

## MALAYSIA: KNOWLEDGE-BASED (K-BASED) ECONOMY ERA AND THE JOURNEY AHEAD

Azeman Abdul Majid, Che' Asniza Osman dan Mawarti Asyik Samsudin  
Faculty of Business Management  
Universiti Teknologi MARA, Cawangan Pahang, 26400 Bandar Jengka, Pahang

*Abstract:* Global events are taking place at a rapid pace with far-reaching effects. Anything can happen in a blink-of-an-eye. This rapid change is also blowing across the Asian landscape and forms a new economy and this economy is based on knowledge. "An education revolution is necessary to produce talented human capital in an increasing global and competitive environment", Datuk Seri Abdullah Ahmad Badawi said [5]. The excerpt describes Malaysia is quite apprehensive in participating the tremendous structural transformation of its economy. The arrival of knowledge-based economy shall entail economic benefits and costs. With this opportunity, Malaysia has embarked from an input-driven growth strategy to knowledge driven. This strategic direction was first announced in Budget 2000. The frontiers of knowledge are boundless. It is a new source of motivating growth of nation and the way of life as it helps in producing wealth for firms and economy. Knowledge is now one of the factors of production that drive the economy besides land, labour, or capital. Deriving from vision 2020, Malaysia has adopted several initiatives and aimed at developing into a K-based economy. The most significance is the establishment of the Multimedia Super Corridor (MSC) in 1996, with the intention to forward the development of high technology and innovation for both domestic and foreign companies and the implementation of several flagships applications. This article explains about K-based economy and within it include the characteristics of k-based economy, the rationale to why Malaysia needs K-based economy, our positioning towards K-based economy, the people involved, the challenges and solutions to lead the k-based economy.

### INTRODUCTION

The ability to create, disseminate and apply knowledge efficiently is now critical to competitiveness both at the level of the firm and the nation. So much so that the economies of the advanced industrialised countries are increasingly referred to as a knowledge driven economics. Apparently, knowledge is becoming more important for generating sustainable economic growth, maintaining competitiveness and transforming almost everything inclusive administrations, industries and even individual.

Knowledge is recognised as the most critical factor of production. It generates more wealth than any other traditional factors of production such as land, labour and capital. In a K-based economy, educated and skilled human capital is the most feasible asset.

There are two major forces underlying in reshaping the new economic framework. Firstly, the international push towards globalisation and trade liberalisation, which interprets that the world is becoming more and more open to cross-border economic activity. Secondly, advances in information and communication technology are leading to cost savings in business transactions and efficiency increases in the firm's value chain.

A K-based economy is one where knowledge is created, acquired, transmitted and use effectively by enterprises, organisations, individuals for greater social development. In general, knowledge economy (K-economy) can be defined as:

- The optimal and ever increasing use as well as application of knowledge in all sectors of the economy
- The development of viable, profitable and high value-added, knowledge-intensive industries.

#### *The Meaning of Knowledge*

Knowledge is defined as the application and productive use of information and it requires a social process. Society can gain knowledge through awareness, understanding through experience, familiarity

or learning. Knowledge and information are distinctively interrelated. Knowledge creation is dependent on information. For knowledge to be put to work and then valued, it must be identified and made accessible. There are two types of knowledge: tacit knowledge (non-codified knowledge) and explicit knowledge (codified knowledge).

*Tacit knowledge* is knowledge that people may not even realize they have it. We can say it as 'the sixth sense' or knowing how to touch-type without thinking or an instinct. There are two dimensions of tacit knowledge, firstly, the technical dimension encompassing skills or crafts and secondly, the cognitive dimension consisting schemata, mental models and beliefs that shape the way individuals perceive the world around them [4]. On the other hand, *explicit knowledge* is what can be transformed into hard copies, explained in words, or sold. Examples are manuals, brochures, standardized procedures, mission statements, etc.

The relationship between tacit and explicit knowledge is complex and they can contribute to the dynamic nature of knowledge. The dynamic model of knowledge creation is anchored to a critical assumption that human knowledge is created and expanded through social interaction between tacit and explicit knowledge [4].

