

Executive Summary

Knowledge for development

Harnessing knowledge for development is not a new concept. Knowledge has always been central to development. It can mean the difference between poverty and wealth. The knowledge economy is not just about hi-tech industries and creating an innovative and entrepreneurial culture. Recent studies have shown that simply adopting existing technologies widely available in developed countries can dramatically boost economic growth and productivity. This paper highlights the Knowledge Economy (KE) issues that confront Sri Lanka and offers policy prescriptions that will allow the island to take advantage of the opportunities available in moving towards a knowledge based economy.

The knowledge economy consists of four pillars:

- (i) The business environment;
- (ii) Information infrastructure;
- (iii) An innovation system; and
- (iv) Human resources.

When judged against these four criteria, it is clear that Sri Lanka's progress when benchmarked against other countries remains limited. As the economy is shifting away from industry and agriculture towards a more service-based economy and as government is promoting the island as an offshore hub there is great potential for Sri Lanka to benefit from strengthening its KE pillars.

The Business Environment

A good business environment will create strong incentives for the private sector to be innovative and entrepreneurial. Sri Lanka's current business environment remains mixed. While it is relatively easy to open and close a business and it is easy to hire workers, it remains difficult to fire workers, license a new business and register property. Sri Lanka is strong in protecting investors and getting credit. Despite some reforms the commercial courts still take more than four years on average to process a case. And Sri Lanka ranks 158th out of 183 countries in the world in terms of ease of paying taxes.

Although Sri Lanka has made some progress in these areas, so far it is "too little, too late". Other more dynamic countries have improved their business environments at a quicker pace and the country has continued to slip in international rankings that measure the ease of doing business.

Information Infrastructure

In today's knowledge-based world, information and communications technology (ICT) plays a central role in economic growth and productivity. An increase of 10 mobile phone users per 100 people can boost GDP growth by almost 1 percent. And a 1 percent increase in the number of internet users can boost GDP growth by 4.3 percent.

The best way to encourage a high quality and low cost network to develop is by establishing a liberal regulatory structure that allows for competition and private sector participation. Sri Lanka has made great strides in this area since liberalizing the sector in the late 1990s. But Sri Lanka's high prices, low penetration rates and limited competition in certain ICT areas reflect an unfinished reform agenda that government should tackle immediately. Increasing the available bandwidth and bringing down tariffs will spur international investment in the sector and help to encourage the country's nascent Business Process Outsourcing (BPO) industry. It will also encourage providers to go to the rural areas that have so far been neglected.

An innovation system

The first step towards adopting an innovation culture is to adopt existing technologies and adapt them to the local situation. As labor rates in East Asian economies edge upwards, Sri Lanka has the potential to absorb existing technologies and production systems especially in the services industries. Like Singapore and Korea, it can then build on such a base to develop more innovative industries and creating newer technologies.

Although an earlier generation of excellent scientists was created in Sri Lanka, the national science and technology (S&T) system has fallen behind more dynamic countries and it is not able to create credible S&T graduates. The main reason for this is the predominance and lack of effectiveness of the public sector research and technology institutes. The lack of public resources has led to increasingly smaller R&D budgets that are currently less than one-tenth of the 1.5 percent of GDP that the President has pledged to devote to R&D by 2016, in the *Mahinda Chintana* government's ten-year, development strategy.

In addition to increasing public resources devoted to R&D and improving the incentive system in Sri Lanka's universities and research institutes, government can also encourage linkages between academia and the private sector, reduce the level of red-tape in the university system and introduce tax incentives for innovation.

Skilled Human Resources

Sri Lanka's ability to create a demand-driven education system that focuses on lifelong learning will determine the country's capacity to embrace the benefits of the knowledge economy. Sri Lanka has made great strides in moving towards universal literacy. To truly capture the benefits of the knowledge economy it will now need to improve the quality of education and expand access to tertiary education and vocational training.

Existing public sector institutions will have to have more autonomy along with greater accountability. Government can also increase the amount of spending currently devoted to education which has hovered around 2 percent of GDP in recent years.

Expanding participation of the private sector is a key requirement for improved quality, relevance and access to higher education in Sri Lanka. Establishing good quality private sector universities and other educational institutions will also help encourage young Sri Lankans to avoid travelling overseas and spending hard currency in neighbouring countries.

Government needs to encourage English language and increase the number of science and technology courses currently offered. At the lower levels the curriculum could be improved by focusing on how children learn rather than what they learn. Introducing problem solving skills and entrepreneurship at an early age will help reorient future graduates early on. Creating formal linkages between Sri Lanka's universities and the private sector will create a symbiotic relationship that will also help academia become more relevant.

Charting a way forward

This is an opportune time for Sri Lanka to begin its transition towards the knowledge economy. This paper evaluates Sri Lanka's ability to embrace the knowledge economy. It finds that the country has embarked on a new development strategy and is branding itself as an offshoring destination. To support these national objectives the government must focus on investing in key knowledge economy inputs; education, innovation and ICT.

