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BUILDING A CULTURE OF INNOVATION IN MALAYSIA : Successes, Strategies and Challenges

Keynote address by
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Putrajaya

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PDS13: Building a Culture of Innovation in Malaysia: Successes, Strategies and Challenges

INTRODUCTION

Innovation generally refers to the creation of better products, processes, practices or technologies that benefit society as a whole. A culture of innovation is an essential component of a knowledge society and is strongly linked to productivity and prosperity. A society that is well-governed, that prepares its young people through education for both citizenship and work; is strong in science and technology, and has established solid links between education, research and industry, is in the right direction to become an innovative and prosperous society.

A knowledge society is one that not only creates, but shares and uses knowledge for the prosperity and well-being of its people. The Prime Minister of Malaysia has been quoted thus: "Making innovation acceptable to society first is important before each member can make it a part of his or her daily life. Making innovation our culture can help bring Malaysia to a high level of transformation and development for greater success in the future." Innovation, in other words, must be coupled with social purpose to generate benefits to the community and country.

Based on the INSEAD Global Innovation Index, Malaysia was ranked number 28 in the 2009-2010 ranking. With the efforts currently being undertaken by both the public and private sectors, Malaysia is anticipated to rise up higher in the global innovation rankings, in line with the Prime Minister's vision of a high-income, knowledge-based nation by the year 2020.

SUCCESS STORY: INNOVATION IN GOVERNMENT

Malaysia is among the leading countries in the developing world in the implementation of huge e-government programmes. This is made possible due to the vision and support from the leadership of the country and generous allocations for the development of the ICT sector in general and e-government in particular. As early as the 1990s, Malaysia had embarked on several initiatives to improve the state of governance and service delivery systems through the application of ICT technologies. One of them was the introduction of a public service network (PSN) that enabled post offices throughout the country to act as one-stop bill payment centres for the renewal of various licenses, stamping, and payment of road tax for motor vehicles, and bills payments to private service providers such as Telekom Malaysia and Tenaga Nasional Bhd.

The establishment of the Multimedia Super Corridor (MSC) in 1996 was a major landmark in Malaysia's drive for e-government and improved service delivery. The provision for online services has made a fundamental difference in public access to government information and facilities. The old systems characterized by rigidity, long delays, unnecessary complexity, and inconvenience is being replaced by a better system in terms of faster access, reduced cost, and public ease and convenience. In addition, the Web sites maintained by most public agencies not only provide information about their functions, services, activities and programmes, many of them also offer feedback options, thereby allowing the public to express their views, needs and problems.

STRATEGIES

The Malaysian government has made innovation and creativity central to the nation's economic growth and prosperity. This is evident by the establishment of the Special Innovation Unit (UNIK) in the Prime Minister's Department in 2010 to promote innovation, as well as the National Innovation Centre in 2009 and the Yayasan Inovasi Malaysia (YIM-Malaysian Foundation for Innovation) in 2008.

The YIM describes grassroots or cultures-based innovation as one of the three key areas of innovation. The other two are education and industry. Innovation in education is often a significant improvement, because education itself requires a mastery of the established or old knowledge prior to the creation of something new. Innovation in industry boosts competitive advantage and enhances productivity.

Several drivers of innovation have been identified based on the experience of the world's innovation leaders. Manufacturing activity is one of the important elements as it plays a key role for not only the development of an economy but also for innovation. It drives new thinking and innovation – this is proven by the fact that all the innovation leaders are manufacturing- driven economies. Emerging economies like Malaysia must strive to leverage on its manufacturing prowess to push for higher innovation.

Another important driver to innovation is the tie-up between universities and industries. Research labs in universities are among the biggest drivers for new thinking and innovation as evidenced by the success stories in many countries. For instance, over 2100 international patents were filed by US universities in 2010, which is the highest compared with any other country.

CHALLENGES

Creating an innovative culture is not an easy task. The most challenging is to change the mindset and discipline of the society. The people must be able to work together, take risks and be capable of persisting through failures. In addition, the government, universities and industries should derive a huge sense of pride and honour among innovators, with innovation becoming the mainstream focus for the whole society.

