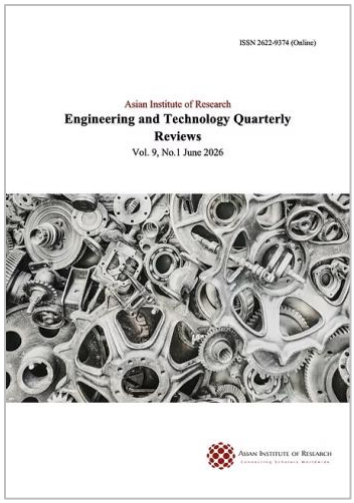

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Development of Information Technology in Sri Lanka: Cast from 1948 to Present and Its Commitment

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Abstract
Technology and Research and Development (R&D) are accepted as the most significant elements to eliminate poverty when identifying economic growth and development in developing countries. Most developed countries have already achieved economic growth and technological development through R&D. The findings suggest that while Sri Lanka initiated early institutional mechanisms to promote science and technology, fragmented policy implementation, limited research integration, and infrastructural constraints have impeded the effective translation of IT potential into sustained socio-economic development. The study contributes to the ICT-for-development literature by offering a context-specific analysis and identifying policy directions relevant to developing economies pursuing inclusive digital transformation.

Keywords: Information Technology, ICT Development, National Innovation Systems, E-Governance

1. Introduction

Information Technology (IT) and research and development are generally recognised as the most significant aspects in eliminating poverty, which is the key objective of growing economic and technological development. These can be included in long-term programs to eliminate poverty. Most developed countries have already reached the targeted level of economic growth and established industry competitiveness by focusing on applied sciences, IT, and research and development.

It is important to recognise the contributions of IT to society and encourage growth. The IT industry has been growing fast, providing many job opportunities in Sri Lanka over the past few decades. Within IT, the Internet and all the software and technical elements that support global information access have grown to become the primary means by which people can get information. This article explores the development of IT in Sri Lanka following its independence from the United Kingdom (UK), the strategies and plans taken by the government to develop and spread IT throughout Sri Lanka, and how IT contributes to eliminating poverty in the country.

Most people in developed countries have access to the internet, which makes it easy for them to access information. However, as Sri Lanka is a developing country, the situation is different there. The take-up of IT has been slow, and in general, only a few people benefit from the internet. Another reason for this is that the latest technologies are often not immediately introduced to the market. Even if the latest technology was introduced, there remains a poor technological infrastructure in the country. This explains why, in terms of technology, we are still lagging behind the developed countries. This has also adversely affected the economic development of the country. To improve this situation, there should be clear policies and procedures established, which specifically relate to technological development. In addition, more attention should be paid to implementing suitable policies, which will help the economy to grow.

2. Cast of IT in Sri Lanka

After Sri Lankan civilians received independence from the British government in 1948, several institutes were established to develop Science and Technology in Sri Lanka. In 1956, the government prepared a ten-year plan with the help of the Planning Secretariat to develop science and technology in Sri Lanka (APCTT, 1986). In 1966, the government established the Industrial Development Board to provide several technical services to all industries in Sri Lanka. The key purposes were to research feasibility reports, inspections, expert research, publications, loan agreements, and management data to provide advice to all industries in the country. In 1974, the National Engineering Research and Development Centre was established to promote research, innovation and commercialisation. For the duration of 1960 to 1990, there wasn't much research and development taking place in the private sector, as the public sector made massive contributions to the economic system. At this time, most of the massive projects began as donations came from the Soviet Union, establishing technological industries in Sri Lanka.

After 1977, industrial policies were changed, and the private sector took a prominent part in the economy. Subsequently, private research and development activities indicated affirmative development in all industries. The IT industry itself has grown tremendously since the arrival of Personal Computers (PCs) in the early 1980s. This technological development facilitated the ability of manufacturers to offer a new generation of data processors, smaller in size but higher in computer storage, speed and memory capacity, which conformed to the necessities of the market and greatly expanded the use of computers. Hence, the IT sector in the 1980s and PC manufacturers who recognised this trend made outstanding contributions to the economy and society. Along with the popularity of the PC, a wide range of users, including many non-technical users, developed a strong need for user-friendly operating systems and applications. As a result, Central Processing Units (CPUs) and software for the PC grew at a very rapid pace, making computers increasingly smaller in physical size and much easier to use.

In the 1990s, the market became less concerned with the desktop PC, as the industry began to produce notebooks and laptops, enabling people to bring their PCs with them. As technology improves day by day, supercomputers become available in the market with superior speed, Internet browsing capabilities, high performance, vast storage capacity, etc. At present, these technologies continue to develop through numerous mobile devices, allowing users to connect with the world instantly. Since 1995, when the Sri Lankan Internet Services began commercial operations, the number of Internet Service Providers (ISPs) has increased dramatically. In 2001, there were 120,800 Internet users. At present, there are more than 20 ISP providers.

3. Commitment to Develop IT

The government accepted the significance of technology and showed the potential to develop technology as a fundamental part of developing the country. Following independence, Sri Lanka established several institutions aimed at promoting science and technology. Policy initiatives such as the Ten-Year Plan of 1956 and the establishment of the Industrial Development Board in 1966 reflected early state-led efforts to strengthen technological capacity. However, during the period from the 1960s to the late 1970s, technological development remained largely confined to the public sector, with limited private-sector research and innovation. Development projects related to science and technology that fall under the Ministry of Science and Technology, and activities of the Industrial Development for the Improvement of SMI, are significant highlights in the country's history.

