

SPEECH BY: DATO' SERI DR. MAHATHIR BIN MOHAMAD
(PRIME MINISTER)

EVENT: THE INTERNATIONAL INVENTION, INNOVATION, INDUSTRIAL DESIGN AND
TECHNOLOGY EXHIBITION (ITEX'98)

VENUE: SUNWAY PYRAMID CONVENTION CENTRE, SUBANG

DATE: 10/10/1998

TIME:

I am delighted to be here today on the occasion of the International Invention, Innovation, Industrial Design and Technology Exhibition or ITEX 98 and I would like to thank the joint organisers -- MINDS and SIRIM - for their invitation. I am pleased to note that since its inception in 1986, MINDS has played a significant role in nurturing and promoting Malaysian inventors and inventions. The achievements of Malaysian inventors at this year's prestigious Geneva International Exhibition of Inventions, where we emerged with the highest number of awards, demonstrate that our creative talents are among the best in the world. The challenge before us, therefore, is to harness our creative talents for productive purposes. Given our present economic predicament, this task becomes all the more urgent.

2. As we approach the next millennium, we are increasingly being made to realise that ultimately it is the creation, mastery and application of modern science and technology (S&T) that distinguishes the advanced countries from their developing counterparts. But this gap in scientific prowess between the North and the South is of recent origin. While the Chinese, Indians, Arabs and Persians led an unbroken succession of Asian domination in the sciences from the 6th Century on, the West began to excel in S&T only from the 17th Century onwards. The decline in Asian S&T can be attributed to their less systematic approach to R&D and the application of Science and Technology. Now many in the developing world have assumed that R&D and the application of S&T is the monopoly of the advanced countries and that the developing countries could live off the results obtained by others. However, transfers of technology can never be complete or automatic. The capacity to develop indigenous applications from available information must depend on the skills of the recipients in the developing countries. Without this indigenous skills foreign technologies will not be of much use.

3. We in Malaysia are convinced that investments in knowledge-seeking activities such as S&T and development

of scientific talent are not a luxury. Instead, they are the pre-requisites for our future well being. Accordingly, we have embarked upon the development of the MSC to ensure that Malaysia is not a mere spectator in the rapidly developing I.T. sector. Despite the economic problems that we are currently experiencing, the Government remains committed to the progress of the MSC and other related activities aimed at enhancing our capacities in I.T. We are steadfast in our quest for mastery of the new technologies and are determined not to allow the current hiccups to impede our skills acquisition in these technologies. Indeed, more than anything else, the current externally induced shocks have jolted us into realising the need to generate more high value added goods and services in order to enhance the competitiveness of our economy.

4. Inventing new products, processes or services is only possible if business is prepared to invest in innovative and creative Research and Development. Without such investments, businesses are actually condemning themselves to rapid obsolescence or, worse still, extinction. Nothing can be more dangerous for companies than to treat investments in R&D as a peripheral item. To be in business is to be in the business of innovation. Those who fail to innovate will perish. A recent MIER survey revealed that the majority of Malaysian manufacturing firms interviewed have maintained their expenditure patterns on technical development activities including R&D. This finding is indeed encouraging. More than ever, R&D activities are critical to ensure that firms are well placed to deal with the rapid pace of technological changes as well as the uncertainties of the economic environment. Many will believe they are incapable of inventing or innovating the way that people in advanced countries do. This lack of confidence is without basis. By systematically examining the product from every angle, invariably ideas will form about what can be done to improve it. As the habit of critically examining everything develops, new ideas are bound to surface.

5. The events of the past year have been extremely chaotic and painful to us. We suddenly find ourselves seemingly helpless and unprepared to handle the situation brought about by others. Most of us tend to handle the new situation in the orthodox way. In other words we are not inventive. We are not even willing to question conventional wisdom, believing that the usual way must be the correct way.

6. Yet we must all realise that we are not dealing with the usual situation brought about by the usual way of doing things. Currency trading is not quite new but

the advance of technology has changed completely the way currency is traded. They no longer have to carry cash or even financial papers to exchange for the desired currency. Through the computers vast sums of money can be transferred immediately from one end of the earth to another. The result is instantaneous changes in exchange rates which makes any prior calculation regarding cost impossible. Businesses have to resort to hedging i.e a form of insurance, in itself an invention to cope with rapid changes in exchange rates.

