

# I. The Knowledge Economy - Why it is so important for Sri Lanka?

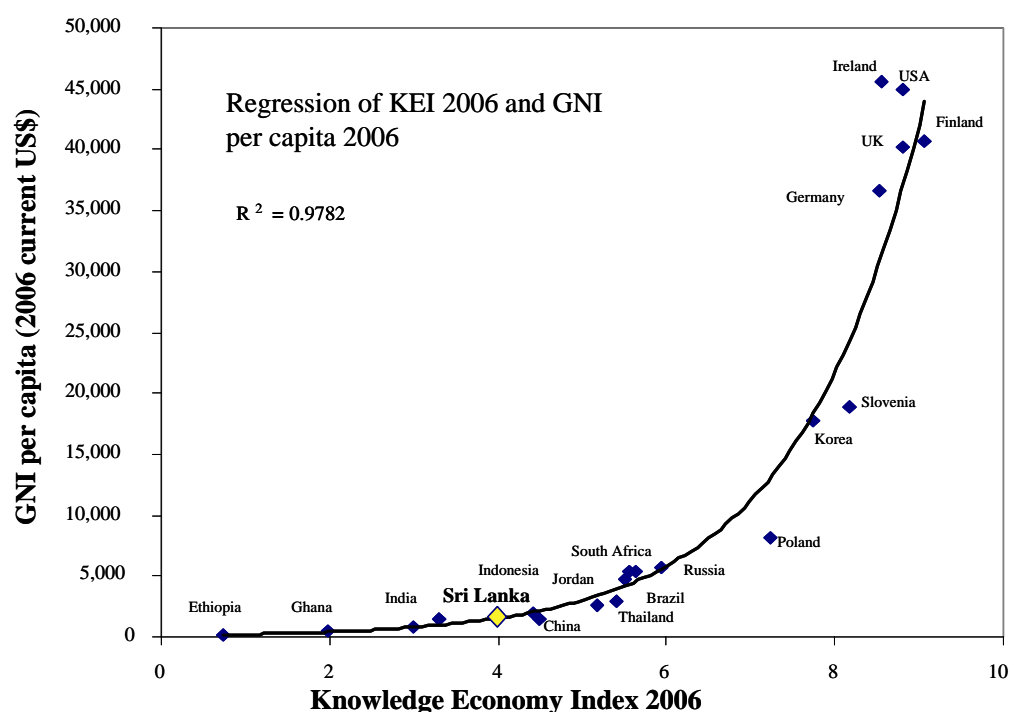
## What is the Knowledge Economy?

A knowledge economy is one that creates, disseminates, and uses knowledge to enhance its growth and development. Knowledge is not a new concept and has always been at the core of any country's development process. More recently however, the increased speed in the creation and dissemination of knowledge is making it an even more important ingredient in rapid economic development.

A successful knowledge economy is characterized by close links between science and technology, greater importance placed on innovation for economic growth and competitiveness, increased significance of education, and lifelong learning and greater investment in intangibles such as R&D, software, and education.<sup>2</sup> Investing in the knowledge economy means investing in strategies that will bring about significant changes in the way a country can grow.

**The knowledge economy is not just about high-tech industries.** The application of knowledge is manifested in all areas such as entrepreneurship, innovation, R&D, and people's education and skill levels is now recognized as one of the key sources of growth and competitiveness in the global economy. The knowledge economy does not only signify high technology or information and communication technology (ICTs), but how well economies are using appropriate knowledge to improve their productivity and increase welfare. The creation of new knowledge and use of existing knowledge can be relevant in a variety of circumstances, manifesting not just as leading edge scientific discoveries, but more generally, on how to do things better.<sup>3</sup> In fact the gains from simply adopting existing technologies and best practices far outweigh the benefits from inventing new technologies.

Figure 1: A strong link between knowledge and growth



Source: Updated from Dahlman, Carl 2003.