Consecutive Sri Lankan governments have taken several steps to develop technology, but there are still several things required to raise IT to a sufficient level. One of the major problems is that the government is not using up-to-date technology strategies in industrial development formation. Even though the Sri Lankan government is trying to improve economic policies to inspire innovation in the country, it has yet to take the necessary step of developing a technology infrastructure in the public sector. As for the APCTT report, three key tools can be used to articulate operative technology policies. These are: Legal Instruments, Financial Instruments and Fiscal Tools. It is advisable to study the outline developed by Gunawardane, as he stated the needs of the Centre for Transfer and Development of Technology (recommended by the UNCTAD mission in 1976) and Industrial Development Bank (Gunawardane, R.P., 2000).

It is necessary to update both public and private organisations with the latest technologies and marketing strategies, which requires a mechanical adjustment to take the necessary action. After the formation of Science and Technology principles, the government needs to take the lead in spreading technology across the country. Establishing labs, media programmes (television, radio and newspaper) and publications (books and journals) are some of the resources that can be used to build the IT culture in the country. When the ministries fail to take action to spread IT, the future development of the country cannot improve. Technology development is primarily driven by the country's education and industry, but these issues are administered by numerous secretarial figures, and therefore, constant discourse is important for the appropriate development of technology in the country.

4. Contribution to the Country

4.1 Education

Education helps to produce people with different skills who are proficient in IT, which is essential to building expertise and managerial skills. Therefore, education has the responsibility to prepare graduates with the knowledge to practice IT in their daily duties. Likewise, education must assist students to understand the social, economic and organisational problems related to IT policy at all levels in society. It is helpful to exploit IT in the educational area. In developed countries, besides the health sector and social services, there is a very strong demand for IT and management experts.

Even though the encouragement to learn and work with technology is at a lower level in Sri Lanka than in other developed countries, universities in Sri Lanka provide esteemed principles for technology, as it is helpful to the development of the country. Three universities in Sri Lanka have engineering faculties. According to the figures produced by the University Grant Commission, around 55% of graduates are from the technical disciplines. However, research and development productivity in Sri Lankan universities is at a very average level when compared to universities in developed countries. Together, the government and the private sector have made several plans in the computer and IT subject areas. One important plan is to extend research and innovation areas related to IT, which is a vast subject. Improvements to IT in the educational area are currently being implemented, to include the substance of school libraries and inculcating information skills among school children. The current job market demands youth with high IT skills.

4.2 Public Service

The policies made by the government have a direct effect on the development rate of the country and productivity. IT could provide a great benefit by making it easy to distribute government policies to the public. The government can develop and maintain up-to-date databases of economic and public sector accomplishments with current and accurate facts, to improve decision-making and the promotion of forthcoming strategies. Likewise, the government can carry out daily activities more proficiently by using intranets in all government ministries and departments. Many measures can be taken immediately to improve the public sector IT development, which is outdated, to increase government productivity and effectiveness. Not only are the existing computing systems presently in use inefficient, but outdated procedures also should be rejected and cancelled. Services and information should be readily accessible to the public through the Internet, which can make it easy to access all government ministries and departments.

Therefore, the government must make policies to support e-governance, as society is well familiar with IT and is up to date with the latest news and updates. It would be beneficial if the government took steps to educate all levels of public sector employees on the potential of IT to improve public sector efficiency. Spreading e-governance throughout the country is worthwhile as the public demands IT, which is on the rise and spreading throughout the country.

5. Skilled Workforce

Most of the IT and IT-related jobs were created in Sri Lanka in 2000, mainly due to concerns over the Y2K bug. Over time, the IT industry grew step by step to cover most of the technological needs of the country. The IT job market is dynamic and is growing rapidly to meet future needs. As a result, structured policies are now being implemented, which relate to both educational and industrial IT requirements. Our research has found that the number of graduates in IT and IT-related courses has also increased rapidly over the past few years. It has been reported that almost 65% students who have graduated have received training in IT and related disciplines. This development, coupled with its competency in technological and professional services, could mean that Sri Lanka will be able to attract more European and American-based IT firms in the future. This could include further expansion into areas such as open-source software and mobile technologies.

The results of research carried out by government organisations show that many employees were trained in IT disciplines over the past few years. When we checked these figures, it was found that the number of females receiving training (65%) was higher than the number of males (50%). It is evident that there has been a transformation in terms of general and advanced IT training, which is linked to the rapid development of technology and competencies. IT has become a fast-growing industry, and there is now a high demand for jobs by trained professionals. Fortunately, there are new job opportunities created daily, especially in fields such as web development, e-commerce and Quality Assurance. The average growth level of the IT industry in Sri Lanka is currently in the region of 25%, and it possesses more specialist knowledge of IT than any other country in the region. For this reason, many leading multinational blue-chip companies are already established here, and they include HSBC, IFS, WNS, Virtusa, and Accenture, amongst many others. The future would appear to be bright, and more organisations are likely to establish themselves here in the near future.

6. Conclusion

In Sri Lanka, reasons for the failure of technology development include a lack of commitment by the Sri Lankan government to support research and development activities. After the 1978 reforms, the new government provided economic policies with significant efforts to develop the country by providing more opportunities and facilities for science and technology. Due to the lack of development in science and technology, however, the measures were not fruitful.

Most of the graduates in Sri Lanka are in IT disciplines, yet due to the poor recognition of science and technology in Sri Lanka, most of the graduates from science and technology disciplines are searching for jobs in other fields, and such students are leaving the country for better prospects. Less prominence is given to research at the university level than in developed countries. In the recent past, some enterprises have been taken for university-industry collaboration, but such development depends on the effectiveness of the government and public administration. The government in a developing country like Sri Lanka is excessively administrative, difficult to contact for information, incredibly slow and poor in providing user-friendly information. IT offers a better prospect to develop the information flow and competencies to the Sri Lankan government, but the government remains behind the rest of the world in terms of IT and research and development.

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