7. Faced with these new ways of trading currencies the standard methods of dealing with exchange rate volatility cannot be applied. Increasing interest rates, crunching credit, balanced budget, higher taxes and all the other prescriptions of the IMF will not work. And indeed after trillions of dollars have been lost and millions and millions have been thrown out of jobs and forced to starve and to beg, the IMF itself admitted that the standard remedy does not work.

8. So what will work? A Malay proverb says "if you lose your way, go back to the beginning". To invent new ways of doing anything it is worthwhile to reexamine the old ways to identify their strength and their faults, and then to modify or innovate the old ways.

9. This is what Malaysia did. In the old days the value of money was determined by the value of gold. Then came the fixed exchange rate of the Bretton Woods regime. Going back to gold is not practical. But the fixed exchange rate of Bretton Woods had obviously enabled the post-war economic recovery and subsequent worldwide prosperity to take place. It did not fail because the rates were fixed. The Bretton Woods regime failed because major developed countries reneged on their promises, because they devalued their currencies in order to become competitive, in order to overcome their mounting cost due to excessive wage demands. If they had kept wages and incomes under control they need not have devalued, and the Bretton Woods fixed exchange regime would continue to prosper the world.

10. Having identified the true cause of the failure of the Bretton Woods formula, the idea of using a fixed exchange rate in order to achieve economic recovery becomes more acceptable. But one country by itself cannot bring back the fixed exchange rate system of the world. The obvious need is for us to develop a way of using a fixed exchange rate for just one country irrespective of whether other countries will accept it or not. The answer lay in internalising the currency, in rendering the currency illegal outside the country. No one other than people operating businesses within

Malaysia need to accept the exchange rate fixed by the Government. Outside of Malaysia other currencies will be used. Thus foreign trade will be conducted entirely in other currencies.

11. There are of course many details to be attended to and many problems to be resolved. The important thing is to accept that we are dealing with an unusual situation in which the usual way of doing things will not work. We have to invent radical and unusual ways in order to deal with an unusual situation.

12. The fixed exchange rate devised by Malaysia is inventive and innovative. Turmoil is now engulfing the whole world. The rich countries which had smugly declared that the currency turmoil of East Asia would not affect them are now finding that they are not safe from currency traders and their destructive activities. The failure of the Long Term Capital Management hedge fund has forced the great western Governments to look more closely at currency trading. Now even the IMF has admitted to a need to regulate currency trading. Clearly, necessity is the mother of invention.

13. Inventiveness in dealing with economic and financial management is no different from inventiveness in other fields. We do not know exactly when the wheel was invented. Of course we do not need to invent the wheel all over again. But we do know that since the wheel was invented, its effectiveness and applications have been extended into numerous fields. The crude solid round wooden discs which initially facilitated the movement of the equally crude box-shaped carts have metamorphosed into the pneumatic-tyre cushioned, ball-bearing based wheels for all modern vehicles including the huge aircrafts. All this progress is the result of observation, study, innovation and inventing improvements in order to get better results. It is the result of not being satisfied with what has already been achieved, but instead constantly and tirelessly seeking to improve.

14. Orthodoxy will cause stagnation. Conservatives never progress. Those who fear change will be condemned to wither where they stand. In this modern world the rate of change will increase. Failure to move with the times will leave us receding into the background as things speed ahead of us. To be inventive involves a certain frame of mind, a willingness to be critical of the present, to seek ways of changing it for the better.

15. There was a time when inventing was the preserve of born geniuses. It seemed to society that these people were somehow different from others. They were

magicians. They were gifted, it seemed. Others could only watch and wonder.

16. But today inventing is for everyone. Systems and methods have been devised which enable everyone to invent. Research and development is as common an activity as anything else that we do in Government or business. Personnel are chosen and funds allocated. The field of research and the objectives are defined. And then very systematically the possibilities are examined, serially and methodically.

17. Testing equipment and instruments of every kind are available for inventors to find out whether their ideas and devices will work or will not work. Much of the testing processes have been speeded up so that less time is consumed in order to determine whether the inventors are on the right track or not. If not then other directions can be taken and tests carried out again.

