Chapter 15

Governance, development and learning- Coordinating human resource policies in companies and institutions in Singapore and Malaysia

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Malaysia and Singapore are example of economies that are deeply influenced and highly dependent on globalisation of the economy. The industrialisation process especially in Singapore but also in Malaysia, although to a lesser extent, has been depending on foreign direct investment and on access to export markets. The institutional support to FDI has been of critical importance in this development. In the late 1960s and in the 1970s the focus was on providing physical infrastructure and investment incentives, while the emphasis in the following decades has been more and more on "soft" infrastructure providing technological capabilities and a higher skill level of the labour force. For the two governments the strategy of attracting foreign investment has had two purposes. Through FDI they aimed on the one hand at accelerating economic growth and transferring technology and management knowledge to the country. On the other hand they aimed at accelerating growth and capacity building in their local private sector creating linkages between foreign and local capital. This double faceted strategy is also the framework for the two governments' attempt to establish institutional conditions for more value added forms of production. In this transition process from mainly labour-intensive to more knowledge-intensive forms of production human resource development is a crucial issue.

A growing literature on human resource development draws attention to how public and private institutions affect skills and knowledge development in different countries (Brown, Green and Lauder 2001; Booth 2003). Although there are variations in national institutional set-up within human resource development the set-up is often an outcome of governments borrowing ideas and policies from each other. The growing interest in making comparative studies between national education and skills development systems has paid most attention to variations in governing

national education and skills systems (Ashton et al. 1999; Fleming and Søborg 2002). The concept human resource development is in this connection as in this chapter used broadly including all types of public or private education and training efforts. In the referred literature the impact of globalisation on national human resource development policies is not the chief focus point. It is rather the investigation of state policy and the possibility of creating proactive educational policy and independent skills formation for economic development. The question how global competition influences national human resource policy is one of the focus points here. Another focus point is governments' use of human resource policy in transformation to the so-called knowledge economy. How do multinational companies lay pressure on national human resource policy to adapt to international standards and norms regarding skills development? How do national human resource institutions and planning agencies handle the pressure of multinational companies and use the technology and knowledge potentials in these companies? Are new institutions created? Will there be a tendency of converging human resource development or reducing the knowledge gap due to this pressure?

Malaysia and Singapore are important case studies to highlight these questions. Both countries have open economies for foreign direct investment and they have made great effort to attract foreign capital through infrastructure and financial incentive measures. Between the two countries there are variations in the extent to which foreign direct investment penetrates their economies and to the composition of this investment. There are also variations in the economic development and in the degree of institutional support to human resource development. But there are many similarities as to institutional set-up between the two countries. Singapore has been ahead of Malaysia in economic development since the separation of the two countries in 1965. The transfer of institutional knowledge has therefore mainly been from Singapore to Malaysia. Because of these variations we want to explore how the flow of institution building knowledge is between the two countries and how they handle the foreign impact on their economies. Both countries have built up national economic planning boards with the aim of setting up guidelines for the economic development in general. Both the Economic Development Board in Singapore and the Economic Action Council in Malaysia search for best practice in multinational companies and foreign public and private institutions in order to transfer knowledge to local development initiatives (Kanapathy 2001). The overall agenda for the two planning boards have been to push the national economies towards more

value added forms of production. But this push could not be done without having an adequate supply of trained labour. Both planning boards have faced that supply of a sufficient amount of adequately trained labour is a very difficult policy element to handle in planning processes – difficult both regarding the possibility to be proactive and foresee the quantitative demand for different occupational categories and regarding the qualitative demand for learning and knowledge in these occupational categories which are continuously upgraded internationally. During the 1990s many initiatives have been taken to upgrade the labour force and to build up education systems that try to match the fast changing demand (Kuruvilla et al. 2002). We consider these human resource initiatives as very important and crucial in the two countries transformation processes from mainly labour intensive to more knowledge intensive forms of production. It is about moulding a new mindset regarding skills and education – lifelong learning and more self-reflexive learning (Lee Hsien Loong, 2002). Both young and older people must learn to handle flexibility. They must face that they have to learn new jobs, go to school again and afterwards they cannot be sure to get a job although their chances are improved. There are many interests involved in this transformation process and there are many barriers not only on the labour market and in the training systems, but also culturally and socially.

This chapter analyses human resource initiatives in Malaysia and Singapore especially in 1990s as a problem of institutional governance, and explains its strengths and weaknesses in terms of how public and private institutions are capable to handle the problem to balance supply and demand of an adequately trained labour force. The analysis focuses on key actors in the process – government institutions, local business and multinational companies. Both governments seek to engage these key actors in pro-active human resource policies and they use the challenge of global competition as stick and carrot in their policies. In the type of national economies, which previously were dominated by labour intensive forms of production, the interest and incentives to invest in human resource development were low. Training costs engenders resistance in particular among employers who are not used to think in a long-term perspective. It is not only small and medium size local employers who try to avoid these types of investments but also multinational companies. Their attitude is often that they need not invest in training of employees because they expect that they can hire the adequate trained labour on the labour market. The two governments have sought to build alliance with leading foreign and local companies and interest organisations against this resistance to invest in human resource

development. We will analyse to what extent the two governments are able to use this alliance building in their attempts to pursue pro-active human resource policies. Which interests tie alliances together? How are the two countries competing with each other and internationally in their human resource policy?