Significantly broadening public access to ICT and bridging digital divides represent major challenges for Malaysia. Initiatives by the government to allow Employees Provident Fund (EPF) contributors to withdraw a portion of their savings to purchase computers, and civil servants to get interest-free computer loans are steps in the right direction. Likewise, the initiatives to enhance community access to the Internet through publicly provided facilities are commendable attempts to close the access gap between urban and rural areas, as well as across income levels. However, much more needs to be done to widen public access to e-government and Internet facilities in other remote areas. While infrastructure is critical, people also need awareness, skills, and motivation to utilise such facilities, and to leverage on them to produce value-added products and services, as well as to generate fresh ideas.

QUESTIONS TO THINK ABOUT:

- What are the ingredients of an innovative society?
- What is the role of leaders in creating and nurturing a culture of innovation within a society?
- What is the role of the corporate sector and universities in promoting innovation?

- What are the challenges faced by universities in promoting innovation?
- Can innovation really be achieved through government top-down plans and policies?
- Can the innovation process be managed? If so, what is the best stewardship model for the process of innovation?
- What are the most effective methods of inculcating curiosity and love for knowledge – the two essential ingredients for an innovative, progressive society?
- Is Malaysia's education system an appropriate platform for the growth of creativity and innovation?
- Can "old dogs learn new tricks" – what are the most effective ways of changing mindsets and overcoming fear of the new?

KEYNOTE SPEECH

YBhg Tan Sri Emeritus Prof. Datuk Dr.
Augustine S.H. Ong
President of MINDS

Tan Sri-Tan Sri, Dato'-Dato', *Dif-Dif yang saya hormati, Tuan-Tuan dan Puan-Puan* and members of the media. First of all, I would like to thank you for the invitation and for giving me the privilege to talk about this topic "Building a Culture of Innovation in Malaysia". This is a great honour for my society, MINDS "Malaysian Invention & Design Society". Selamat pagi dan salam sejahtera.

The topic given to me is "Building a Culture of Innovation in Malaysia". This is an area with which I am very familiar, so I will talk to you based on my personal experiences in innovation as well as various real achievements which have been made over the years. Later on, I will conclude by discussing some of the facts or issues or points to go forward.

Now, I will start my lecture with a series of cartoons and pictures (showing slides). This picture was taken in 1994, more than 17 years ago when I was with *Yayasan Rekacipta Malaysia.* We invited Professor Stephen Hawking from Cambridge and he came. He had the privilege of meeting Tun Dr. Mahathir twice. He was also given interviews and the opportunity to give lectures in Ipoh. He is the Lucasian Professor of Mathematics. He runs a department there, gives lectures and so on. He lives a full life and he is an inspiration.

Singapore had thought that they will be the first to host him. But we "got" him first. In fact when he was invited, Singapore wrote to us asking, "Can you bring him to Singapore?"

I said "No, if you want to see him, you come to Malaysia".

As you know, Professor Stephen Hawking is on a wheelchair and only his brain and fingers work.

After that we brought Professor James Watson. We wrote to James Watson, a Nobel Laureate, who discovered the double helix and he came. But of course he was mobile and he went to a number of places and addressed about 8000 students about his discovery. The message from James Watson is "If you want to live well and healthy, choose your parents".

So genes are important. Both Stephen Hawking and James Watson are living examples.

Next, we called upon Pua Khein Seng, a product of our education who went to Taiwan for his engineering degree. He started the company called Phison Electronic Corporation and his company was the one that developed the flash drive. I think he has already generated USD 1 Billion in profits and he is only 35 [years old]. He is also a friend of MINDS [Malaysian Invention & Design Society].

Then we have the President of IFIA, International Federation of Inventors' Associations. He came over in order to recognise a few inventors in Malaysia. Then, we have a female inventor, Datuk Dr. Choo Yuen May, who is currently the Director General of MPOB [Malaysian Palm Oil Board]. In terms of the number of inventions per person, hers probably is the highest in the country.

