The International Information & Library Review (2004) **36**, 319–327

The International Information & Library Review

www.elsevier.com/locate/iilr

Brief Communication

Revolution within the revolution: the Sri Lankan attempt to bridge the digital divide through e-governance

Shivanthi Weerasinghe

Bank of Ceylon, Library, Colombo 01, Sri Lanka

Summary Information Technology (IT) has paved the way for an information society sans frontiers to have easy access to information and communication. IT also connects the machine environment with human applications, and has emerged as a force for global connectivity.

Nevertheless, there is a disparity in the spread of IT across the world between the developed and the developing nations. The paper describes the use of IT in Sri Lanka and how the nation strives to integrate the opportunities and challenges it provides. The paper provides the background of a new government concept called E-Sri Lanka, with the goal of creating a full IT environment projected to bridge the information gap within the nation. The country is making a laudable effort to create a complete IT environment, and the paper brings forth the developments made over the years in the spheres of information and Information Technology, through government decisions, IT education, applications and institutional activity. The article concludes on a note of optimism—there is interactivity between IT and workers rather than humans being replaced by machines.

Introduction

Information Technology (IT) and the human condition are seemingly two different terms. IT concerns itself with machines and systems of the 'micro revolution' such as computers with hardware and software, the telecommunications infrastructure, electronic media and other equipment, while the human condition centers on people—men and women.

Nevertheless, in the modern information age these two terms have a definite connection. The information age consists of information science in an information society. Information science, in turn, embraces information management and organization, knowledge management, databases, information networks, information security and easy access to information with speed and accuracy. In this context, information technology plays

E-mail address: librarian@boc.lanka.net (S. Weerasinghe).

1057-2317/$ - see front matter © 2004 Published by Elsevier Ltd.
doi:10.1016/j.iilr.2003.10.015

a significant role in bringing together machines and humans in the human work environment. Depending on the type of function IT provides, it is extremely beneficial in (i) its advances in reaching people according to varying user needs for accessing and retrieving information, and (ii) providing Internet-enabled usage through infrastructure development. These two points concern human interaction through information usage and communication with Information Technology, also known as Information Communication and Technology (ICT). Hence the two terms have a definite point of contact as Information Technology plays a significant role in a human environment that depends upon gaining access to and using information. Information technology allows changes in the ways that people reach decisions and communicate with the rest of the world.

Information technology

The term IT is synonymous with new technology, such as microprocessors, microcomputers, word processors, screens, printers, mice, modems, and keyboards, among many others. IT is also defined as any computer-based tool that people use to interpret information and carry out the information processing needs of an organization (Haag, Cummings, & Dawkins, 1998). The invention of the computer was a most significant breakthrough in the IT arena, its impact being felt from the 1980s to the present. Moreover, with recent technological developments in microelectronics, the cost of computers has declined over the years, ensuring more availability and usage of computers. Earlier in the history of computers, the situation was entirely different because of the high cost and complexity of these tools; computers were available only to a few large enterprises. IT is the basis of modern society because it is used to support information-processing tasks as an enabler of innovation and a saver of time and space. In such a context, it has become one of the most important resources in the working environment and, as a result, more organizations are investing heavily in IT. In the present context, IT concerns the use of systems that provide the user with a means for acquiring, collecting, transferring and disseminating information. Therefore there is a fair claim in the common statement, ''IT has radically changed the lives of millions of people.''

Other organizations became key players in the information transmission environment, such as database vendors, public and private database creators, software programmers, information providers for the Internet, and libraries. The rapid growth of IT and fast changing information has made more people come to work with, produce, organize, distribute, use, study, control and sell it. Therefore information technology has created an information society in which information science focuses on the transmission of information. Olsgaard addresses information science as ''the study of the formation, organization, storage, retrieval and transmission of information'' (Olsgaard, 1989, p. 4). It is further explained that storage and retrieval of information are concerned with compiling information in one setting and effectively getting it back again (Olsgaard, 1989). Thus it is initially the work of the humans that focus on ideas, and these are brought forth in symbol or machine languages. This results in the easy access of information as a determination of the processes and communication. The human mind works with the hardware, using the software to transmit information.