<sup>2</sup> World Bank 2005a

<sup>3</sup> Ibid

**Knowledge can mean the difference between poverty and wealth.** In order to remain competitive in the global economy of the twenty-first century, it will be increasingly important to invest in quality knowledge inputs rather than capital inputs, making each sector of a country's economy more efficient. Figure 1 illustrates the significant returns that such an investment can create. Countries such as Korea, Taiwan, US, and UK which have invested substantially in knowledge factors over the last few decades have experienced rapid and sustained growth and are currently some of the most dynamic and competitive countries in the world.

**The dynamic process of knowledge and wealth creation raises tremendous possibilities for enhancing growth and competitiveness.** But there is also a risk that countries or firms and organizations that are not able to keep pace with rapid change will fall behind. Countries like Sri Lanka, which are poised to realize faster growth and move into middle income status need to formulate robust national KE strategies and reform the appropriate sectors in order to benefit from this driver for growth.

**Sri Lanka is currently embarking on a new development strategy that seeks to bring about rapid and sustained growth.** Sri Lanka has made substantial advances over the last few decades, posting solid economic growth as high as 8 percent in 2006 up from 6 percent in 2005, and 5.4 percent in 2004. In addition, the country's new development strategy anticipates even more rapid growth in the coming years. The government's 10 year development strategy *Mahinda Chintana: Vision for a New Sri Lanka*, unveiled in 2005, introduced prospective policies designed to improve growth prospects and further integrate the island into the global economy. The challenge for Sri Lanka is now to formulate KE implementation strategies and decide on which types of inputs to invest in to make this vision a reality.

**The time is right for Sri Lanka to begin its transition towards becoming a knowledge-based economy.** In light of Sri Lanka's recent and continuing reforms and its ambitions to realize faster growth, it is important for Sri Lanka's leaders and interested stakeholders to evaluate where the country currently stands on its journey towards a knowledge based economy and how best it can take advantage of the KE potential. This paper seeks to answer some of these questions by benchmarking Sri Lanka's knowledge economy against competitors in Asia and elsewhere and highlights the specific areas which the country should improve upon in order to fully embrace the knowledge economy.

## **What does this imply for Sri Lanka?**

*Sri Lanka's economy is changing*

**The sectoral composition of Sri Lanka's economy has changed from that of an agriculture based economy to one dominated by the services sector.** By the end of 2004, the services sector was the highest contributor to GDP of 56 percent, followed by the industrial sector at 26 percent and the agricultural sector at 18 percent. Although its significance has declined in recent years, the agricultural sector is still an important determinant of GDP, directly accounting for around one-fifth of national output and employing over one-third of the workforce.

**Liberalization, private sector participation, modernization and increased competition have contributed to the expansion of the services sector,** including sectors such as transportation, communication, financial services, trade and tourism. In recent years, services growth has been led by telecommunications (27 percent growth in 2005).<sup>4</sup> The services sector will be of growing importance in the coming years as Sri Lanka is increasingly regarded as destination of choice for foreign investment and offshoring activities. As the country moves into being a major services exporter, the challenge for Sri Lanka in the medium term is to achieve rapid and sustainable economic growth with greater equity whilst

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<sup>4</sup> Board of Investment (BOI), Sri Lanka

managing the process of globalization. Success will depend on realizing practical macro economic management, undertaking necessary reforms, infrastructure development, and human resource development; all of which can be accomplished or facilitated through appropriate knowledge investments.

### **Box 1: Services Take the Lead in World Employment**

The services sector recorded the highest employment share in 2006 of 40%, with agriculture at 38.7% and industry at 21.3%. Services overtook agriculture for the first time in history in 2006. Roughly 22 million manufacturing jobs disappeared globally between 1995 and 2002, with even China losing around 15 million manufacturing jobs. The need to think of innovation in services to keep up with this trend has never been more important than it is now.

*Source: ILO Global Employment Trends 2007*

*Sri Lanka's current advantages in embracing the knowledge economy*

**Sri Lanka's liberal economy, high literacy rates and emerging offshoring industry will support the country's transition to a knowledge economy.** Sri Lanka's economy remains one of the most liberal in South Asia. In terms of education, Sri Lanka possesses a solid base of human capital with some of the highest literacy rates in the region, widespread use of English, and a large number of individuals well trained in the fields of accounting and other financial services. The country also has a free market economy, dynamic private sector, macroeconomic stability, and a democratic system. Sri Lanka's business environment is consistently improving and remains open to foreign investment and committed to private sector competition. In addition, Sri Lanka is increasingly becoming identified as an attractive destination for offshoring activities that go beyond the basic call center activities, including financial, banking, insurance, telecom, and other business services.<sup>5</sup> These emerging industries, opportunities, and other changes will help support the transition to a Knowledge Economy.

