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VALUE ADDED SERVICE ENTREPRENEURSHIP DEVELOPMENT THROUGH MELAKA K-ECONOMY INCUBATOR COMPLEX

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ABSTRACT

Since 1st. April 2001, Melaka State has embarked on a programme to develop value added service entrepreneurship through Melaka K-Economy Incubator Complex. The idea draws on the principle of interdependency and sustainability through many overlapping network system and system of clusters which have shown to be more robust and developmentally successful.

Many authors such as **Gouranga Gopal Das**¹ has shown some quantitative evidence of the interdependency of Trade, Technology and Human Capital. This paper has brought the idea further in suggesting the implementation procedures which can be followed by developing countries such as Melaka which is striving to be an industrialised state by the year 2010.

The implementation procedures feeds on the logic that as the rural areas are the geographical location where there is a sufficient density of human population with lower intensity of activities and a marked density of creativity; these areas should be a subset of the innovation system which can become a catalyst to the K-Economy development of any country. Many practices so far has neglected and ignored the role of the rural areas in the economic development of a nation other than the fact that they provide a pool of cheap labour. Initial surveys done in Melaka has shown some indication that contrary to present practices, rural areas play a significant role in the economic development of a nation because potentially they are capable of providing knowledge workers and

creativity factors which are essential for the growth of value-added businesses.

The paper also discusses the structure of the internetworking which is employed to maximise the effectiveness of the knowledge factor. This internetworking takes into consideration the division of focus and division of skills in delivering three important elements of the innovation system; viz-a-viz business capability, research capability and development & design capability.

1.0 Introduction

Malaysia's economy and economic development are guided by five-yearly programs which are known as the Malaysia Plan. The reason for this Malaysia Plan is to enable the Government to implement specific projects without losing sight of the global picture of the process of moving forward and moving ahead in social , education , technological and economic developments. With the Malaysia Plan and the Mid-Term Reviews which are conducted every two-and-half years, it would be easier for the planners and the implementors to work on the same platform and for bench-marking with the other nations of the world.

Since independence, Malaysia has undergone six distinct phases in its development evolution. The First Malaysia Plan (1966 - 1970) puts heavy emphasis on rural development and the alleviation of the living conditions of the rural poor. During this period many rural-centric organisations such as FELDA , RISDA and MARA was formed.

The second Malaysia Plan (1971-1975) stressed on the creation of a balanced , fair and just society,; considering the fact that Malaysia's population consists of many races embracing many diverse religions of the world.

During the Third (1976-1980) and Fourth (1981-1985) Malaysia Plans , there was a concerted drive to bring in many multinationals to create employment for Malaysians. Many of these multinationals were given pioneer status and were given incentives to operate assembly-type industries in the country.

During the Fifth (1986-1990) and Sixth (1991-1995) Malaysia Plans , the Malaysian Government changed gear by stipulating that having assembly plants wasn't enough, there should be some amount of technology transfer and technology development. It was during this period that the Government created the National Science Research Development Council (NSRDC) which was initially chaired by the Rt. Hon. Prime Minister of Malaysia but eventually , the responsibility of chairmanship was given to the Secretary General in the Prime

Minister's Department. The vehicle for the technology transfer and for technology development is the sum of RM 1 Billion first allocated for the Sixth Malaysia Plan and and this allocation of RM 1 Billion per Malaysia Plan period continues until now (Eighth Malaysia Plan). The RM 1 Billion allocation is managed under the programme Intensification of Research in Priority Areas (IRPA).

The idea of technology development was fine-tuned during the Seventh Malaysia Plan (1996-1999) when the private sector was encouraged to partake in research and development. For this, Industry Research Grant Scheme (IGS), Multimedia Research Grant Scheme (MGS) and Demonstrator Application Research Grant Scheme (DAGS) were formed. The Seventh Malaysia Plan focussed on the development of indigineous high technology with the philosophy " buy some and make some". This gave Malaysia automotive industries a boost with the formation of PROTON and PRODUA. This period also saw the commencement of several initiatives such as the consolidation Technology Park activities (TPM, Kulim High Tech Park, Multimedia Technology Park, MTDC-UPM Technology Park, MTDC-UKM Technology Park) , the consolidation of venture capital activities (MTDC) , the consolidation of high technology research activities (MIMOS, SIRIM) and the establishment of Multimedia Super Corridor (MSC).