This chapter is organised in the following way. The next section reviews the discussion on the state as an active player in human resource development in newly industrialised counties and then looks closer on government policies in Singapore and Malaysia with emphasis on institution building and the role of the private sector and business organisations in this process. Before going into an analysis of human resource initiatives we discuss connections between changes in human resource policy in the two countries and changes in their industrial development. After this two section we focus on examples of transition to knowledge economy in the two countries. We analyse how the two governments build up alliances with leading foreign companies to speed up this transition. The main question is how human resource development follows suit. The last section before conclusion discusses how the partnership arrangements between the two governments and leading foreign and national companies create an industrial milieu and an institutional set-up that facilitate a transformation of the two countries to knowledge economies.

Institutional transformation, the state and the private sector

Singapore started before Malaysia in the process of changing the economy from labour intensive to more skill intensive forms of production. Therefore, experience with governmental institutional support and coordination among various actors whose interests might conflict with medium and long terms development goals is on a more advanced stage in Singapore than in Malaysia. Although the Malaysian government never officially has declared Singapore's institution building as a model it is evident that the Malaysian government has looked over the shoulders to Singapore's experience. Many institutions in human resource development have their for-running in Singapore. For instance, the set-up of human resource development funds based on a levy-rebate scheme to promote training in companies or the co-operation between government institutions and multinational companies leading to development of training centres.

The Singaporean experience of transforming the economy from labour intensive to more skill intensive forms of production is an illustration of an activist state policy with no crucial actors fighting against this policy. Close

ties between business and state elite with the state elite as dominant in forming long-term economic policies has made the pro-active state policy possible. An important player in the transformation process has been the Economic Development Board (EDB), which since 1961 has had a crucial role in attracting foreign investors and set up medium and long terms plans for Singapore's economic development (Lee Kuan Yew 2000; Schein 1996). Together with ministries and other governmental agencies EDB has since the late 1960s sought to move the Singaporean economy up the skill development ladder. It has been hard to climbing up the rungs even though the main actors have been supportive in the transformation process. Experience from many other countries tells that change of employment and skill structure is a long process facing many barriers not only of financial nature but also of cultural and social origin. EDB has throughout the period from 1970 to 2000 set up strategy plans to move the Singaporean economy from unskilled, labour-intensive industries to knowledge-intensive industries and services. In this period an exceptional transformation has taken place, but still in 2000 more than 40 per cent of the population was unskilled workers. The younger generations are the main skill holders while the generations of 40 plus are mainly unskilled. By using the stick and carrot method the government tries to attract unskilled workers to participate in skill upgrading processes. The government has introduced a life long learning programme, in which it emphasises that demand on unskilled labour will diminish in the future and that the only insurance against unemployment is education and training. The pressure on unskilled workers to participate in this skill-upgrading programme is massive in a high achievement oriented society as the Singaporean (Lee Hsien Loong 2002).

The pressure to move up the skill development ladder became first an issue in Malaysian economic policy from the mid 1980s (Felker 1999). Unlike in Singapore rising wages were not before the late 1980s eroding the ground for labour intensive forms of production. The agenda in Malaysia up to the late 1980s was to increase employment especially through Malay migration from rural areas to the urban manufacturing centres and to reach the goal of primary schooling for everybody. This goal matched with the need in labour intensive forms of production.

In the skill transformation process the Prime Minister's Office has set the overall agenda as it has done in all other significant areas in the last thirty years under former Prime Minister Mahathir's leadership. Although the state elite has a dominant position as in Singapore the business elite and the whole population is ethnically more divided. Chinese business has since long

dominated Malaysian indigenous economy and the Malays have been underprivileged. Skill transformation, economic upgrading and human resource policy in Malaysia has therefore had a double purpose: to develop the whole economy but to give the ethnic majority, the Malays or Bumiputras preferential treatment regarding education, jobs and ownership.

The Malaysian government has not developed an agency, which is comparable with the Economic Development Board in Singapore. The Economic Planning Unit has submitted medium and long terms economic plans but it has not had the same role as EDB to attract foreign investors and make linkages between public and private actors. The prime minister's office and the ministry of trade and industry have sought to play this role (Milne and Mauzy 1999). Especially after mid 1980s, the impact of foreign investors on the skill development in Malaysia has been significant. The Prime Minister's Office has supported alliance building between leading multinational companies and public agencies to set up different training facilities, for instance Skill Development Centres on local state level. Just like EDB the Malaysian government has together with multinational companies from Germany, France and Japan established institutes for technological development and training. By supporting these joint institutions the government has sought to speed up the training process and move workers to more knowledge-incentive areas.

Although the skill transformation process in Singapore and Malaysia is running in different speeds the two processes have as suggested many similarities connected to institution building especially in the way the two governments have built up joint institutions with foreign actors. We will later in this chapter outline how the two governments try to build alliances with leading foreign investors to develop IT and bio-tech centres but before that we will discuss the connection between change in human resource policy and industrial development.

Change in the HRD policy agenda due to changing industrialisation policy

Economic development in Malaysia and Singapore has many similarities in regard to opening their economies for foreign direct investment and in regard to supporting development of government linked companies who have obtained special advantages within economic strategic areas. However, there are also some important differences, which make comparisons inadequate. Singapore has no agricultural sector and no extraction industries

such as mining and oil. In our account of the industrialisation process in the two countries these differences are not in focus as we are more concerned with how the overall industrial development has influenced HRD policies. However industrial upgrading and human resource development in Malaysia has no doubt been slower due to the large plantation sector and unskilled or semiskilled export industries with little interest in education and higher wages. But both countries have in the last twenty years aimed at changing the emphasis in their economic policies. The governments have recognised that they cannot keep on competing with low labour cost countries because of the increasing wage level for unskilled labour in the two countries (Lee Kuan Yew 2000; Mahathir 1998). Additionally, they have recognised that if they continue to prioritise labour-intensive forms of production it will slow down their strategic plans of developing their countries into modern industrial economies based on science, technology and skilled labour.