## **Assessing Sri Lanka's Opportunities and Challenges in the Knowledge Economy**

### *The Four Pillars of the Knowledge Economy*

The World Bank Institute has defined the knowledge economy as consisting of four pillars, which if strengthened, can result in growth and development.<sup>6</sup>

1. **The business environment:** An economic and institutional regime that provides incentives for the efficient creation, dissemination, and use of existing knowledge.
2. **Dynamic information infrastructure** that can facilitate the effective communication, dissemination, and processing of information.
3. **Human resources:** An educated and skilled population that can create and use knowledge.
4. **An efficient innovation system** of firms, research centers, universities, consultants, and other organizations that can tap into the growing stock of global knowledge and assimilate and adapt it to local needs, as well as to create relevant new knowledge.

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<sup>5</sup> Economic Intelligence Unit, 2006.

<sup>6</sup> World Bank, 2005a.

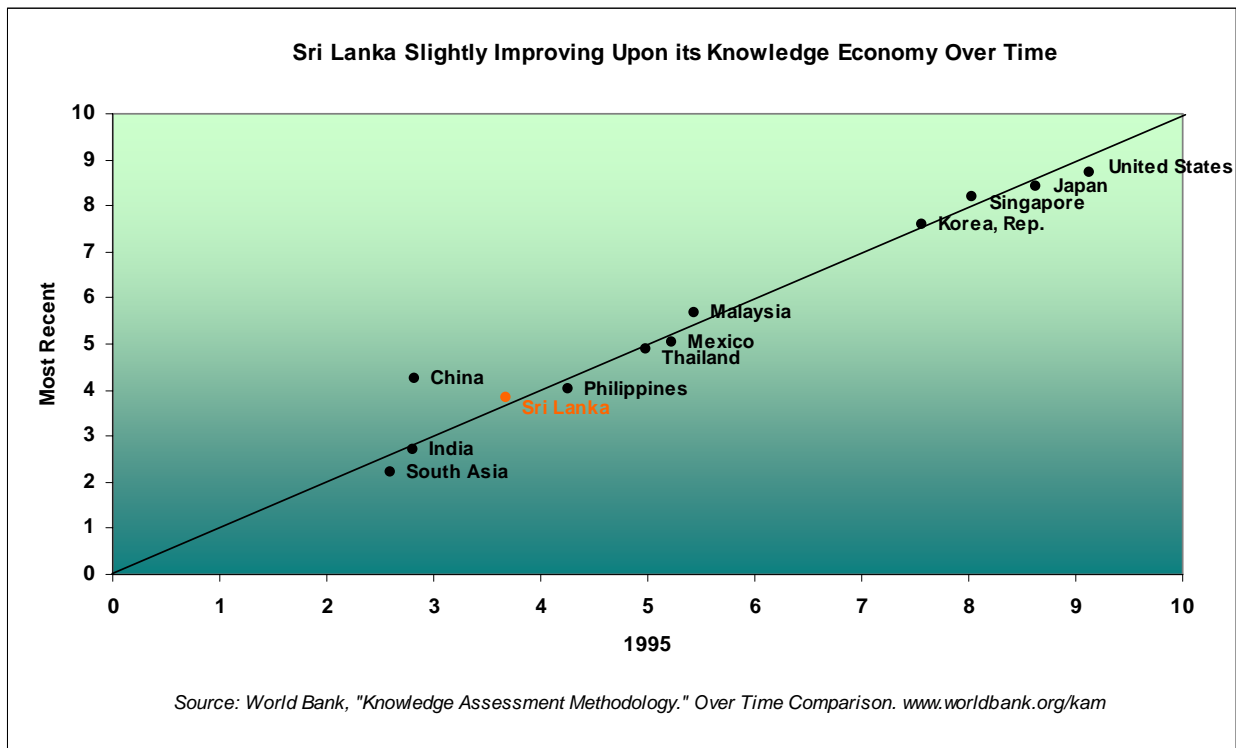
In order to benchmark Sri Lanka's position in its transition towards a knowledge economy, the World Bank's Knowledge Assessment Methodology (KAM) will be used throughout the paper. The KAM includes several quantitative and qualitative variables that compare an economy with its neighbors and competitors in order to determine the areas within the country's economy that are in need of improvement, investment, and reform. Three variables are chosen as proxies for each of the four pillars that constitute the knowledge economy index:

- Economic and institutional regime: tariff and non-tariff barriers, regulatory quality, and the rule of law
- Education and human resources: adult literacy rate (percent age 15 and above), secondary enrolment, and tertiary enrolment
- Innovation system: researchers in R&D, patent applications granted by the US Patent and Trademark Office (USPTO), and scientific and technical journal articles (all weighted per million people)
- Information infrastructure: telephones per 1,000 persons, computer per 1,000 persons, and internet users per 10,000 persons

### *Benchmarking Sri Lanka's Knowledge Economy*

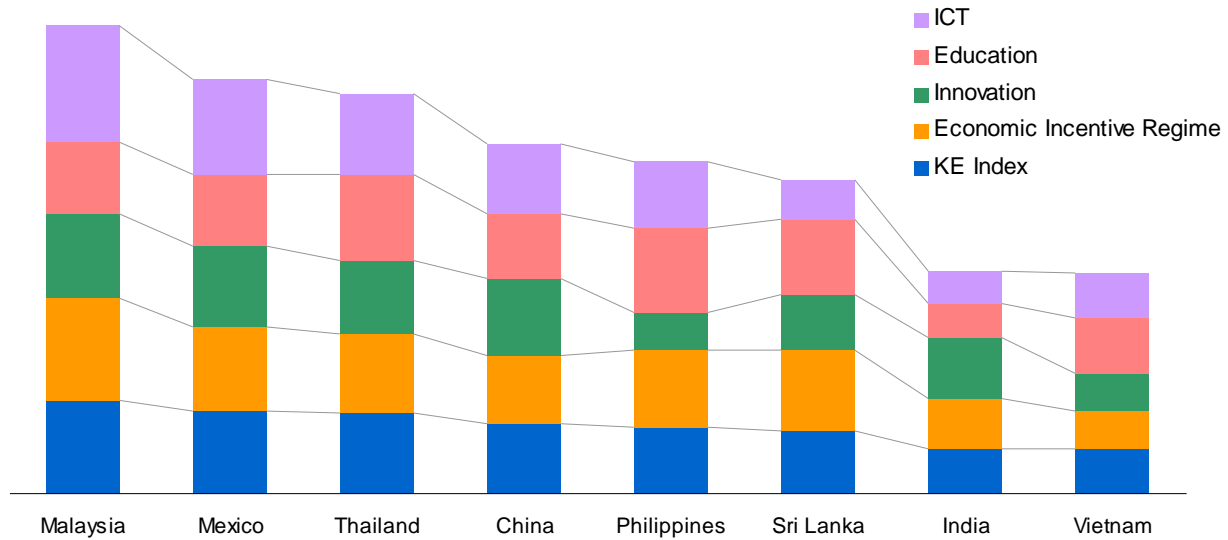
**Over time, Sri Lanka has made gradual but limited improvement in its transition towards the knowledge economy.** Although Sri Lanka has made small improvements since 1995, other Asian countries have done better including Malaysia, Korea and Singapore. China, in particular has made significant leaps in developing its knowledge economy. If Sri Lanka wants to experience the rapid growth that some of its Asian counterparts have, the country will need to increase investment in developing its knowledge inputs.