## DISCUSSION

### *Knowledge-Based Economy-Malaysian Context*

At the early years of independence, 1960 Malaysia's economy relied on producing natural resources such as tin, natural rubber, palm oil and timber. After a decade that was in 1970 Malaysia was involved with assembly-type manufacturing. For both types of economy, labours were at that time highly demanded. Later in 1980 to 1995, Malaysia penetrated into a technology-based industry and concurrently capital, labours, and knowledge intensives were greatly required. Along the way the government's strategy was enacted through several Malaysia Plans. Subsequently, the 8<sup>th</sup> Malaysian Plan (2001 – 2005) outlines the major K-economy policy initiatives.

In Malaysia's context K-based economy is defined as an economy in which knowledge, creativity and innovation play an ever-increasing and important role in generating and sustaining growth [3]. The government has laid out several policies and incentives to ensure the new development phase is achieved. Amongst the steps taken include The National Information Technology Agenda, Multimedia Super corridor and the K-Economy Master Plan. Today, tangible evidence of Malaysia's commitment to the K-economy is the Multi Super Corridor (MSC).

### *Why Malaysia Moving Towards A Knowledge-Based Economy*

Some reasons to why Malaysia must move towards a K-based economy:

First, Malaysia aspires to become a developed nation by the year 2020, supported by its nine strategic visions; it must transform itself from a production-based to a K-based economy. However, the society must first be made aware of this information technology revolution, in order to remain relevant to the new economic environment. Profoundly, K-based economy era should work universally. Becoming a developed nation means not just economically, but also politically, socially, spiritually, psychologically and culturally.

As this will facilitate Malaysia to eradicate poverty amongst all Malaysian irrespective of their race and religion, to obtain a fair and equitable distribution of the wealth of the nation, in which there is full partnership in economic progress, to produce a society that is innovative and forward-looking, one that is not only a consumer of technology but also a contributor to the scientific and technological civilisation of the future, and finally to work to produce high quality goods and services, with higher return on investment and will provide a distinctive advantage against other countries in the worldwide market.

Second, globalisation and liberalization are steadily bringing down barriers and removing protective walls that help sustain local industries. In the new economy, the structure will not be the same as the old one. The change will postulate new rules and new challenges. Moving towards a K-based would allow Malaysia to prospect for new products and services. Such development is viable to produce highly competitive goods and services for the emerging global marketplace. This provides opportunity to Malaysia to penetrate markets, which were unavailable before. Gradually, the distinctive feature between local and world market will disappear. This economic shift will enable Malaysia to increase its market share globally through the exports of the highly competitive new products and will also gain revenues for the growth and development efforts.

Third, the growing economic competitions of countries like China, India, Vietnam and Indonesia. Malaysia is facing increasing competition with cheaper labours and more abundant resources from these countries. An example is a report by the Economic Intelligence Unit (EIU), indicated that China is getting four fifth of all foreign direct investments (FDI) that comes into South East Asian Region [1]. This is becoming a threat to Malaysia and it needs attention. To avert such competition, moving into the k-based economy would then provide a competitive advantage.