Singapore's climb up the ladder has been closely linked to the interplay between foreign direct investors and government agencies, with the Economic Development Board mastering this linkage and leverage strategy. In the beginning of 1980s, the then Minister of Trade and Industry Goh Chok Tong talked about the second industrial revolution in Singapore (Schein 1996). This revolution had to take place because of changing condition for Singapore to compete in the traditional labour intensive production areas. The wages were rising because of shortage of labour. MNCs manufacturing textiles and shoes were increasingly setting up production in other countries in the region. The Singaporean government was therefore compelled to shift focus in its economic policy. It had to attract high-tech industries and services connected with manufacturing, tourism and finance. These industries were willing to pay higher wages and invest in human resource development. Through financial and non-financial incentives and especially human resource policies the government tried to change the inflow of foreign direct investment to higher value-added areas. Previously, the emphasis in human resource policy was on primary and secondary schooling, now the government recognised that it was necessary with greater investment in tertiary education, especially to increase the number of graduate engineers and to expand the whole technical education sector.

With this shift in economic policy the government created problems for indigenous and foreign companies who operated in low cost labour sectors, but who did not want to cut their ties to Singapore. From the late 1980s a new regionalisation strategy tried to solve these problems. The government and EDB began to evolve a policy in which EDB was developer and dealmaker

between its neighbour countries, the MNCs and indigenous companies – forming a regional division of labour. Setting up industrial parks in neighbouring Indonesian Islands and the Malaysian state of Johor EDB could extend Singapore's industrial base and still continue to attract labour-intensive manufacturing industries. It could offer sites with an abundance of cheaper labour and at the same time the MNCs could set up regional headquarters in Singapore.

Singapore's transformation of human resources

The transformation of Singapore to an Island of knowledge-based industries and services is a long process (Chia Siow Yew 2001). The government has recognised that it will take decades to make this transformation. However compared to many Western countries Singapore has succeeded in accelerating the development even if the government, EDB and the National Wage Council went to far initially in 1979 with enforced upgrading. Wages were recommended to be raised by about 36 per cent 1979-81, pension fund contribution was increased by 25 per cent and 4 per cent of basics wages had to be paid to the Skill Development Fund (Yuen Chi-Ching 1998: 140). Not only the labour-intensive industries were hit hard. The severe cost increases affected also higher value added industries and FDIs generally which was not intended. The government had to revise its policy and slow down the upgrading process. Further more Singapore experienced a recession in 1985 and had to moderate the tempo of transition.

Singapore has succeeded in attracting knowledge-intensive MNCs during the 1990s but the transformation of the skills structure is a slow process. It is not only a matter of mass enrolment of students to tertiary education, but it is also a matter of developing skills suitable to knowledge based industries and services. Many of these industries and services demand employees with ability to independent assessment and decision-making. The education system in Singapore has not so far given high priority to such skills. But the government and planning agencies are very alert to demands that can affect the competitiveness of the island. Therefore, the focus has in recent years become more and more on analytical and independent thinking. This shift in focus is not easy because it not only involves another way of learning, but it also means another attitude to the authoritarian and patriarchal tradition in Singapore (Rodan 2002).

The industrial revolution that Goh Chok Tong talked about in the beginning of the 1980s in Singapore was primarily a change in economic policy. In a

twenty years perspective the effect of this policy change appears in statistics on occupational development.

Table 1

Employment by occupation 1980-2002 (per cent) in Singapore

	1980	1985	1990	1995	2002
Professionals	0.0	4.5	4.2	7.3	11.4
Managers, Working Proprietors &Senior Officials	6.3	7.6	8.6	12.6	13.2
Technicians & Associate Professionals	11.7	9.9	11.5	15.8	16.8
Clerical	13.8	14.4	13.1	12.9	13.3
Service &Sales Workers	14.6	15.4	13.8	12.3	13.3
Production, Operators, Cleaners &Labourers	46.3	42.3	44.5	34.6	29.8
Agricultural & Fishery	1.6	1.1	0.3	0.1	0.1

Source: Singapore Yearbook of Manpower Statistics various years.

The change in the composition of employment by occupation is evident after 1990. The number of employed in production and related jobs drops with 10 per cent from 1990 to 1995, while the number of professionals and technicians increases in the same period. It was the change that Goh Chok Tong wished to set in motion in the early 1980s. It took nearly 15 years before the result of the economic policy appears in statistical change in the composition of the employment. The economic recession in 1985-86 is hardly an explanation although it took some years to re-establish the high growth rates. Structural conditions are more likely explanations of the long change period. Our focus here is on human resource development as one of the structural explanations. (Other factors like industrial upgrading policies and selective incentives to attract higher value-added FDIs are of course most important but will not be

analysed). The enrolment of students in secondary and tertiary education illustrates the pace of change in the education system and suggests how long time it takes to change the basic condition of the skills structure. The Singaporean government has placed great effort to speed up the change pace. The growth of tertiary enrolment from 8 to 39 per cent from 1980 to 1997 is evidence of this effort.

Table 2
Enrolment to secondary and tertiary education (per cent) in Singapore

Secondary Per cent of relevant age group.		Tertiary Per cent of relevant age group.	
1980	1997	1980	1997
60	74	8	39

Source: 2001 World Development Indicators, the World Bank.

