Penyampai : TAN SRI DATO SERI AHMAD SARJI BIN ABDUL HAMID
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Terlebih dahulu saya ingin merakamkan ucapan terima kasih kepada pihak penganjur atas kesudian menjemput saya untuk memberi ucapan pembukaan bengkel Managing the Dynamics of New Technology: Issues in Manufacturing Management. Oleh kerana adanya tetamu iaitu penceramah dari luar negera bersama kita pada pagi ini, izinkan saya memberi ucapan dalam Bahasa Inggeris.

Today, the manufacturing sector in Malaysia is the most rapidly growing sector, its share of GDP rose from 26.9 per cent in 1990 to 28.8 per cent in 1992. The manufacturing sector will continue to expand in the coming decade. However, in this era of intense global competition, Malaysian manufacturers need to produce even better quality and more competitively priced products and services with prompt and reliable delivery dates, providing good after-sales service and should be flexible enough to meet the rapid changes consumer tastes and hence product design.

In order to keep up with the competitive pressures generated by this very dynamic market environment, a constant flow of new product innovations and technology, appropriate to local needs, is required.

Technology, especially the new and emerging technologies, is one of the key competitive tool at the command of the winners, and losers, in today's global market place. It is generally acknowledged that ultimately, the most important competitive weapon is the skillful management and deployment of technology resources. This is why the management of technology on a global scale has become a strategic issue of tremendous importance to leading technology-based companies.

Thus, the holding of this workshop is most appropriate. It will be the most appropriate occasion to discuss the issues concerning the acquisition and implementation of new technologies so that we could have a better understanding of the implications and understand the skills needed to meet the challenge of managing new technologies.

Manufacturing automation is one of the new technologies which is based on the use of computers and micro-electronics. It is becoming very widely used in industrialised countries and newly industrialised countries.

Current areas covered by Automated Manufacturing include Computer Aided Design (CAD), Computer Aided Manufacturing (CAM), Robotics, Computerised Numerical Controlled (CNC) Machines, Flexible Manufacturing Systems (FMS), Computer Integrated Manufacture (CIM) and Advanced Production Management System such as Manufacturing Resources Planning (MRP) and Just-In-Time Techniques (JIT). Today, these technologies are being used for designing, production and manufacturing resource planning and inventory control.

Technology is more than just machines and equipment.

It consists of three major components; hardware - such as machines and robots; software - that is knowledge of how to use the hardware or machines; and "brainware" - that is the reasons for using the technology in a particular way. Thus in adopting any technology, more so new technologies, a proper assessment, evaluation and study has to be done.

Top management in any company has to focus on the reason for considering new manufacturing automation technology for their products. The critical factor to identify is the intended use of the new automation system to be acquired. It may be acquired because existing machines or systems are incapable of handling the volumes that will be required in the future. Then the company is facing a straightforward capacity-addition situation and can handle it as such.

Alternatively, the company may be replacing one machine or system with another. Again, if the aim is simply to become more efficient, then the company is facing a straightforward efficiency- improvement situation. An example of this is the replacement of welding teams with a robotic welders; the welder teams will transferred to other tasks within the same company. Not only will the cost savings be significant, but consistency and quality of welds will be much improved too.

On the other hand, the acquisition may have little to do with increasing the capacity or efficiency of a particular operation. Long term strategy planning may have forced the realization that drastic changes must be made in the company's products - in the mix, their volumes, or their design - that cannot take place using existing equipment and processes. Thus, the acquisition of technology is deemed necessary for the company to achieve its goals. Note that the emphasis here is now on effectiveness, not efficiency as has been the case with manufacturing in the past. In this case it is clearly not a straightforward replacement or capacity-addition decision, but rather a strategic one.

In order to successfully implement the introduction of Advanced Manufacturing Technologies such as CIM, the company must first undertake a thorough evaluation. In introducing such technologies, the various elements of manufacturing activities must be properly integrated so as to achieve flexibility, to improve quality and productivity. Besides that, CIM system cannot be purchased off- the-shelf, since `effective systems integration' is unique to each company.

Therefore, to gain the full benefits of CIM, a company may have to change its manufacturing infrastructure, as well as its manufacturing structure. This indicates that the physical plants, its facilities and resources as well as the attitudes and knowledge of its employees will be effected with the changes. It may call for a new organisation structure, which may be top heavy, with the need for more highly qualified personnel such as engineers as compared to the production operators.

From the above, we can conclude that all of these are really about management. There are many tasks need to be done during the planning, acquiring, implementing and integrating the new technology.

For Malaysia, as with most of the developing countries in Asia, while still in the process of using existing manufacturing technologies effectively, efforts must be made to prepare ourselves to face on-coming challenge, since no country can afford to remain immune to this global phenomenon of technology change. We have established the Steering Committee of Advanced Manufacturing Technology to oversee the development and deployment of automation technology in manufacturing industries.

SIRIM has also established the Advanced Manufacturing Technology Centre. In a nutshell, the aim of the Centre is to acquire, assimilate, adapt appropriate manufacturing technologies for transfer and application in Malaysian manufacturing environment, in particular for adoption by small and medium scale industries. Although the term advanced manufacturing technologies brings with it connotations of robotics, lasers and high technology manufacturing, the real intention is to bring these seemingly high technologies for application in the manufacture of products those that we are already producing, but to be able to manufacture them more efficiently, at lower production cost, with higher productivity and better product quality.

Current research emphasis is in the area systems integration and automation, mechatronics, assembly technology, circuit design and software development.

We are setting up new facilities. A new laboratory costing RM8.5 million is under construction and due for completion in mid- 1995. New equipment have been ordered and some are already delivered and more will be order for delivery as soon as the new laboratory is completed.

Let me end by expressing my sincere thanks to the resource person, Prof. Dr. Hamid Noori, for his willingness to conduct this workshop. I also thank co-sponsors - INTAN, CMTS Sdn. Bhd. and SIRIM. I wish all of you a fruitful workshop.

Dengan ini saya dengan sukacitanya mengisytiharkan Bengkel ini dibuka dengan rasminya.