During the current Eighth Malaysia Plan (2001-2005) the Malaysian Government is looking at the knowledge-economy as the basis of every spectrum of the nation's development.

2.0 Melaka's Case

Melaka is a state with an area of 1,650 sq. Km and a population of 635,791. It has 286 villages and 81 counties. It has a GDP of RM 6,148 Million of which service and manufacturing industries contribute 57.3% and 35.0% respectively. Although Melaka rates 12th. in Malaysia in terms of GDP, it ranks 5th. in Malaysia in terms of per capita income.

Melaka is part of Malaysia. Therefore many development strategies and legisture promulgated at the Federal level , impinges on its effort to achieve developed state status by the year 2010. Many of these strategies are in some way inhibiting. For instance it was stated that there shall be only one Multimedia Super Corridor and there shall not be any semblance of the same elsewhere outside this 40 Km x 30 Km area.. One would have thought that under the condition of boarderless society, it would be beneficial if the whole of Malaysia where the infrastructure is good, be considered to be part of the MSC area. Nevertheless, Melaka has to abide by these rules.

The approach taken by Melaka is to look at the modified **Kim & Mauborgne**⁴
 Two strategic Logics.

The Five Dimensions of Strategy	Conventional Logic	Value Innovation Logic
General Assumptions	Economic growth conditions are given	Economic growth conditions can be shaped
Strategic Focus	The state should build competitive advantages. The aim is to beat the competition.	Competition is not the bench-mark. The state should pursue a quantum leap in value to dominate the engine of growth.
Market	The state should strategise its industries to retain and expand its market base through further segmentation and customisation . It should focus on the differences in what the market forces value.	A value innovator targets the whole market mass and willingly lets some existing market clientele go. It focusses on the key commonalities in what market forces value.
Assets and Capabilities	The state should leverage its existing assets and capabilities	The state should not be constrained by what it already has. She must ask , <i>what should we do if we were starting anew?</i>
Product and Service Offerings	The state's traditional boundaries determine the products and services which she offers. The goal is to maximise the value of those offerings.	A value innovator thinks in terms of the total solution market forces seek, even if that takes the state beyond its industry's traditional offerings.

2.2 Technology Development Model

Ishak^{8, 9} has stipulated way back in 1978 that technology development can be considered to be determined by several factors; some quantifiable and others not-so-easily quantifiable.

That is the state of technology development , ζ can be expressed as a function

$$\zeta = f (\text{hardware [a] , software [b] , skill [c] , innovation [d] , legislature [e] , mind-set [f] })$$

Any incremental change of technology is brought about by the expression

$$\delta\zeta = [\partial\zeta / \partial a] \delta a + [\partial\zeta / \partial b] \delta b + [\partial\zeta / \partial c] \delta c + [\partial\zeta / \partial d] \delta d + [\partial\zeta / \partial e] \delta e + [\partial\zeta / \partial f] \delta f$$

As legislature and mind-set is only an interventional factor, we can consider it to be factored into the function. That is

$$\delta\zeta = K. ([\partial\zeta / \partial a] \delta a + [\partial\zeta / \partial b] \delta b + [\partial\zeta / \partial c] \delta c + [\partial\zeta / \partial d] \delta d)$$

In many developed countries hardware and software are usually tied up with innovation. In the case of Melaka and Malaysia (in general) , since there is the policy of buy some and make some, hardware and software are completely independent of innovation.

In this paper, since relationship between hardware and software are approximately linear , The total expression above can be simplified (without proof) as shown below

$$\delta\zeta=K.([\partial\zeta/\partial g]\delta g + [\partial\zeta/\partial c]\delta c + [\partial\zeta/\partial d]\delta d)$$

Having had a model for technology development, it is now left to find instruments to measure these variables.