**Figure 2: Sri Lanka's overall improvement relative to the world**



**Sri Lanka lags behind most comparator countries in terms of the Knowledge Economy.** Using the KAM methodology it is also possible to benchmark Sri Lanka against comparator countries with regard to specific Knowledge Economy pillars. Figure 3 below represents the aggregate Knowledge Economy Index (KEI) score using the most recent data for 8 countries including Sri Lanka. It is separated into four pillars with each coloured band representing the contribution of a particular pillar to a country's overall knowledge readiness. The figure shows that Sri Lanka lags behind most of these countries.

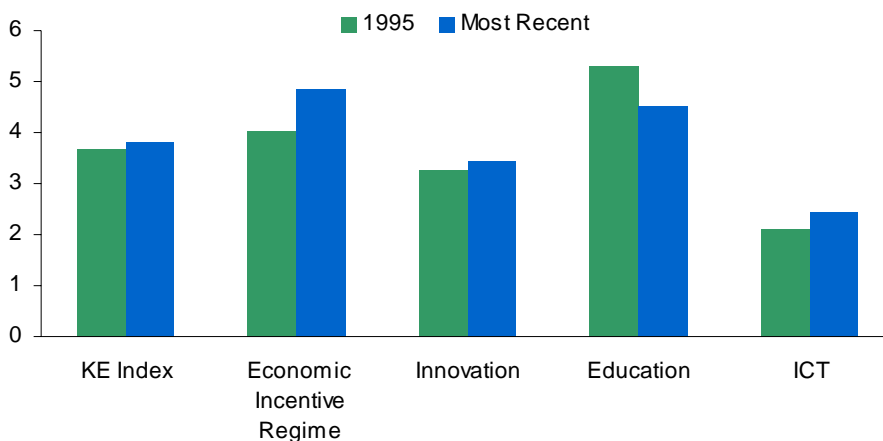
**Figure 3: Sri Lanka's Knowledge Economy a long way to go**



Source: World Bank Knowledge Assessment Methodology, [www.worldbank.org/kam](http://www.worldbank.org/kam)

**Sri Lanka has made little progress in strengthening its KE pillars over the last decade.** Looking at the same pillars Lanka over time we see very slight improvements since 1995 except for education which has declined. The economic incentive regime and ICT have seen more improvement than the other factors.

**Figure 4: Sri Lanka's Knowledge Economy pillars show little improvement since 1995**

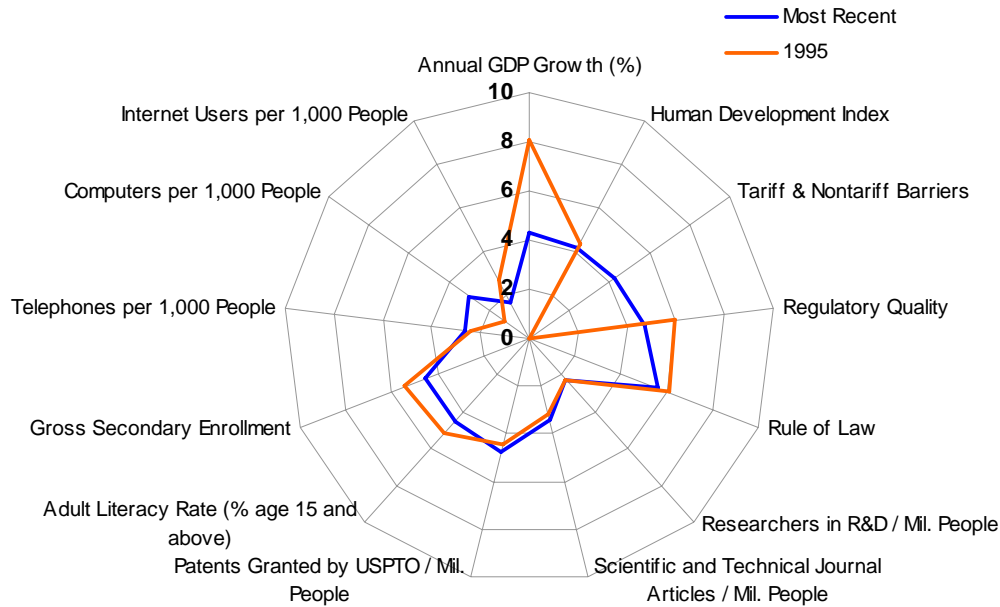


Since 1995, the country has made some improvements in ICT with higher computer usage and increased telephone connectivity. However, Sri Lanka's regulatory regime has not improved significantly. It is

important to note the slight decline in internet users per 1,000 people, indicating that other countries have been able to achieve internet connectivity at a faster pace.