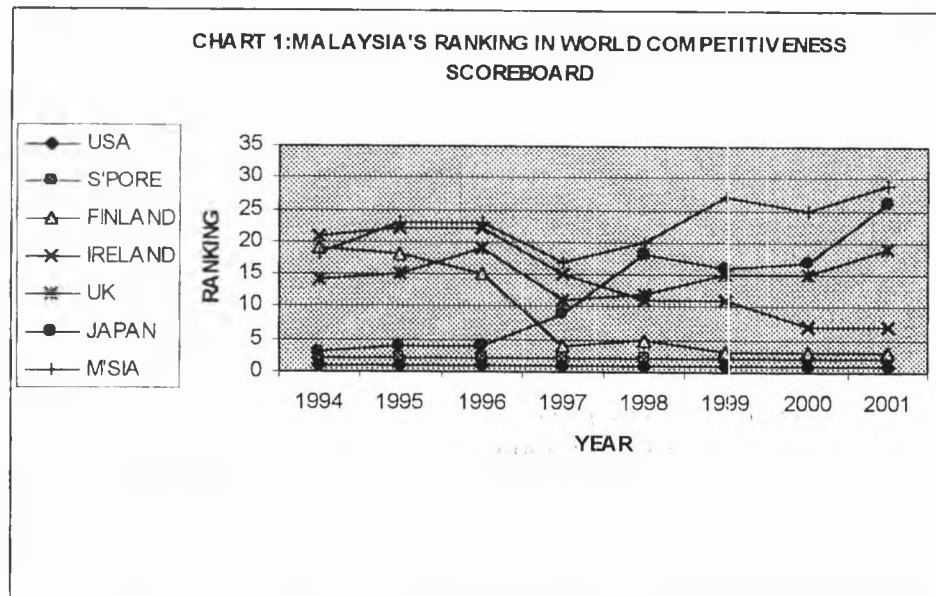
Fourth, meeting the challenge of enhancing total factor productivity (TFP). TFP refers to the additional output generated through enhancements in efficiency accounted for by such things as advancement in human capital, skills and expertise, acquisition of efficient management techniques and know-how, improvements in an organization, gains from specialization, introduction of new technology, innovation or upgrading of present technology and enhancement in Information and Communication Technology (ICT). This implies that Malaysia's economic growth can no longer depend heavily on input growth, particularly cheap labour instead it should shift focus to growth based on productivity or TFP (Seventh Malaysia Plan). Malaysia TFP has not been so encouraging so far. Thus, with the migration to a K-based economy will boost Malaysia's ability to meet its TFP enhancement goals.

Finally, Malaysia is facing erosion in the global competitiveness. Chart 1 indicates, the World Competitiveness Report, Malaysia's international competitiveness has slipped from 18<sup>th</sup> place in 1994 to 29<sup>th</sup> in 2001. In contrast to Malaysia, Finland rose from 19<sup>th</sup> during the same period to 3<sup>rd</sup> since 1999. Ireland improved substantially from 21<sup>st</sup> in 1994 to 7<sup>th</sup> in 2000 and 2001. Both are recently developed K-based economies, which were performing extremely poorly [3].

Table 1: Malaysia ranking in world competitiveness scoreboard

|           | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|-----------|------|------|------|------|------|------|------|------|
| USA       | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    |
| SINGAPORE | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| FINLAND   | 19   | 18   | 15   | 4    | 5    | 3    | 3    | 3    |
| IRELAND   | 21   | 22   | 22   | 15   | 11   | 11   | 7    | 7    |
| UK        | 14   | 15   | 19   | 11   | 12   | 15   | 15   | 19   |
| JAPAN     | 3    | 4    | 4    | 9    | 18   | 16   | 17   | 26   |
| MALAYSIA  | 18   | 23   | 23   | 17   | 20   | 27   | 25   | 29   |

Source: The World competitiveness Yearbook, various issues



#### *How Far Has Malaysia Approached The Status of K-Based Society?*

In order for Malaysia to become a K-Based economy, the citizens should first be developed into a knowledge society (K-society). A K-society, as according to the Research Group on Knowledge Society-Alatas et al 2000, is believed to have the following characteristics [2].

- Its members have attained a higher average standard of education in comparison to other societies and a growing proportion of its labour force is employed as knowledge workers.
- Its industry produces products with integrated artificial intelligence.
- Its organization-private, government and civil society are transformed into intelligent organizations.
- There is increased organized knowledge in the form of digitalized expertise, stored in data banks, expert systems, organizational plans and other media.
- There are multiple centers of expertise and a polycentric production of knowledge
- There is a distinct culture of knowledge production and knowledge utilization.

Though we are not sure how far Malaysia has approached the status of a K-society, comparisons between certain countries (Table 2) of the world can be done through critical comparative indicators as in Table 3.