In this study , comparative measurements made use of regression analysis . In the first phase of the study, the variables in the expression use the following data:

g = MITI's total figure on machinery and software imports

c = Ministry of Education figures on number of technological graduates produced

d = Ministry of Science's no of patents registered

2.3 Economic Development Model

One way to understand the relationship between current production, savings activity and the accumulation of capital is via the **Solow Growth model**¹⁰ which defines the conditions for the tendency of different nations to approach an equilibrium (steady-state) level of the capital stock.

We begin by using an economy-wide production function in Cobb-Douglas form with constant returns to scale:

$$Y^* = f(L,K) = AL^\alpha K^{1-\alpha}$$

As a first step, we modify this expression to put it into a form that represents the standard of living (*simply the ratio of output to labor input*):

$$y^* = Y^*/L = f(1,K/L) = A(K/L)^{1-\alpha} = Aq^{1-\alpha}.$$

The term '**q**' represents the capital/labor ratio better understood as the amount of capital available per unit of labor input. We would expect that greater amounts of capital per labor-unit would make that labor more productive and thus raise the living standards within a particular nation.

Capital is unique in that over time it wears out. This factor input is subject to the effects of friction, obsolescence and climate such that at some future date it ceases to make a useful contribution to the production process. This is known as depreciation. The reciprocal of the life-span of a unit of capital is then defined as the **rate of depreciation 'δ'**. The implication of this is that without replacement (via investment expenditure) the capital-labor ratio would naturally decline over time. In order to maintain this ratio, the required level of investment 'I_{required}' (a flow variable) must be equal to the depreciation in the capital stock:

$$I_{\text{required}} = \delta K$$

This research looks at **q** and treats it to be dependent on intellectual capital and knowledge (smart partnership). This assumption is not too far fetched as capital, K should not be just monetary capital but should also include intellectual capital. At the same time, labour, L , must also take into consideration knowledge element ; hence knowledge worker factor. Because of these considerations, Solow Growth model becomes rather non-linear and hence some researchers have termed it the Skew Solow Growth model . To date there has never been a common Skew Solow Growth model for the simple reason that it is completely geopolitic-centric. This research looks at the Skew Solow Growth model as applied to Melaka.

3.0 Implementation Strategy for Melaka

One of the most prudent ways in which Melaka can use to get all its acts together in the development of the state is in the three philosophies which was suggested by the Rt. Hon. Chief Minister of Melaka; namely

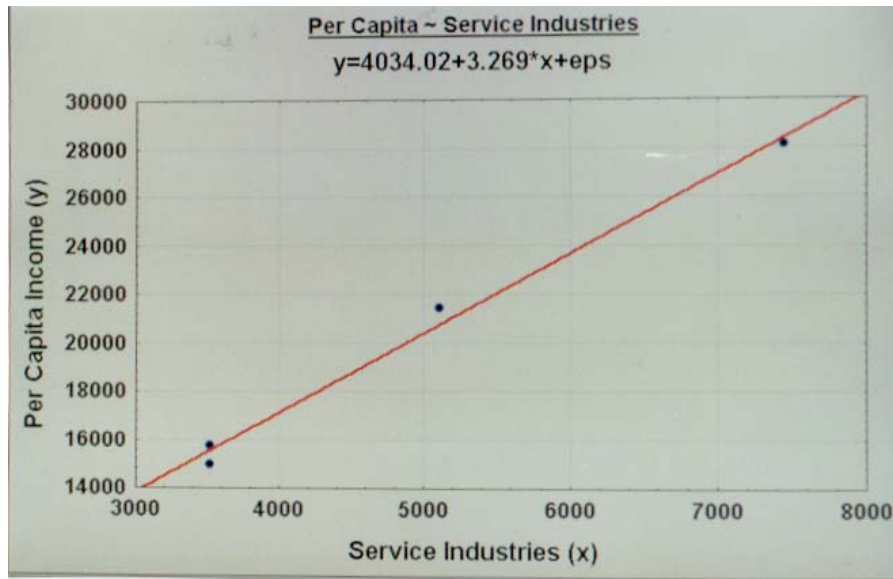
- (1) The development must ensure that critical mass is greatly exceeded. In other words the development must be in an environment of abundance. Without this it will be difficult for any state to move forward.
- (2) The development must work on the principle of networking. A separate entity working alone cannot be an instrument of development. This has been the weakness of many present technology parks in Malaysia
- (3) The development must make use of the creativity of the people in the rural areas. This make sense as the rural areas have a significant pool of brain power. It is a fact that many authors , writers , makers of technologies such as boats, paddy farming machines etc. are from the rural areas.

