are finding new aggressive and successful competitors entering what were once their protected markets.

Responding to, or trying to anticipate, these changing pressures these companies must of course maintain their profitability. But they find that the investment decisions they face to enable them to use the new technologies are increasingly ones requiring high levels of expenditure and at the same time ones which have to be taken in a situation where the pace of change can be so rapid that any decisions which are made may be overtaken before they become effective.

How can managers plan for the future of their factories against this background of fiercer competition, more demanding customers and high cost, high risk investment decisions?

They rightly feel that these new factories, which it is their responsibility to create, will somehow have to be fundamentally different from those we are more used to and familiar with.

Different in scale, different in layout, different in technology, different in the people, systems and organisation needed to run them.

But above all, different in the demands they will make on the skills, abilities and professionalism of their managers.

These challenges for managers in manufacturing are real. They are having to be faced now. If their companies are to become and remain successful they cannot be avoided.

But if things are changing, and will continue to change so rapidly, do the lessons of the past have any relevance for the decisions the manager has to take now in an attempt to shape the future? Where can he look to for help and guidance? If the lessons of the past cannot help, do managers have to develop a whole new theory of the way they must manage before they can begin to use the full potentials with which the new technologies have presented them?

I do not believe that this is the case. For whilst it may appear that the effects of technological change have been profound in many areas, in reality it has never been the technology itself which has had the effect, but the way it has been used or managed.

My view is that although it may not look the same, fundamentally tomorrow's factory will be
no different from that of yesterday. It and its technology must be managed, as it always has been, to achieve the objectives of the business.

It is true that companies probably need technology to enable them to meet these objectives and that changes in technology may enable them to alter the methods they choose to use. But the objectives themselves are the same now as they always have been.

"To create and satisfy existing and potential customers".

So new theories of management are not necessary, we over value technology if we believe it is so profound and significant as to force such a change. This being so I would argue that managers must put aside their obsession with technology if they want to make their businesses successful.

At worst technology is an irrelevance, at best it serves only to change the nature and scope of what is possible.

Translating these possibilities into practical reality is the responsibility of the manager and to do this he has to do much more than simply manage technology itself.

His true job is to manage the whole of the manufacturing operation so that it can be used to provide the business with an advantage over its competitors.

That is the challenge for management in the factory of the future.

Unfortunately we know that the way this challenge has been faced in the past, and is being faced now, shows that many manufacturing managers have not properly understood either the nature of their companies' objectives or the demands of those new technologies which they have attempted to use.

These unhappy experiences are leading many of the smaller and medium sized companies, having perhaps less experienced and able managers and whose size makes the risks of investment correspondingly greater, to regard technological change primarily as a threat to be minimised rather than an opportunity to be exploited.

They are afraid to make a decision because it may be the wrong one but afraid not to make a decision less they get left behind in the competitive race.

The evidence for these failings is evident in a number of areas.

Firstly the slow take up of new methods of management and control using computers. This has shown itself not only in relatively advanced areas such as CAD but also in much more fundamental ones such as materials management systems.

Techniques such as MRP have been around in a form and at a cost that has made them practical for a wide variety of companies for over a decade.

But the number of installed and working systems is small when compared to the number of potential users.

And more fundamentally most of these systems do not get beyond recording stock and carrying out gross explosions of parts, basically no more than simple mechanisation of what was always done by hand. The companies using them have not found it possible to move into the other areas that the software offers such as capacity planning or WIP tracking, or indeed the full and proper use of MRP itself. Equally apparent is the situation where a company has attempted to install these more advanced features and failed, either by simply taking too long to carry out the project and letting it eat up too many resources or by reaching the point where the system operates but cannot cope with the real complexities of the business.

This situation is not only to be found in small companies with inadequate resources but equally in large ones who should have known better.

Thirdly, there is the lack of enough people qualified with the right skills to enable the new technologies to be implemented. There are too few systems engineers, electronics and software specialists.

Now none of this is new. All of us working in or with manufacturing know first hand that these problems exist.

But what we must do is decide the lessons which can be learnt from these failures and use them so that our factories of the future can be managed better and more effectively than those of the past.

I'd like now to draw out what seems to me to be the three main conclusions from the examples I have given before I go on to talk about what needs to be done if this situation is to be remedied.

In summary the manager:-

a) had lost sight of what they were trying to achieve;

b) did not understand the demands that changing methods would put on the rest of the organisation;