Table 2 : Comparative Countries

| COUNTRY                        | RATIONALE FOR SELECTING  |
|--------------------------------|--|
| Singapore (S'pore)             | A neighboring country  |
| SouthKorea (S.Korea)           | Often associated with Malaysia as one of the Asian tiger economies               |
| Taiwan (TWN)                   | A total population, which is almost closed to Malaysia                           |
| Thailand (Thai)                | A neighbouring country   |
| Philippines (PHIL)             | Asian counterpart  |
| New Zealand (NZ)               | Comparison on an industrialized and a free market economy.                       |
| United Kingdom (UK)            | World's great trading powers and financial centers                               |
| Japan                          | Strong work ethic, high technology and second most powerful economy in the world |
| Germany                        | Closeness in the size of the land area.  |
| United States of America (USA) | The most powerful, diverse and technologically advanced economy in the world.    |

### *Comparative Indicators*

Some of the critical comparative indicators include:

- Number of computers per 1,000 people
- Number of Internet hosts per 1,000 people
- Mobile Telephones per 1,000 people
- Total R&D Personnel per 1,000 people
- High Technology exports Number of Patents Filed (Residents)
- Number of Patents Filed (Non Residents)

Malaysia has already made some progress towards developing into a K-based economy. Nevertheless, the bulk of journey in inculcating knowledge to the societies still lies ahead. In terms of ranking for different K-based economy indicators for instance, the United States excels with regards to almost all indicators. The good news is in East Asia, Malaysia ranks behind Singapore, Japan, Taiwan and South Korea, but ahead of all other Southeast Asean countries. On the other hand, amongst the total of 11 benchmarking countries mentioned, Malaysia is ranked 8 or 9 in most instances and this makes Malaysia fares generally better than the Philippines and Thailand. Malaysia is comparatively behind with regard to Internet and e-commerce uptake, and content development and R&D. Thus, what could be the challenges ahead?

### *Issues and Challenges Malaysia Has To Face*

Malaysia is currently lacking some of the critical elements to support the K-based economy. Among them are the shortage of skilled and knowledge workers, absence of a K-economy supportive education and training system, lack of research and development (R&D), relatively weak science and technology base, deficiency in institutional support and infrastructure, a slowly evolving financing system, and a shortage of techno-preneurs.

Hence the major challenge is to be able to change the mindset of the people from the traditional way of economy to the new way. The government needs to convince the different sectors and communities in the country. This new transformation has created a massive need for knowledge workers who would be the backbone of the nation's economy in the future. The growth of new economics activities in production for instant will require workers who are innovative and have creative way of thinking.

The educational system needs to be revamped and restructured. The focus should be directed on how to make existing curriculum more innovative to help children invent and develop a critical and analytical mode of thinking and ultimately create sufficient pool of well educated, highly skilled and strongly labour force.

Another important challenge is building an innovative capacity through R&D. Innovation is one of the keys to success in a k-economy and it is R&D that determines innovation. Based on the indicator-Table 3, it is apparent that Malaysia currently has a relatively low share of Information Technology (IT) skills in labour force, poor R&D capacity, and weak innovative skills. The number of patent applications files by residents, besides resources committed for R&D is particularly worrisome. The level of penetration of Information and Communication Technology (ICT) is uneven among the states in the country. Generally, there is a gap in development and a potential of IT dispersion. To overcome this gap, improvements in the accessibility of ICT infrastructure is necessary irrespective whether in urban or rural area.

The vision for the K-economy is also to be designed to attract foreign investments. Mainly this is due to the increasing competition with the developing of countries like China, Vietnam, India and Indonesia. Thereby, besides portraying a distinct Malaysian k-economy with attractive environment, it is necessary for the government to consider designing attractive profit repatriation and taxation arrangements to lure foreign investors.