Hence, it is the human aspect of information technology, coupled with the ideas computed in bits and bytes, that produces useful information and effective access. Olsgaard (1989) concludes that the artificial environment of technology that is a branch of information science puts together the machine environment and human applications. Computers definitely play an important part in the processes of information technology, but they are only the mechanisms through which the technology and the information science theory are implemented. The rest of the work in an information science environment, such as organizing, retrieving, distributing, controlling and selling, is all done by people.

> The aim of information science is to further what we know and can utilize from the flow of information. The objective of both the in vivo and in vitro forms of information science is to dramatically improve our knowledge of the human condition, and through its application, to improve the environment in which we live and work. (Olsgaard, 1989, p. 8).

Nevertheless, technology is not complete and has not fully achieved everything because, as Olsgaard mentions, knowing has just begun. It is an evolving process because electronics, telecommunications and IT are changing rapidly. Libraries are moving from the use of traditional card catalogues to the creation of computer databases and metadata, the subscription to online databases, networking, electronic document delivery, and the use of CD-ROMs and the Internet.

Thus the aim of computers, the Internet and IT is beneficial to society and its members. Society, as we are aware, depends on correct information for its efficient survival because the interpretation of information adds to human knowledge. The human search for information has not only been present in the IT revolution, but has also existed from time immemorial leading to the building of such monuments such as the Library of Alexandria. IT has emerged as a very important force in the search for and use of information, thus contributing to the development of economies, organizations and productivity. The use of online databases, CD-ROMS, and networking are all part of the IT base used to narrow the digital divide.

Nevertheless, IT was not automatically created by an unseen power. It is manmade, and there is a disparity in the spread of IT, especially between the developed and developing nations and developing nations, but even within particular nations. There is an unequal distribution in most of the developing nations, as IT is present widely in the urban rather than rural sectors. IT is unavailable to more than half the world's population. There were 70 million users of the Internet in 2000, of which half were from the United States and Canada (Research and Information System for the Non-Aligned and other Developing Countries, 2002). Though IT is created and used by humans, it has also has created a stark digital divide in both information poor and information rich countries.

The IT revolution in Sri Lanka

As mentioned above, there is an unequal distribution in the spread of IT between the rich and the developing nations. A recent survey done by the Asian Development Bank shows that there is ICT diffusion in selected Asian economies in comparison to the developed nations (Quibria et al., 2002). The survey also reports that education and infrastructure are critical factors in the integration of IT and that certain elements need to be fulfilled in integrating with IT and the components on which it is based.

Infrastructure: physical and legal

The physical infrastructure must include a reliable telecommunications system with cable, digital networking with cross bands, and the availability of computer hardware and software packages at competitive costs is also essential in gearing up for information technology development.

The legal infrastructure should include the formulation of privacy policies, copyright laws and other computer laws to minimize computer frauds and data protection.

Education

Computer literacy among workers, professionals and trained IT professionals is necessary to be able to use the rapidly changing IT effectively. Reliable and competitive IT courses (degrees, diplomas or basic level instruction) have to be offered by Universities and other IT institutions.

Correct mental attitude

If the correct mental attitude is not maintained, the negative attitude of the workforce will not change. Fears, lack of confidence, feelings of a threat to one's job and a general phobia concerning IT are common reactions to changes in the working environment of IT. Since the development of technology is an ongoing process, the continuous learning mode should be applied.

Funds

The financial capacity of an organization is a necessary deciding factor for the full integration of IT. The vast amounts of information output managed by IT developments are creating commercial methods of access. Costs and expenditures on IT need to be covered by paying for hardware and software, absorbing technology, obtaining subscriptions to online databases and having access to Internet servers and ISPs.

The South Asia Development Report states that, compared to the rise of IT in the developed nations, some south Asian countries "lack the basic physical infrastructure like telephone lines and electricity and literacy needed for a digital economy" (Research and Information System for the Non-Aligned and other Developing Countries, 2002, pp. 123–24). "The south Asian region ranks very low in the world in terms of telephone penetration and telecommunication infrastructure," and this disparity of the digital divide is "a matter of concern" (Research and Information System for the Non-Aligned and other Developing Countries, 2002, p. 124). Nevertheless, the report states that the region as a whole has been made aware of the potential of the software industry and is in a positive path due to the geographical location providing a time zone advantage with respect to both Europe and the US. (Research and Information

System for the Non-Aligned and other Developing Countries, 2002).

