

9.1 The Overall Performance of R&D activities in Malaysia

The overall picture of R&D activities in Malaysia in 1998 appears to be very encouraging, despite the economic downturn experienced by the country. All the sectors registered significant increases both in terms of R&D spending and numbers of research personnel as well as time devoted to R&D activities. As observed in the previous study in 1996, the private sector remained as the larger contributor to R&D expenditure compared with the government sector.

The R&D performance of the GRI and IHL sectors has improved considerably. Increased R&D funding for both sectors clearly indicates higher commitment among research personnel and academic staff to carry out R&D projects. While the Federal Government provides most of R&D funding for the GRI and IHL, additional funds from the private sector is equally important. To date, the level of collaboration leaves much to be desired. A rigorous effort must be taken by the public and private sectors in finding ways to forge a more effective and meaningful collaborative partnership between the two parties.

It is projected that the year 2000 and beyond will continue to witness a greater degree of involvement in R&D activities particularly, within private sector. As the economy of the country recovers, increasing the awareness of the importance of R&D investment for the private sector will be crucial for increasing R&D activities of the country. This survey reveals that there seems to be lack of awareness within the private sector on the provision of government R&D incentives, and this has somewhat affected some organisations in the private sector from pursuing R&D more actively. As such, promotional efforts should be increased in order to ensure private sector is better informed on the availability of those incentives.

9.2. Policy and Goal Setting in R&D

Research and development can no longer be carried out at random but it should be viewed as normal and compulsory investment that could bring about profits in the long term. Without investment in R&D, Malaysian companies would not be able to be independent in the future and would continue to depend on foreign technology, which would decrease our competitiveness.

As such there is a need to have a clearer focus on the management and policies on R&D. Long term R&D plans for the country and targets need to be set and prioritised. It is of paramount importance all sectors namely government agencies, public corporations and private industry be involved during the formulation of such policy, in order to develop a comprehensive policy which incorporate all views from these sectors. The policy should address all aspects of R&D such as financial investment, infrastructure, research priority, incentives, personnel requirement as well as co-operation between sectors both at national and international level.

This study indicates that there is a severe shortage of manpower in research and development (7 per 10,000 workforce), and as cited by the respondents to this survey, the lack of skilled manpower in research is a main factor that hampers R&D throughout all sectors. In order to achieve a substantial increase in R&D activity, human resource development for R&D should be given special attention.

9.3. Total Quality Culture in R&D

In the new millennium, Malaysia should strive to emerge as one of the competitive nations in the world. To achieve this, Malaysia must create new markets by providing products and services through incorporating leading-edge technology and tries to find new applications for existing technology.

Given the fact that the success of R&D in a organisation depends on its ability to develop and produce new products that customers want, the R&D organisations and its culture must change. Responsiveness to changing customer needs must drive the R&D organisation. Thus, the need for total quality in R&D becomes increasingly important. The total quality philosophy prepares the research personnel for positive change through continuous improvement, by motivating and energising them and empowering all within the R&D system.