3.1 Environment of Abundance

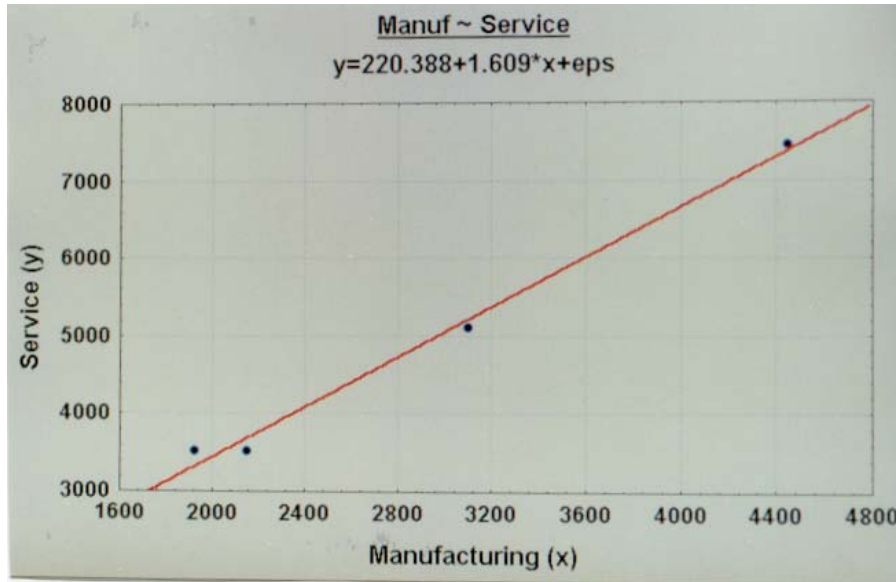
One of the greatest problems faced by Malaysia in its effort to bring about technological and economic revolution is the fact that in all the things she wishes to implement there has never been a critical mass. The number of research scientists and engineers in Malaysia , from the statistics produced by the Ministry of Science Technology and the Environment Malaysia , is a mere 400 per million of population compared to 1,500 for Singapore and over 4,000 for USA and Japan.

Melaka agrees with some of the opinions which have been expressed by several members of the National Science Research Development Council (NSRDC). That is there is a need for institutional reforms . Examples being

- (1) The immigration laws should be changed to allow high calibre scientists and engineers to work in Malaysia
- (2) There should be bigger emphasis in R&D in the public and private sectors. At the moment investments on R&D in Malaysia is only 0.4 % of GDP. R&D expenditure should be at least 2% of GDP.
- (3) There should be an effort to enhance the growth of service industries.