Malaysia's transformation of human resources

The structural change that began in the early 1980s in Singapore was a decade later to start in Malaysia. The conditions were different and the appearance was only in the most industrialised areas e.g. Penang, Kuala Lumpur, Selangor and Jahor. The Malaysian government's strategic reasoning was similar to the ones in Singapore. The Second Industrial Master Plan designed the contours of the new economic policy. The emphasis was on technological and human resource development. Like in Singapore the prime drivers for economic growth and export orientation were multinational companies, especially in electrical and electronic industries. Through financial and non-financial incentives the government tried to attract such MNCs. The competition was sharp with Singapore whose government was offering the attractive MNCs the same benefits. During the 1990s a growing number of MNCs set up more knowledge-intensive production sites in Malaysia but not as many as in Singapore. The collaboration between these MNCs and medium size and small local companies had so far been limited which meant that many local companies was reluctant to participate in upgrading of their work force. During the 1990s the government laid great emphasis on involving the privatised government-linked companies in the

transformation of the economy. These companies were based on knowledge (technology and human resource) transfer over several years from the leading multinational companies operating within each industry in Malaysia. The government-linked companies were as the government holding companies (Temasek) in Singapore picked out to be national champions in the economic development towards a more knowledge based economy. Petronas (oil extraction), Telekom (telecommunication) Tenaga National (electricity) Hicom (heavy industries and car manufacturing) are examples of national champions who have a special obligation to be engaged in technology and human resource development. They have set up training centres and technical universities of their own.

Although labour intensive forms of production are still very wide spread in the Malaysian economy the statistics shows that a process is set in motion towards more knowledge-based forms of production. The composition of employment from 1980 to 2000 indicates a modernisation of the agricultural production and a migration from the countryside to manufacturing industries and services. Contrary to Singapore production and related workers increased up to 1995 and is still in 2000 almost one third of total employment. However there is also an increase in more knowledge-intensive groups such as professional, technical and administrative employees. But white-collar categories are smaller than in Singapore and agricultural workers still a large group of 18,1 per cent in 2000.

Table 3

Employment by occupation (per cent) in Malaysia

Occupation	***1980***	***1990***	***1995***	***2000***
Professional, Technical & Related Workers	6.7	8.8	9.9	11.0
Administrative, Management& Related Workers	1.7	2.4	3.2	4.2
Clerical &Related Workers	8.2	9.8	10.9	11.1
Sales Workers	9.7	11.5	10.9	11.0
Service Workers	9.0	11.3	11.1	11.8
Production, Transport & Related Workers	28.5	27.6	33.9	32.8
Agricultural &Related Workers	35.7	28.3	20.1	18.1

Sources: ILO Labour Statistics www. laborsta.ilo.org , Seventh and Eighth Malaysia Plan 1996 and 2001

This change in composition of employment reflects a change in human resource policy. Like Singapore the change of economic policy in the late 1980s in Malaysia was also followed by a change of emphasis in the education policy. In Malaysia education policy has up to the late 1980s primarily been part of ethnical and distribution policy. In the 1980s the objective of 100 per cent primary schooling was more or less achieved. From the late 1980s the agenda was to increase the collaboration between the public and private sector in training and education. An array of institutions was set up to facilitate this collaboration. We will in the next section look loser into some of these institutions that support training in companies. Before that we will in table 4 show changes in the enrolment of students to secondary and tertiary education in the last 20 years. Compared to Singapore tertiary enrolment in Malaysia is still rather low in 1997 – 12 per cent versus 39 per cent.

Table 4

Enrolment of student to secondary and tertiary education (per cent) in Malaysia

Secondary per cent Of relevant age group		Tertiary per cent of relevant age group	
1980	1997	1980	1997
48	64	4	12

Source: 2001 World Development Indicators, The World Bank.

HRD policies to improve learning capacity in companies

Not many companies in Singapore and Malaysia were in the beginning of 1980s investing in training of their employees. The scenario that Goh Chok Tong in those years outlined of a second industrial revolution with upgrading of technological and human resource development did not meet much response from neither indigenous nor foreign companies. In labour intensive small and medium size companies the principle of learning by doing had been prevailing practice and neither employers nor employees showed interest in plans of skills upgrading (Kuruvilla et al. 2002). The pressure came from the government. As mentioned the first initial steps in 1979 were to tuff and costly for most companies and had to be modified.

Through a new legislation on skills development enacted in 1984 employers had to contribute 1 per cent of gross salary of all employees earning less than S$ 1000 per month (revised to S$ 1500 in 2000) into a fund. Employment in higher value-added production with higher salaries is not targeted. Employers can apply the fund for reimbursement of training expenditures. But the fund does not cover all their expenditures. It covers expenditures up to 80% of each employer's contribution. The aim of this skills upgrading policy is to encourage companies to invest in training that increases the skills level and improves productivity. Companies, who fit into this policy, are provided higher per cent of reimbursement of their expenditures than those companies who stick to more low skilled operations.

When the government set up this scheme for skills development small and medium size companies did not queue up to apply the fund for grants. Normally MNCs and bigger companies had no problem. By 1990, nearly 30 % of the workforce had received grants from the fund. During the 1990s the number of employees receiving grants to

training was increasing, not by great leaps forward, but incrementally. As mentioned before it is a difficult and slow process. Other countries also face hesitancy or reluctance from small and medium size companies to engage in training for their employees. By 1996, 33% of the workforce was receiving training connected to grants from the fund (Kuruvilla et al. 2002). Compared to Denmark the figures are rather high. By 1999, roughly 18 % of the workforce in Denmark was receiving training under the programme of Adult Education and Continuing Training (www. uvm.dk). Although the Skills Development Fund's grants cover a wider range of training activities than the Danish programme, the figures in 1996 suggest on the other hand that the skills upgrading policy in Singapore has reached a substantial level in the last twenty years.