The *Mahinda Chintana*, places employment creation at the center of its development goals. In 2005 Sri Lanka's 10 year development strategy, *Mahinda Chintana: Vision for a New Sri Lanka*, was unveiled and called for rapid growth of the country by providing the necessary support to domestic enterprises while encouraging foreign investment. The program underlies a ten year macroeconomic framework with an 8 percent GDP growth target for next 6 years and a higher target of 9-10 percent thereafter. The strategy also anticipates harnessing the benefits of global integration by strengthening bilateral and regional trade and investment relationships. Sri Lanka is looking to develop a large base of vibrant and competitive world class manufacturing industrial firms generating higher added value, higher profitability and a sustainable environment, while offering opportunities for improved job quality and higher family income to alleviate poverty.

In order to develop the national innovation system, the strategy encourages the development of research communities through the facilitation of dialogue and partnerships. The major goal of Sri Lanka's FDI policy is to attract foreign capital. It is intended that the living standards of the people would greatly improve through; the technology and skills transfer that ensues, the development of technical and managerial competencies, employment creation, public-private infrastructure partnerships, and diversification of exports into the knowledge based industry. To make this goal a reality,

Sri Lanka needs to improve its business environment to attract FDI. It is the basis for which improvement to the other three pillars (ICT, innovation, and education) depend on. The country will be unable to reap the full benefits of its investment in expanding education, ICT connectivity, or R&D intensity unless its broader institutional and incentive regime stimulate the most effective use of resources in these areas, permits their deployment to the most productive uses, and allows entrepreneurial activity to flourish to contribute better to Sri Lanka's growth and overall development.

In order for Sri Lanka to achieve the goals described throughout the paper, the country also will need to invest heavily in its people. The *Mahinda Chintana* states that sound and sustainable investment and growth, access to the benefits of the global economy, supportive public policies and an enabling environment for entrepreneurship and enterprise are what drive employment creation, and these are the factors that will lead the country to growth.

Launching a process: Implementing a 'Knowledge for Development' Strategy. The next step for Sri Lanka should be to formulate a high level strategic group and a knowledge economy task force consisting of leaders from various industry sectors, academia and government agencies to formulate policies that will enable Sri Lanka to build its knowledge economy. This exercise will enhance the interaction between the relevant parties. The task force should highlight the key areas for improvement and develop ideas for knowledge economy-based industries which have potential in the country. Sri Lanka still needs to develop a vision and strategies to address its transition to the knowledge economy. Implementing a development strategy for the knowledge economy will be a progressive step towards growth in all sectors of the economy.

Learning from other countries

The case studies presented in part II of this paper highlight what Sri Lankan policy-makers can learn from Korea, Singapore and China: three countries at very different stages in their KE transitions. Korea is currently seen as a leader in effectively using knowledge for growth while Singapore is in the process of developing its pillars in order to pursue a relatively new strategy in which innovation becomes the new focus of the economy. China is only in its initial stages of developing a new strategy for growth and beginning to invest in knowledge in order to do so.

Despite the fact that all three countries are at different stages there are some common themes that emerge from the case studies. All three countries have invested heavily in education. In Korea a strong cultural affinity to education and government deregulation of the sector in the 1980s allowed it get to a point where more than 50 percent of the population attend a tertiary level institute. In Singapore, education is

government's second biggest item of expenditure. While in China 50 percent of students at university study a science or technology related subject. Singapore has also decided to augment its national HR capacity by opening its doors to foreign born and foreign trained knowledge workers.

All three countries followed an outward oriented export development strategy and all started by adopting existing technologies rather than moving into innovative or new industries. All have gradually improved their business environments climbing several places in international indices in recent years. Despite low adult literacy rates in Singapore (roughly at Chinese levels), the country has more than made up for this by attracting international investment and human resources because of its excellent business environment, most notably the strong rule of law and regulatory quality.

Information infrastructure in all three countries was promoted through a liberalization of the telecom sectors starting with Korea in the 1970s. A solid regulatory structure based around market competition allowed the country to achieve the highest broadband penetration in the world. A dedicated public private partnership fund meant that funding was always available to drive the sector and that government ensured relevance and commercial orientation of the investment whilst also securing public sector backing to achieve social objectives.

Although all three models rely heavily on the private sector, they also involve high degrees of government coordination. Given the areas that the knowledge economy includes; education, ICT infrastructure and the business environment improving the knowledge economy is not a job that can be left entirely to the private sector. However, all three governments have been very selective in their interventions. They have allowed the private sector to participate where competition is possible e.g. education and ICT infrastructure and focused on creating a level-playing field for all stakeholders.

The message for Sri Lankan policy-makers is clear. Government must expand private sector access to finance all levels of education but particularly at the tertiary level. Government must increase its investment in R&D and public sector educational institutions. It should also encourage increased linkages between universities and the private sector.

Since this is a new area for Sri Lanka, this process must start with a dialogue with all stakeholders and commitment from government to achieving the KE related objectives outlined in the *Mahinda Chintana*. It is hoped that this paper will spur this process to allow the country to realise its enormous potential.