The use of IT and its application in Sri Lanka is of widespread interest, as the emergence of IT has brought about changes in the organization and development of the country. Yet there is a long path for Sri Lanka to match its neighbor India and other developed or industrialized countries. Nevertheless, every effort has been made in order to make Sri Lanka the hub of Information Technology in the region.

The population of Sri Lanka is 19.0 million with a labor force of 7.1 million and a labor force participation rate of 49.4%. The GDP is US $872 (Central Bank of Sri Lanka, 2003). Sri Lanka is situated at the southern end of India in the subcontinent. It is striving to handle the opportunities and the challenges provided by the advancements in IT.

The country has the potential and the people, and the government and the organizations are making every effort to work towards a more effective use of IT. However, certain drawbacks in the use of IT are apparent, including the lack of necessary professionals, slow adoption of proper legal procedures and an IT concentration in large organizations and also in Colombo, the country's main city. Lack of knowledge of IT is still prevalent in the workforce, sometimes even at the top levels of management, despite the many IT institutions in the country and the competitive IT courses offered.

On the whole, Sri Lanka stands out as a nation that is making an effort to create the right environment for the management of information through technology, especially in building a telecommunications infrastructure through liberalized policies and regulations. The government has decided to upgrade and increase facilities using IT and train the youth in the country, regardless of living situation or gender. The idea is to develop the small and medium enterprises, to prepare the masses to face an information society and to become information managers of a knowledge economy.

The need for information as a key factor in development has been recognized over the years. This need was emphasized when the Economic and Social Commission of Asia and the Pacific (ESCAP) held an intergovernmental meeting in Tokyo in December 1981 on "government information systems and data processing." The view was that these were key factors in economic and social development and in the improvement of governmental services to the people (Karunanayaka, 1984). The government of Sri Lanka took the necessary steps to deliver the facilities to generate information through the establishment of institutional machinery to collect and disseminate as well as control the vast amounts of information generated by the government agencies, the private sector, foreign missions and international organizations. IT in the form of computer technology is said to have been introduced in Sri Lanka in the late 1960s as computers were installed in two main government corporations in Sri Lanka, the State Engineering Corporation and the Petroleum Corporation. Their use of computers was mainly for administrative work such as inventory, stock control and payrolls, rather than for the organization of information systems. The realization of the need to improve services to people through information and information systems led to the use of computers for improvement of the quality and timeliness of data required for planners and policymakers. In 1982, there was a considerable increase in the number of computers in the country. A study team was formed to make a report on a national computer policy. The team reported that in 1982 there were about 180 computers in the country. This increased to about 300 by 1985. The computers were initially introduced to the main government institutions in the public sector and gradually were acquired in the banking sector.

Nevertheless, the main objective of introducing IT in the form of computerization was not fulfilled because more computers were not a panacea for inefficient administration. Although IT is a necessity for improving the quality of services rendered to people, its capabilities have to be organized in the most beneficial ways for society. Computer use during this period did not reflect the priorities of the government in the pursuit of economic and social development of the country, especially in sectors such as taxation, finance, plantations, foreign exchange, the stock exchange and other money market operations. An ESCAP mission that visited Sri Lanka in 1982 remarked, "the continued growth of computer capability in an unorganized and haphazard manner will seriously undermine the ability of the government to build horizontally integrated databases responsive to its information needs" (Karunanayaka, 1984, p. 35). IT was not an efficiently and effectively used resource in Sri Lanka.

Therefore a committee was appointed by the Sri Lankan government to advise, taking into consideration the rapid developments taking place in the use of computer technology in other countries, on formulating a national computer policy. The committee drew attention to the drawbacks of acquisition and utilization of computers in the country and the recommendations included:

- Adopting a national computer policy according to the needs of Sri Lanka;
- Designating of a single ministry to be fully responsible for such matters and for the formation of a National Computer Development Council (NCDC);
- Making full use of local and UNDP country programme funds;
- Appointing the NCDC as the main body to formulate methodologies for computer acquisition and commissioning it to undertake studies to determine the efficient and effective use of computers in the public sector; and
- Appointing the NCDC to plan and decide on computerization, training and development (Karunanayaka, 1984).