To support the skills upgrading process in the companies the government and the EDB established jointly funded training centres with foreign governments. This initiative highlights EDB's policy not only on training, but also more generally. It wanted to invite governments from leading industrial countries to participate in skills upgrading with the purpose of attracting leading MNCs to set up more value added forms of production in Singapore. During 1979-84, EDB set up 4 jointly founded institutes. The Japan-Singapore Government Training Centre (specialising in metal machining, electrical fitting, electronics instrumentation), the German-Singapore Institute for Production Technology, the French-Singapore Institute for Electro-technology, and the Japan-Singapore Institute for Software Technology (Schein 1997). These institutes have later expanded to host leading MNCs who participate in combined training projects as partners. The staff and instructors are trained at various jointly established centres, for instance at Siemens Nixdorf-EDB centre for advanced die and tool making, the Bridgeport-EDB computer numerical control laboratory, and the Mitutyo-EDB laboratory (Kuruvilla et al. 2002). The EDB has set up partnership with several other leading MNCs to provide training in various new technologies. This partnership model has been a success in the sense that many foreign knowledge-intensive companies within manufacturing and service industries have established subsidiaries in Singapore since Goh Chok Tong in the beginning of 1980s set the political agenda for the second industrial revolution.

Malaysia has developed similar training arrangements as Singapore. In 1992 the Malaysian government set up the Human Resource Development Fund (HRDF), which was based on a levy-rebate scheme like the Skills Development Fund in Singapore. Employers who have contributed 1% of the total payroll for at least six months are eligible to claim a portion of permitted training expenditures. The fund sets the rate of reimbursement depending on the type of training and company size. For companies with more than 200 employees the rates are generally lower (60 %) than companies with less than 200 (70%) (Fleming & Søborg 2002).

During the 1990s, the number of companies and industries, which were covered by HRDF activities expanded, and recently, energy, education and training companies have been included in the scheme. In 2000, a total levy of RM 833 million was collected, of which RM 488 million or 58.6 % were disbursed. A total of 2.6 million training places were approved under different training schemes (Eighth Malaysian Plan, 2001: 110). The most widely used scheme had been the Training Grant Scheme (80.7 % of total training places), which covers expenditures for in-house training by external trainers.

Like EBD in Singapore the Malaysian government has also established partnership arrangements with the same foreign governments. In addition to these jointly funded training institutes Malaysia has also set up Skills Development Centres at the local state level together with private foreign and domestic companies. There are 14 industrial training centres, 4 advanced technology centres, a Japan-Malaysia Technical Institute and a centre for instructor and advanced skills training.

All these skills upgrading initiatives are in recent years by the Malaysian government viewed in the light of a life long learning policy. The Ministry of Human Resource has through the National Vocational Training Council set up a national skills recognition system with the aim of identifying core skills of key industries and accelerating training and certification of these job skills (interviews 2002). By recognising core skills of key industries the government seeks to motivate employers and employees to participate in skills training programmes which support development of new technology and organisation within manufacturing and service industries, and thus leading to employability. Like in Singapore and many other countries the Malaysian human resource development agencies and institutions are facing problems of engaging small and medium size

companies in the training activities. To set time off for training when the firm has a small staff with no possible replacements is mentioned as the most difficult practical problem (interviews 2002).

Transition to the knowledge economy? A k-gap?

The concept of knowledge economy or 'k-economy' is widely used in Malaysia and Singapore. Both governments use it to describe the transition to more knowledge-intensive forms of production and employment. A higher level of education and more investments in information technology and communication are seen as necessary steps in their development strategy – but also as a faster route to catch up with leading industrial countries. In this connection the concept of knowledge gap or 'k-gap' is also very common (WB 1999) to describe and measure gaps in global knowledge development - similar to global income gaps between countries and employment groups. Some authors argue that the new knowledge economy only will expand the k-gap and income gap between rich and poor and that it is impossible to leapfrog to higher levels of development (Persuad 2001). Measurements of k-gaps can be constructed in different way as shown by Evers (paper 2002). Conclusive evidence can often be difficult. For instance show data on R&D or the World Competitive Index (http://www01.imd.ch/wcy/ranking) that the k-gap between Malaysia and OECD countries is widening. On the other hand shows WB and Malaysian statistics on Internet users and Personal Computers that the k-gap between Malaysia and other ASEAN countries (except Singapore) is expanding, with Malaysia far ahead (Evers 2002: 17). But to be the most IT savvy does not necessary mean the most knowledge intensive ASEAN economy. The different types of results show us how difficult it is to measure k-gaps. Evers interpretation is simple: With economic development a necessary consequence is widening income and knowledge gaps: both within a country (Malaysia's western and eastern part of the Peninsula) and within a region (ASEAN) or globally (OECD vs. developing countries). We are in the following concentrating on an institutional analysis of human resource development and knowledge transfer without quantitative measurements of the effects.

The governments both in Malaysia and Singapore have during the 1990s focused on infrastructure and institutional arrangements, which aimed at making the two countries attractive sites for knowledge-

based industries and services. Although the two governments helped indigenous companies - especially government linked companies - to upgrade technologically and organisationally, they recognised that the next leap forward was depending on knowledge, technology and investment inflow from leading MNCs. Both governments had as mentioned set up partnership institutions with foreign governments and companies and the many projects in the 1990s were attempts to develop these partnerships.

The Multimedia Super Corridor (MSC) in Kuala Lumpur and the life sciences industry in Singapore are two high profile projects, which illustrate the two countries dependence on foreign investors and at the same time the importance of skills development and education. The projects also illustrate the new development goal to set up the most advanced industries in new areas and to be in front globally when it comes to R&D, technology and human resource development. In this way the knowledge gap should be closed.