18. Careful recording of data at every stage ensures that the processes can be repeated any number of times. Computers have made data recording and simulations easy and cheap. Non-destructive testing is now much more common since the advent of computer simulations.

19. Such are the facilities and methods of devising and testing that are available today that inventions are no longer few and far between or are confined to geniuses. Every year tens of thousands of new discoveries and inventions are made. Off and on some epoch-making discoveries or inventions are achieved. Some of these are achieved by accident as in the case of the drug Viagra. Some are no more than the results of tedious and meticulous serial experimentation and observation.

20. It would seem that the number and the advances in innovation and inventions are determined by the budget allocated for R&D. There are dedicated research laboratories all over the world but their achievements are dependent on the amount of funds and the number of personnel employed. There will still be geniuses but there is no longer any magic in inventing.

21. No one has a monopoly of the skills of inventing. If the facilities and the funds are available then results can be quite predictable. And so many scientists from developing countries have been found to be as capable or even more inventive than those from developed countries when they migrate to the rich countries where the facilities and the funds are readily available.

22. The investment in R&D is often regarded as wasteful

by bureaucratic budgetary officers. The stress on direct returns by these officers often results in researchers being unable to get the necessary funds. Much talent would go to waste simply because the returns on investments in research are difficult to quantify. This is especially so with basic research. Applied research is perhaps easier for bureaucrats to be convinced of the need.

23. However for a nation basic research is important. Many researchers are quite incapable of recognising the applications that their research results can be put to. But others will have the capability to put the results to profitable use. Basic research must therefore be encouraged through Governmental finance and encouragement so that the private sector can follow up with applied research. Although basic research may not show commensurate returns, the applications by the private sector can result in much wealth being generated. In the final analysis the nation would have gained indirectly much more than the outlay in basic research.

24. Clearly the importance of research and development, the importance of innovation and invention cannot be over stated. The level of technological and scientific achievements of modern society is the result of such activities. The rate new discoveries are being made is increasing by leaps and bounds. Where before new discoveries and even new innovative applications were few and far between, today they are being invented with amazing speed. Such are the new discoveries and their applications that the shelf-life of new products have been reduced to days rather than years or months. In the telecommunication field innovative new products resulting from research and application of new inventions are pouring out at an amazing speed.

25. Developing countries may believe that research and development are for the rich only. This is wrong. Developing countries can do quite a considerable amount of research in fields particularly suited to their conditions. Since most of the research and the products are from the rich countries, and these countries are invariably found in the temperate climate, the products are not really suitable for use in the hot and humid tropical regions. The automobile for example is designed for the cool dry climate of the north. They are not meant really for the tropics. They should therefore lend themselves to research into improving their performance in the tropics. There are literally tens of thousands of products invented and designed for the temperate climates which need to be modified and adjusted for the hot humid tropics. Here is an area

suitable for research in the poor countries of the south. The cost is not too high and the environment is free for the purpose of testing. There must be a lot of special attributes of the poor countries which lend themselves to research and development, for the curious and the inventive.

26. Inventiveness is the result of a culture which encourages curiosity, promotes the desire to learn about how things work and how improvement can be made to make things work better. This culture of curiosity and desire to improve things will lead to research and development and inventive skills. Inventing is like any work that is done by man. Everyone can do it but some can do it better than others. But if it is done frequently and with persistence the culture will be productive of inventions and innovations. A stodgy conservative culture will not be productive of inventions.

27. I have spoken about the importance of engaging in creative activities such as R&D, of having an open mind, on facing discontinuities and the importance of self-belief. The road to our future will not be straight. There will be impediments ahead of us. But, we cannot embark on this journey carrying the assumptions of our past. In a non-linear world, linear thinking is obsolete. We need to be highly agile, flexible and innovative in order to circumvent these imponderables obstructing the road to our destination. Given our collective intellectual strength and stamina we can make the leap from the known to the unknown. Moving from terra firma to terra incognita requires harnessing our creative energies. I am confident that MINDS through its activities such as the Inventors' Foundation and exhibitions such as today's will help to contribute towards tapping our creative talents for the benefit of the nation. With these remarks, Ladies and Gentlemen, I have great pleasure in declaring this exhibition open.