The report, which was accepted, led to the establishment of the Computer and Information Technology Council in Sri Lanka in 1984 to help in the dissemination of knowledge and provision of expert advice in the area of computers and information technology.

Gradually, with the above developments and the initiative taken by the government through their trade liberalization policies in the 1980s, the use of computers and their application in the work environment started to grow. The country was making headway in absorbing IT into delivering services and engaging in interactivity in trade and commerce. Institutions for IT development were established, and computers were introduced to schools. The growth of IT is discussed below.

There is a lapse in the education about IT and computer literacy in Sri Lanka, even though the country is endowed with a high literacy rate and good participation in the labor force.

In the mid-1990s, the Internet became a popular medium in the country for managing information and human interactivity in business. As mentioned earlier, mostly private and large organizations had Internet connections. Commercial Internet services in Sri Lanka were started in 1995. The country has 14 Internet service providers (ISPs) and uses ISDN for data transmission. Most of the government departments have Internet connections and their own websites. A cyber trade facility for engaging in e-commerce activities was set up by the Export Development Board, the premier government institution for matters of export work. Another computerized trade network called ''TradesnetSL'' has been available since 1995. This is an effective information base for foreign trade partners. The website is also involved with electronic data interchange to link other government departments dealing with the public, such as the Customs Department, Ports Authority and the Export Development Board. There is also a state-of-the art trading system at the Country's Stock Exchange. The Department of Census and Statistics has made available the statistical and demographic information for the country through links. The department also makes information available about their publications. The Central Bank of Sri Lanka, the top financial institution, has organized very valuable information on the website on economic information for the country, together with information on publications. Bibliographic data is also made available for the users. The Internet is used for access of information by the trade and business community, researchers, academics, professionals, economic planners and decision makers for productivity and development. Nonetheless, most of the organizations have a dialup connection to the Internet, and downloading takes time due to heavy telecommunication traffic.

Most schools in Sri Lanka also have websites, and some leading schools have IT clubs. The Ministry of Human Resources Development, Education and Cultural Affairs for Sri Lanka, together with the Asian Development Bank, has been launched very recently to set up 800 computer learning centers island-wide as a secondary education modernization project of the Ministry. These computer-learning centers are aimed towards use by schools in computer-assisted learning, and the software will be developed by the National Institute of Education. As a result, more children are learning to navigate the Internet. The Sri Lankan universities also have Internet connections and their own websites.

There are many IT institutions in Sri Lanka, and the top agency for IT is Computer Information Technology Council (CINTEC), which was established by an Act of Parliament in 1984. The name was changed to Council for Information Technology but retained the acronym CINTEC in 1994. Among its many activities, such as training, educating and keeping the community informed of the latest developments in the world, it is developing specifications for implementing Sinhala Language (the vernacular and main language) fonts based on the Unicode standard. The Council's website, http://www.cintec.lk, informs its users of seminars or workshops with relation to IT in Sri Lanka and around the world. The Council maintains a gateway about information on Sri Lanka known as ''Sri Lanka Web Window.'' CINTEC also aims to provide Internet services to the rural community of Sri Lanka.

Information management of Sri Lanka through the Internet and in the IT industry is also made possible through a host of other gateways. Such

information gateways provide tourist and economic information with links to other websites. Web directories with contact addresses of thousands of companies and institutions in Sri Lanka are available through these gateways. There are also sites on the Internet that arrange web designing and host the country's home page collection.

There are also a number of licensed institutions providing Internet services and data communications services with their sites on the Internet. There are quite a few private and government institutions offering education for IT work. The premier IT institution offering IT education and training courses in Sri Lanka is the Institute of Computer Technology attached to the University of Colombo. There are plans to set up IT parks in various parts the country. The Bandaranayaka Information Technology Park was set up in 2000 as an IT center. Most of the main local newspapers of Sri Lanka and a few magazines are available on the Internet.