The MSC project outside Kuala Lumpur is a cornerstone in the Malaysian government's national IT strategy (Mahathir 1998). In a 15 x 50 km "corridor" the government seeks to set up infrastructure and institutional arrangements for development of information and communication technology (ICT). The aim is to provide the best conditions for investors by provision of an advanced telecommunication infrastructure, enactment of an up-to-date legislative framework for ICT development and financial and other incentives for investors. Although differing in scope and content the strategy of the MSC project is similar to the government's strategy in the past 30 years regarding infrastructure and incentives. The MSC project is also facing the same problems as the old free zones, for example, lack of linkages between multinational and local companies, and lack of technological upgrading and skilled labour in domestic companies. These problems were accentuated as the Malaysian government by unlucky coincidence chose to become a world leading IT-hub in a period of a global bubble burst in the IT-industry.

From the very outset of the MSC project former Prime Minister Mahathir Mohammad emphasised that the MSC and the national IT strategy were not linked to the New Economic Policy (NEP) policies, giving preferential treatment to Bumiputeras (Malays) in education and employment. All the positive ethnic discriminations, which are part of the NEP and Bumiputera policies are not supported by the

national IT strategy. Thus Malay owned companies do not have special privileged access to the MCS. Former Prime Minister Mahathir has at several occasions said that Malaysian education and business policy in the information age has to rest on 'meritocracy' (competence) and no longer on special ethnic privileges (Mahathir 1998; Mahathir 2002). These new principles are the same as Singapore's.

In Mahathir's opinion the political and economic agenda for the emerging knowledge economy has to differ from the NEP period. The Malays need not any longer special privileges. They were necessary during the NEP period to bring up the Malays on same footing as other ethic groups, i.e. the Chinese. But now Bumiputera privileges are a drag on the economic development according to Marathir because they are sleeping pillows for Malays in education and business (Mahathir 2002).

Mahathir's break with the NEP period is a signal not only to the Malay part of the population but also to leading foreign investors, especially IT companies who want freedom to employ and train workers of their own choosing. The government needs collaboration with these foreign investors to build up its national IT strategy and the MSC project, and therefore Mahathir's signal may be useful showing that the future policy is not building on special privileges.

Political signals are important for attracting foreign investors, but the government knows that the success of the MSC project is ultimately dependent on the right combination of attractive financial and non-financial incentives on the one hand and skilled labour on the other hand. It is a hard task to hit this combination and especially when the government does not want every IT companies to invest in the Corridor. It only wants companies of high IT standard and therefore the companies have to apply for MSC status before they are allowed to invest in the Corridor. So far, the registration of foreign IT companies applying for MSC status has been a success. But many of them have not yet set up production facilities in the Corridor. The IT companies investment decisions are highly dependent on how the government succeeds in providing skilled worker and transforming the society at large into a knowledge-based economy. This is a huge and challenging task considering the fact that Malaysia is still a second tier NIC. Although IT companies who applied for MSC status from the very beginning were guaranteed freedom of employment

and communication, this was possibly too limited a policy for some IT companies, as it only applied to the Super Corridor.

One of the major initiatives in the national IT strategy for paving the way to a knowledge-based economy is the so-called seven flagships application. At the moment none of the flagship applications is fully implemented. These flagships are Smart Schools, Multi-purpose Card, Telemedicine, Electronic Government, Research and Development Cluster, Borderless Marketing and World Wide Manufacturing Web.

The focus on the national IT strategy and the MSC project reflects the Malaysian government's attempt to loosen the economy's heavy dependence on electronics. Singapore is also focusing on IT as an attempt to trim its dependence on electronics, but without any special geographic zone and with its ITC policy as an integrated strategy in all government departments (interview 2002). Unlike Malaysia, the wider educational and institutional setting in Singapore is tuned in to the competence demands of a knowledge-based economy. Therefore, the competition between Malaysia and Singapore is fierce on attracting leading IT companies. Provision of a competent labour force, financial incentives and an excellent infrastructure are the minimum conditions for attracting these leading players. The two governments also have to guarantee freedom of expression and communication. These two conditions cut deeply into both governments' authoritarian traditions and way of wielding power, and may be the most difficult conditions to fulfil.

Singapore is, however, not only focusing on IT as a way out of its dependence on electronics. In recent years, the government is giving high priority to development of a biomedical sciences industry. It aims at making Singapore a regional hub of life sciences. A biopolis centre in Buona Vista (township), dedicated to biomedical research is housing more than 2000 international and local scientists and professionals, and is the first landmark of Singapore's effort to be a regional hub. As in the past, the Economic Development Board is the grand architect of this project. It has succeeded in attracting the leading biomedical companies covering pharmaceuticals and medical technology. They are not only setting up manufacturing facilities, but also research laboratories. Although this industry in Singapore is a fledgling it already accounts for about 12 per cent of the total manufacturing output or almost 3 per cent of GDP (The Straits Times 2 Sept. 2002).

The life science project in Singapore is an example of interplay between a regional growing market for biomedical sciences products and governmental capacity to spot possibilities and provide the right investment and human resource conditions. The Singaporean government has in recent years made a great effort to build up public and private universities and research centres. Through its large network especially in the United States EDB has succeeded in attracting 10 of the world's leading universities to set up branches in Singapore. At the same time the government has employed many foreign scientists and teachers at the local universities in order to increase the standard (Straits Times 13 Feb 2003). No doubt, these education and research environments influence leading multinational companies within the biomedical sciences industry. The EDB knows that, but it also knows that it is not an over night project to provide the educational and especially the scientific conditions to set up a life science industry. Therefore, as in similar cases where the EDB has been facing limits because of lack of local competence it now seeks to overcome these limits by buying foreign manpower. So far, the strategy is successful if it is gauged by leading multinational companies' investment in life sciences manufacturing and research facilities and by the soaring growth rates.