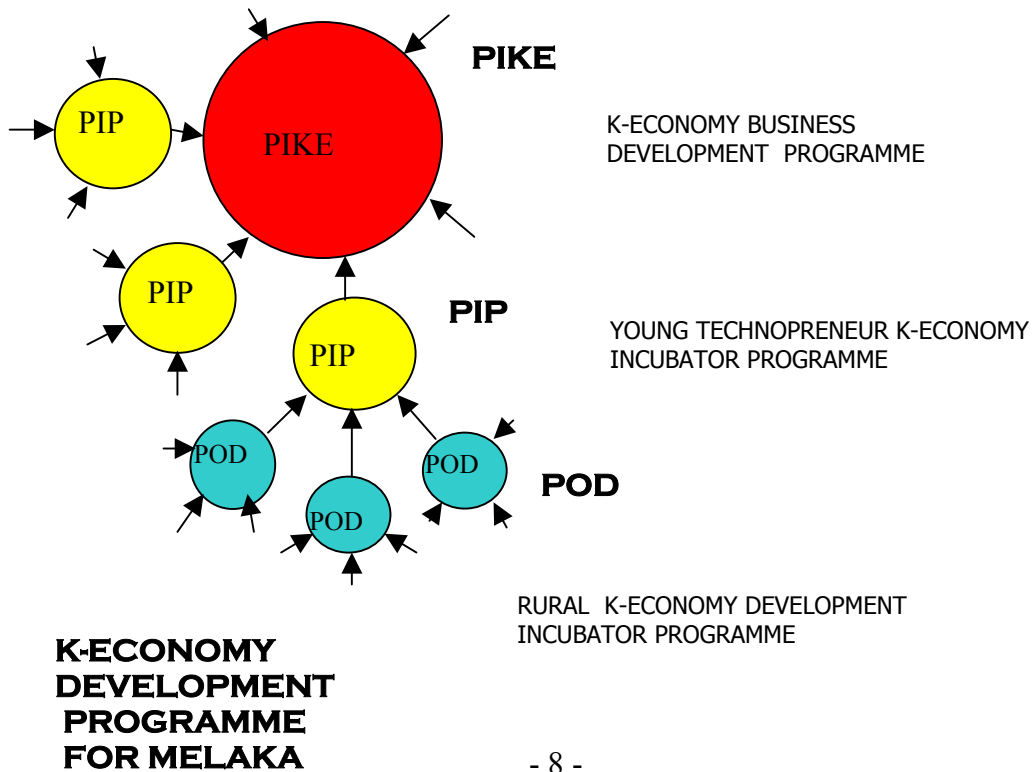
As service industries are in some way tied up with manufacturing industries, there must also be more concerted efforts to attract high tec manufacturing industries into Melaka.



3.2 Principle of Networking

Many of the technology parks in Malaysia has so far not been successful because each of these technology parks work in isolation. It is hoped that some improvement can be generated by implementing the networking as shown below.

SUPPORTING NETWORK

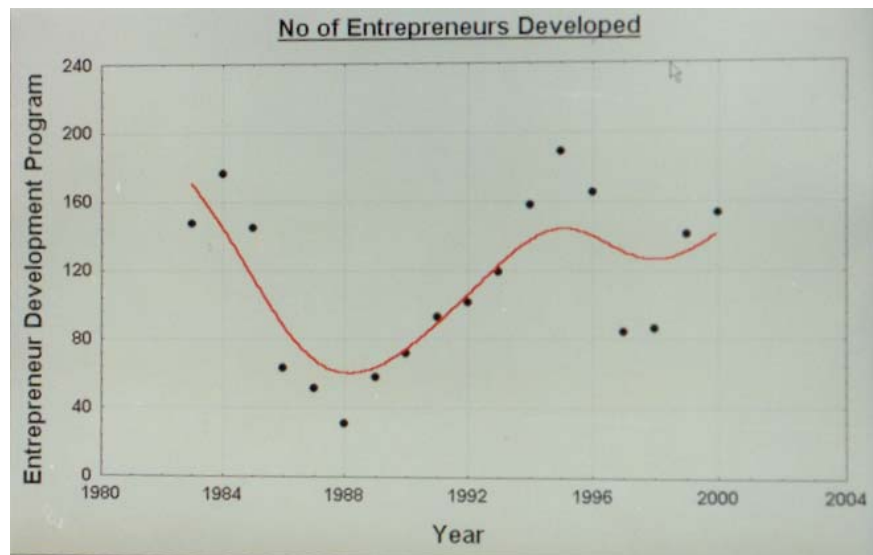


PIKE = Pusat Inkubator K-Ekonomi = (*K-Economy Incubator Complex*)