Next are the young inventors, 7-12 years old, who participated in a recent exhibition. They won the best prizes for an eco-friendly insulated bag. It is not about the product but the idea. There were also 3 young students from Terengganu who invented a more efficient kettle. When they boil water, they found that water conducts heat very inefficiently so they put in a metal device to conduct heat more efficiently.

All these people that I showed to you, from the Professor of Cambridge, Nobel Laureates and other figures, all of them are associated with MINDS "Malaysian Invention and Design Society". So now I want to share with you my life experience - how I came to be involved with the world of invention and how we formed this society and what it has done during the 25 years of its establishment.

I would like to share my experience in academics. I think that the Professor mentioned that I was on the Royal Society of Chemistry where I was working on the chemistry subject, free radical. So how many of you have read about free radicals? It's quite well-known now. The work didn't exist before 1916. It was 1916 when the Professor at Ann Arbor, Michigan discovered free radicals. It's a chemical, a species. I describe it as a chemical bachelor; this chemical is also very active. This chemical molecules' structure is like a human's as well. The electrons are always in pairs but when they are alone they become very restless and very reactive.

So, these radicals later on were found to have an impact on health and disease. It is one of the cultures of ageing. That was my interest earlier. And I went to USM [University of Science Malaysia], in the 70's and I presented to the late Tan Sri Hamzah Sendut. Tan Sri said that he read the book about free radicals, published in London. Tan Sri looked at the book and then looked at me. He looked at the book again and said

"Augustine, will you do something more useful than writing this book?"

"Do something more relevant to Malaysia," he said, and I decided that he was right. A free radical, anti-oxidant is not relevant to Malaysia. So I decided to go into Palm Oil, having got the message from Tan Sri. I think he changed my direction. So I took 2 weeks off to travel from Penang to Singapore visiting oil palm plantations and so on and I found out that they have problems at that time in the 1970's. The growth of palm oil is increasing and our process of converting palm oil into solid and liquid was not acceptable in Japan and America because the process uses a detergent. So, they were not interested.

After two weeks I went back and tried to do three things in USM: administration, teaching and research. So I went back and got an idea, maybe I can apply this idea. Anyway, this idea is that we can separate palm oil not by using detergent but by centrifugation. You put the thing in test tubes and you spin it. I remember I did it in my first year lab. I found out that there was a method which uses water and alcohol. So we applied for the patent and one was granted in 1978, in England at that time. We could not get the patent in Malaysia. So that was my interest, my first patent, and we moved from there onwards. That was my first encounter with invention; we developed a process and the process could be protected (by a patent) and then could be used in the industry.

Second development; Are you familiar with the MSA term? MSA is the oldest scientific association in Malaysia, the Malaysian Scientific Association. They have a workshop and was supposed to organise this workshop. Why? Whenever they held an AGM (Annual General Meeting), there was always not enough quorum. I was supposed to organise something exciting so that the people will come and then we could get enough quorum. So, I said all the topics are always the usual one, so let's talk about Intellectual Property related to invention, innovation, trademark and so on. We had this meeting in 1986 under Tan Sri Omar, the first and final advisor. After the successful workshop, Tan Sri said that we could not stop there. So what should we do? We formed the Inventors Club and that was how we started.

So we formed this society called MINDS. The first thing that came into our mind was Malaysian Inventors Club, which would have been MIC. But MIC could create confusion and so we decided to introduce design, to make it the Malaysia Inventions and Design Society. Design is quite important and Tun always mentioned that we should not only look at the invention, but also at the design. In order to kick-start this organisation; we had the first school workshop in 1987. And the WIPO, World Intellectual Property Organization sponsored us. A consultant from Finland came to Malaysia and conducted this workshop at Taman Tun Dr Ismail. The society was registered in July 1987 and we are going to be 25 years old next year.

After the society was formed, we had further discussions and so forth, and we decided to formulate our vision, our mission and so on. We formed the society first and then this comes later. The first thing we decided was to make Malaysia the centre of excellence for invention and industrial design through MINDS. That is our vision. The second is to encourage every Malaysian to be inventive and optimize each and every Malaysian invention for the benefit of society. Our mission is to encourage Malaysians to be creative and inventive; giving advice, guidance and assistance in the utilisation of their inventions and designs.

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