Like the MSC project in Malaysia the leverage for the life science project in Singapore is as suggested above a partnership model. In the account beneath we focus on how the governments set the agenda for collaboration and which type of companies and organisations that the two governments involve in this collaboration.

Partnership as a development model

The Economic Development Board in Singapore has from its outset placed great emphasis on partnership with private companies and organisations that represent best practise in technology and management know-how. As a learning organisation and development board that transfers knowledge to all other relevant departments and agencies in Singapore the sourcing of technical know-how and organisational knowledge abroad has also been an important task for EDB.

After independence in 1965 the overall agenda was to survive without Malaysia as an economic hinterland and instead build up partnership with leading multinational companies that both were interested in investments and to train Singaporean workers. EDB

wanted MNCs that could provide high standards in technology and management. The economic conjuncture was favourable to attract especially American and European MNCs because they were restructuring their production organisation. Due to lower transportation costs and improved communication they were interested in setting up labour intensive parts of their production in low wage countries that could provide good infrastructure, political stability and hard working labourers. The Singaporean government saw this conjuncture as a way forward and became an outstanding example of how a less developed economy could gain from the export oriented industrialisation model based on FDIs and competent and committed political governance.

The guiding principle for EDB was that Singapore had to be more rugged, better organised, and more efficient than others in the region (Lee Kuan Yew 2000:58). If Singapore was only as good as its neighbours there was no reason to make investment here. This fact has marked Singapore's history since 1965 and it has set the agenda for politics, educations and working life. The overall political goals have been stability and economic growth. The ruling party, People Action Party (PAP) has provided the political foundation for realising these goals. Through detail planning policies the PAP governments have built up political and administrative institutions which have provided political stability in every corner in the society and which have emphasised meritocracy principles and high achievement norms in education and working life. The partnership model that EDB created fitted well into these goals. The leading foreign companies, which EDB wanted to engage into partnership had political stability and hard working people as their first priority when searching for suitable places for FDIs. For EDB partnership arrangements were first and foremost agreements for transfer of technology and management know-how. Through these agreements leading foreign companies and government agencies built up technological and human resource development projects, which the indigenous private sector had not technological and human resource capacity to set up at that time. For instance, the German-Singapore Institute, the France-Singapore Institute and the Japan-Singapore Government Training Centre were as previously mentioned places where private companies and government agencies were working together on providing skills required for foreign investors in the short run, but also places for transfer of new skills to domestic companies.

EDB has not skipped this partnership model. On the contrary, the model has been developed during the 1990s. A review over recent projects initiated by the Economic Development Board shows that partnership is a crucial principle in the Board's policy. For instance, EDB is promoting the life science project by going into partnership agreements with leading biomedical companies. Like in the 1980s EDB is in the life science project securing funding for partnership institutes, providing the best laboratory facility for biomedical research, bringing in as much "foreign talent" as is required to achieve the goals (FEER Jan. 9, 2003).

The Singaporean partnership model is tuned into the upper echelon in the private sector and especially companies and organisations that can transfer best practice to the island. EDB does not go into partnership with anybody. It pursues a very selective policy in harmony with the overall meritocracy governance style. But EDB is not blind for the Achilles Heal in this policy: A gap between the participants in the partnership arrangements and smaller and new economic actors can easily arise. Especially in 1990s the government has placed great effort on human resource development programmes and upgrading of productivity standards addressing small and medium size local companies. For instance, the Technopreneurship initiative was announced in 1999 to boost the technological development of entrepreneurs both in established companies and among start-ups (Chia Siow Yew 2001). The initiative reflects that especially small and medium size companies are lagging behind foreign multinational companies and governmental holding companies.

To summarise: Singapore can with its partnership model transfer knowledge – decrease the knowledge gap and converge human resource development between leading multinational companies and local companies and institutions – a process taking place on top and middle management level. However this upgrading does not have to correspond to knowledge transfer and skill upgrading of the workforce lower down or in local SMEs. In fact knowledge-intensive economic development makes a k-gap of this type more or less inevitable. But the government in Singapore pushes very hard for training programmes to reduce the k-gap to the unskilled workers and the small and medium size sector of the economy – it is not waiting for trickle down effects of the market.

The Malaysian government has also developed a partnership model, which in many respects is similar to the EDB model. Central government planning institutions such as the Economic Planning Unit (now called National Economic Action Council) and the Malaysian Industrial Development Authority (MIDA) are active players in setting up partnership arrangement with private companies especially foreign multinational companies. As mentioned earlier the driving concept of the Multimedia Super Corridor is a partnership model in which leading foreign companies go into partnership with governmental institutions and local private companies. The same triangle model was established for the Skills Development Centres, which have been important in training and skills upgrading in several of the Malaysian states where smaller local institutions alone did not have capacity to set up such training facilities. But it is not only this triangle that constitutes the partnership model.