PIP = Pusat Inkubator Perantaraan = (*Intermediate K-Economy Incubator Centre*)

POD = Pusat Operasi Inkubator K-Ekonomi Desa
= (*Rural K-Economy Incubator Operational Centre*)

Three buildings (Incubator 1, Incubator 2, Incubator 3) will be built in the Melaka K-Economy Incubator Complex at Ayer Keroh Melaka. This complex will be responsible for all K-Economy Business Development Programmes. This complex will be supported by Intermediate K-Economy Incubator Centres which are situated at institutions of higher learning and research institutes. Research and technological supports will be the main features of the Young Technopreneur K-Economy Incubator Programmes. It is hoped that Rural K-Economy Incubator Operational Centres will constitute an important component of the whole K-Economy development effort of Melaka. Here Rural K-Economy Development Incubator Programmes will be carried out.



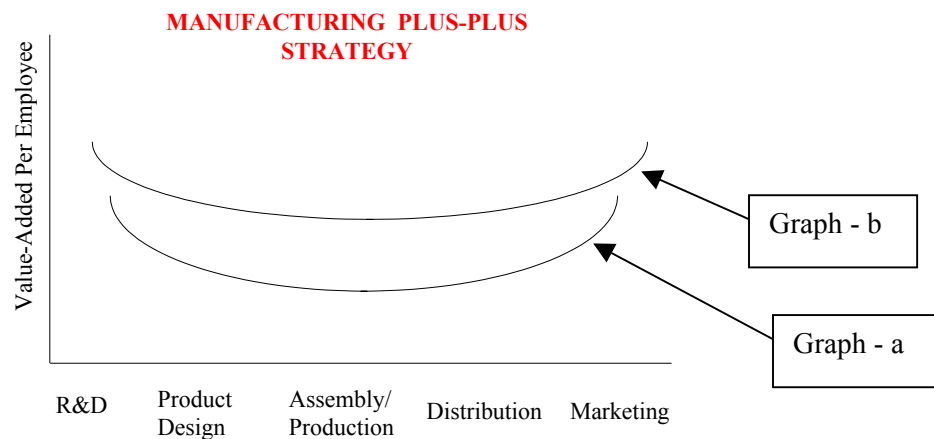
It is hoped that Melaka will be able to increase the number of entrepreneurs at least four times that produced by the Ministry of Entrepreneur Development (shown above).

3.3 Use of the Creativity of People in the Rural Areas

During the Third and Fourth Malaysia Plans , the rural folks were seen only as the source of cheap labour from which many foreign assembly and processing companies would tap to produce products for export.

Melaka State Government had seen that eventually, when the foreign companies had found a source of cheaper labour, Melaka and Malaysia would no longer be an attractive place for these companies to set up their manufacturing operations.

The approach is to look at the value added per employee



Assembly and production processes bring about the lowest value-added per employee (Graph - a). Therefore it would be important for the State Government to look at the elements in the value chain which can bring about higher value-added per employee. Such elements in the value chain being R&D, Product Design , Distribution and Marketing.

In the case where assembly and production have been entrenched in the Melaka economy, the State Government must ensure that there is a continuous effort on the part of the manufacturing companies to enhance value-added per employee by improving the manufacturing processes using automation and high technology techniques.on a continuous basis.(Graph - b)

This would mean that the people in the rural areas will undergo more high technology training and retraining so that there will be a continuous production of knowledge workers.

In some cases, the companies will use the people in the rural areas to set up vendor companies which will act as supply chains for the anchor companies.

4.0 Conclusion

Melaka hopes to develop its K-Economy so that she can achieve developed state status by the year 2010. This developed state status is bench-marked on to the figures which characterise Taiwan and Korea.

The strategies used by Melaka has so far produced some limited successes. As state economic development is a long term process, the study will be anxious to look at its achievements at the end of the Eighth Malaysia Plan.

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