**Sri Lanka has made few advances in innovation**, which has remained at a consistently low level with regard to patents, journal publications, and researchers. Sri Lanka’s education system also appears to be stagnant with other countries improving secondary enrolment faster. This emphasizes the need for important reforms in the education system in order to be able to produce the educated and skilled population needed for the knowledge economy.

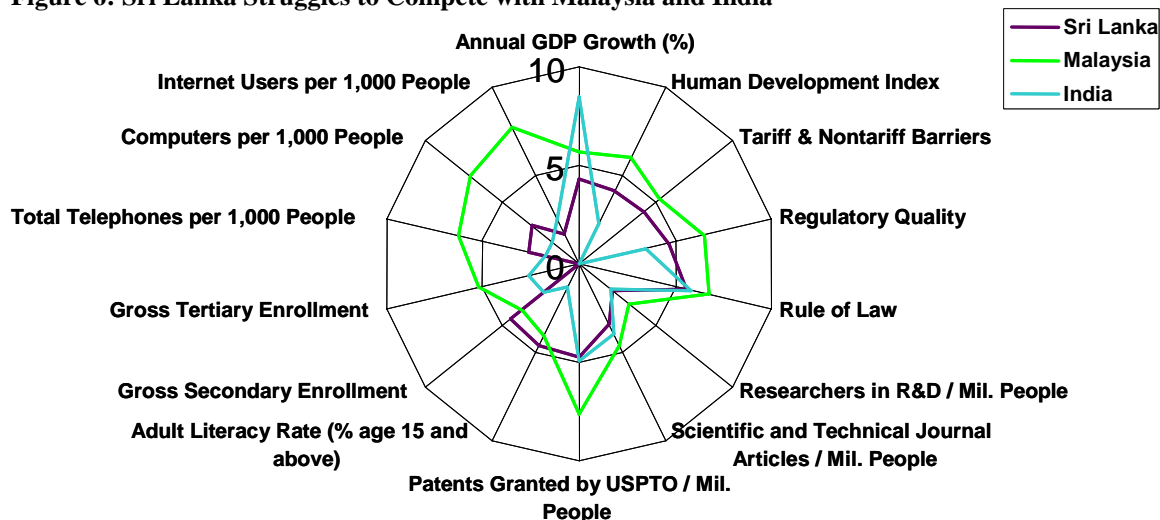
**Figure 5: Sri Lanka has made limited advances in R&D and ICT**



Source: World Bank Knowledge Assessment Methodology, [www.worldbank.org/kam](http://www.worldbank.org/kam)

Sri Lanka’s need to improve upon each pillar of the knowledge economy is further highlighted when compared with two of its comparator countries, Malaysia and India.

**Figure 6: Sri Lanka Struggles to Compete with Malaysia and India**



Source: World Bank, Knowledge Assessment Methodology, [www.worldbank.org/kam](http://www.worldbank.org/kam)

## *Embarking on a Transition to the Knowledge Economy*

To make progress on this important agenda, Sri Lanka will need to define its strengths and weaknesses within the four pillars in order to bring about the appropriate reforms in making a successful transition to the knowledge economy. This paper is structured around these four pillars, the business environment, ICT infrastructure, innovation, and education.

The following four chapters identify the specific issues and opportunities facing Sri Lanka in terms of developing quality knowledge inputs. Included in each chapter are various benchmarking assessments, appropriate for each pillar, along with related issues, recent developments, and policy recommendations.

A compendium volume presents case studies of how other successful countries have managed the transition to the KE. These assessments will be useful in helping Sri Lankan policy-makers learn from different methods and models that have been adopted elsewhere so that the island can begin to establish its own strategies in embarking on Sri Lanka's 'knowledge economy revolution'.