Table 3: Knowledge Society Indicators, 1997/2000

| INDICATORS – [Year]  | M'SIA | S'PORE | S.KOREA | TWN   | THAI  | PHIL  | NZ     | UK      | JPN     | GER     | USA     |
|--|-------|--------|---------|-------|-------|-------|--------|---------|---------|---------|---------|
| Population (million)- [1999]   | 21    | 3      | 46      | 22    | 61    | 79    | 3.7    | 59      | 126     | 82      | 272     |
| Land Area in sq km ('000)  | 329   | 0.0064 | 98      | 32    | 512   | 279   | 269    | 242     | 375     | 349     | 9159    |
| Number of computers per 1000 people --[2000]                         | 114.6 | 439.8  | 313.0   | 336.0 | 48.4  | 23.3  | 484.6  | 442.4   | 389.2   | 372.6   | 580.5   |
| Number of internet hosts- [1999]                                     | 2.80  | 22.19  | 6.03    | 20.04 | 0.49  | 0.23  | 47.81  | 28.4    | 16.65   | 17.61   | 136.65  |
| Mobile Telephones per 1000people- [2000]                             | 236.4 | 583.0  | 566.9   | 750.0 | 57.8  | 75.5  | 190.6  | 673.4   | 457.8   | 585.2   | 401.4   |
| Total Research & Development (R&D) Personnel per 1000 people –[1999] | 0.300 | 3.822  | 2.771   | 4.721 | 0.231 | 0.208 | 3.433  | 1.067   | 7.332   | 5.627   | na      |
| High Technology exports,% of manufacturing exports-[1998]            | 54    | 59     | 27      | na    | 31    | 71    | na     | 28      | 26      | 14      | 33      |
| Number of patents filed, residents- [1997]                           | 179   | 8,188  | 92,798  | na    | 238   | 125   | 1,735  | 26,591  | 331,487 | 62,052  | 125,808 |
| Number of patents filed, non residents- [1997]                       | 6,272 | 29,467 | 37,308  | na    | 5,205 | 3,440 | 33,402 | 110,884 | 66,487  | 113,543 | 110,884 |

Sources: [http://www.photius.com/wfb/1999/rankings/total\\_land\\_area\\_0.html](http://www.photius.com/wfb/1999/rankings/total_land_area_0.html)  
: Knowledge-Based Economy Master plan-ISIS MALAYSIA-September 2002

### Strategies

The following strategies should be given emphasis in order to achieve k-based economy (7).

1. Cultivate and secure the necessary human resources.
2. Establish the institutions necessary to champion, mobilize and drive the transition to a K-based economy.
3. Ensure incentives, infrastructure and infostructure necessary to prosper the optimal and ever-increasing application of knowledge in all sectors of the economy and the flourishing of knowledge-enabling, knowledge empowering and knowledge incentive industries.
4. Dramatically increase capacity for the acquisition and application of science and technology (including information and communication technology) in all areas.
5. Ensure that the private sector is the vanguard of the k-based economy's development.
6. Develop the public sector into a k-based civil servant.
7. Bridge the knowledge and digital divides.

### CONCLUSION

Moving towards K-based economy from traditionally production-based economy, it is really a challenge to Malaysia because it is not an easy road to follow. The transformation is inevitable if Malaysia is not ready to compete in the new economy. We must compete with other countries to benefit from this new economy or often called global economy. While the other is walking, we must run to achieve our goal. To compete and survive in this transitional environment, adequate preparations are the keys to success.

Malaysia needs to accelerate in developing the competitiveness of its human resources. More highly skilled and knowledge workers, educational reform, the right infra and info structure are required to maintain and sustain the survival of the nation. Eventually, all parties including government, private sectors, the employees, the individuals have to play serious roles in contributing to the success of the new economy. Together, we hope with adequate preparation and cooperation from all sectors, we achieve the vision of 2020. In the K-based economy, the more competitive and efficient the one nation is the better chances for the nation to survive.

#### REFERENCES

1. David N. Abdulai, (2001) – Malaysia and the K-economy-Challenges, *Solutions and the Road Ahead*-Publisher Pelanduk Publication (M) Sdn Bhd.
2. Evers Hans Dieter-Towards a *Malaysian Knowledge Society-Third International Malaysian Studies Conference(MSC3)*, Bangi, 6-8 August, 2001.(<http://home.t-online.de/home/hdevers/papers/Malaysian-Knowledge-Society>)
3. Knowledge-Based Economy Master Plan (2002) –*Strategic Initiative One of the 21<sup>st</sup> Century-making the quantum leap to the K-Based Economy*-Published by the Institute of Strategic and International Studies (ISIS) Malaysia, September, 2002.
4. Roberts Joanne (2000), The Drive to codify: Implication for the *Knowledge-Based Economy-Paper Prepared for the 8<sup>th</sup> International Joseph A. Schumpeter Society Conference- 28<sup>th</sup> June-01<sup>st</sup> July, 2000*, University of Manchester, UK
5. Star, Wednesday, 14/01/2004-Pak Lah: We need education revolution.