Like in Singapore privatised, semi-governmental companies are crucial partners in the government's plan of moving the Malaysian economy towards more high value added forms of production (Seven Malaysia Plan 1996; Eighth Malaysia Plan 2001). It is corporate groups such as Petronas, Telekom, Tenaga Nasional, and Hicom that primarily go into partnership arrangements with government institutions. The government has emphasised that partnership arrangements within education and human resource development has a high priority because lack of skilled labour is a barrier to many of its plans of upgrading Malaysia's economy. The government wants four mentioned corporations to act as national champions, technologically and organisationally. Also regarding education and human resource development the government expects them to be front-runners and best practice performers. For instance, with the law that allows private universities in Malaysia the government has encouraged these corporations to set up technical universities alone or in partnership with the government. Telekom's Multimedia University in the Multimedia Super Corridor is an example. The university does not only enrol Telekom's staff but also other students who want to take courses in telecommunication and multimedia.

In Malaysia human resource development, knowledge transfer and the partnership model also have a strong political and ethnical dimension. Unlike Singapore the issue of achieving best practice and pursuing a meritocracy policy is very sensible in Malaysia because of the ethnic distribution policy since the start of the New Economy

Policy 1970. The purpose of the ethnic distribution policy has been to lift the Malays or Bumiputeras, the ethnic majority, to a higher level by preferential treatment in business, education and jobs and reduce the socio-economic domination of ethnic Chinese in these areas. The goal of the Bumiputera policy has been to reduce the human resource and knowledge gap between Malays and Chinese.

Has the Bumiputera policy come to an end? Has it become a barrier to the knowledge economy? International and domestic criticism for educational and labour market discrimination has been raised. Former Prime Minister Mahathir, who strongly implemented the policy for more than 30 years, has on several occasions during the last couple of years regretted that the ethnic distribution policy became so deeply rooted in the Malays' mindset. The Malays have according to him become accustomed to preferential treatment every where and it has led to a culture of the easy way out of everything and "if we discount of the non-Malay contribution to the nation's economy, Malaysia would be not much better than some of the African developing countries" (The Straits Times July 30, 2002). Indeed a hard moral verdict!

Whether Mahathir's worries are exaggerated is not an issue here, but they suggest that the Bumiputera policy is under press in the knowledge economy and criticised by leading MNCs and local companies. A partnership model underpinning best practice and meritocracy principles like the one in Singapore is very difficult to carry out in the socio-economic and political system in Malaysia both in the top and on lower levels. However, Malaysia is still very dependent on partnership with leading MNCs. Neither the Multimedia Super Corridor project nor the new Bio Valley Malaysia (The Business Times May 24, 2003) can be realised without the partnership with leading foreign companies. But these companies do not want to invest in new projects if lack of skilled labour is a recurrent problem and they have to discriminate ethnically when recruiting or promoting employees. Thus, the partnership institution with foreign multinational companies may in Malaysia be facing a difficult time, especially in knowledge-based industries and services.

Conclusion

Singapore and Malaysia are examples of newly industrialised countries, which have gained by going into partnership with foreign multinational companies. The institutional set-ups, which these partnership

arrangements have fostered, have been crucial steps forwards in the two countries' transition from a more labour-intensive phase to a more knowledge-intensive phase in their industrialisation process. The Singaporean and Malaysian partnership models are similar in many ways. They incorporate global competitive pressure from leading multinational companies and their technological, management and human resource knowledge. Ideally, the two partnership models make it possible to transfer knowledge and to reduce knowledge gaps between partners in both private and public sectors in a continuing management and governance learning process. However, as we have emphasised narrowing or widening of the gaps is depending on barriers in education, network communication capability and transfer in practice.

There is also a competitive pressure between Singapore and Malaysia. The competition presses government agencies to learn from each other and especially from best practice in the two partnership models because the institutional set-ups are similar. As we have suggested Singapore and Malaysia are not on equal footing in this competition. There are differences in social power structure in the two countries. The elite in Singapore is much more integrated and interests of business organisations, political parties and trade unions are more coordinated than in Malaysia. Ethnically and politically the elite and civil society are more divided in Malaysia, but still the state has been capable to build a successful partnership model and form a proactive human resource policy.

Our analysis has shown that the above-mentioned transition from one phase to another in the two countries industrialisation is a slowly moving process. Change of skills structure and especially change of people's mindset to enter into skills upgrading is a long and complicated process. Even in Singapore, where the government is well known for its detailed labour market planning and cautious political governance of the citizens, it took more than ten years to speed up the intake of students to tertiary educations.

One of the most difficult problems both in Singapore and Malaysia is to motivate the unskilled workers to enter into a skills upgrading process. We have shown how both governments have set up programmes for lifelong learning and how they try to attract especially the generation of workers over 40 years old to begin training. The stick and carrot method is used to put pressure on these people. It is daily news in the media that labour-intensive industries

are leaving the two countries and the only way out of threatening unemployment is to enter skills upgrading programmes. In Singapore statistics indicates that an increasing number of unskilled workers have entered into such training programmes. In Malaysia the process of change is slower. Unskilled workers in Malaysia do not feel the same pressure as in Singapore, partly because there are still a lot of unskilled jobs, partly because there does not exist the same meritocracy and high achievement oriented mindset. Still the governments in both countries have set the focus on knowledge economy and human resource development. This knowledge discourse has become a very strong public agenda, an agenda that often seems stronger than in many Western countries.

The two governments are facing the problem of changing the skills profile of their educational system. Many of the new industries and services demand other skills and competences than Singaporean and Malaysian students have been taught. They demand independent analytical skills and a more open critical mindset. It takes time to change educational systems in which the teaching until now has been dominated rote learning. Meanwhile, Singapore tries to solve the skills shortage problem by attracting foreign talented workers. Malaysia has tried to do the same. The leading multinational companies with whom the two governments have gone into partnership to set up the new industries and services have not withdrawn from their cooperation. But especially in Malaysia they have been hesitating in carrying out their investment plan. We see it as an expression of their worries about supply of the right type of competences of labour.

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