There are only a very few companies involved in the software industry in the country, whereas there are a number of institutions for IT solutions. Nonetheless, the domestic software industry is growing.

The use of IT in the new millennium in Sri Lanka

The facts presented so far present a picture of a Sri Lanka striving towards using IT for discharging effective and efficient services. However, there is no evidence to show that IT been integrated into an electronic nation for all its citizenry in its economic and social development thus far. In measuring the weaknesses and the strengths for implementing electronic governance, the following issues can be mentioned.

In Sri Lanka, IT literacy is poor. Still, learning about computer technology and IT alone, without learning how to get one's education or work done through IT, also adds to the problem of ineffective use of IT. It is clear that computers and the Internet enable information to flow across space and time. Using the advantage of the mechanisms of IT, people will be able to realize their own needs and work or act accordingly. As an example, the youth of the country should be able to decide the course of action for their future career paths and not be tied down to a pre-planned course by human resources administrators. The people of the country should be able to decide upon their own requirements. Sri Lankans should be able to get their work done without traveling from distant locations to a central establishment.

The workforce and the people of Sri Lanka should develop the correct mental attitude towards electronic culture. Any skepticism associated with IT needs to be eradicated before bringing it to the people. They should be made aware of the necessity and usefulness of using e-mail and the Internet in their spheres of activity. They should be guided in subscribing to e-mail providers. This should be a basic right for every citizen.

The educated workforce with a good participation rate, the strategic location of the country, a strong commitment to IT and the liberalized policies of the government are some of the strengths that can be used by Sri Lanka to emerge as a leader in the IT revolution.

The government has realized and recognized these factors and is definitely gearing itself up for a full Information Technology environment through the recent stance it has taken with regard to a national information technology policy and to the new "E-Sri Lanka" interactivity project. This IT revolution in Sri Lanka is projected to bridge the digital divide among outside nations and within the country.

The much awaited policy for information technology of Sri Lanka, promoted and debated by the leading business people and economists, very recently became a reality, marking an all important step forward for the country. This will boost the socio-economic growth and the national production of the country. Sri Lanka lacked a policy and proper legislation with regard to computers and technology. Legislation was passed for the development of Information and Communication Technology and envisaging the creation of a national policy and agency for ICT. The bill provides for the setting up of committees for necessary action to be taken on information policy and IT. The bill also recommends the replacement of CINTEC with an ICT agency. A task force established after the act is passed will monitor the latest E-Sri Lanka Project action plan, and the entire country will be included in the project. The policy will emphasize IT education in Sri Lanka, improve the teaching of ICT in schools and universities, and create distance-learning centers throughout the country. The future ICT programme will also provide for the development of small and medium enterprises through aiding them in setting up their own e-businesses. Through the E-Sri Lanka Project, Internet kiosks will be set up with the aim of having 100 such kiosks within the first year and 500–1000 in the next five years. This will enable the people, especially the youth, to learn computer skills and to have affordable access to computers. This will allow the "Global Knowledge" concept detailed in the E-Sri Lanka project to reach the rural sector as well. Such e-govern-

ance implemented by the public sector of the country will definitely facilitate change in growth and productivity in both the public and private sectors. The government faces the challenge of ''making the programme relevant to the villages and the common man'' (Rodrigo, 2003, p. 67). For instance, people will be able to renew their driving licenses and draw on their pensions very quickly from where they are situated.

This new concept needs to be made known to all of the Sri Lankan people, and the government should extend the seminars and workshops organized in this regard to laypeople rather than holding these events for only major decision makers, planners and institutional heads. These officials at the very least should reveal the plans involved in the E-Sri Lanka project to the people working under them. There is an IT revolution in Sri Lanka that is making use of the global IT revolution in order to narrow the digital divide within the country. E-Sri Lanka is on the economic superhighway (Rodrigo, 2003).

For all these initiatives to take off, heavy funding is needed. Encouragingly, the donor community led by the World Bank has pledged such financial support. Hence with education, financial support and forming the correct attitude in its people, Sri Lanka is gearing itself towards an IT culture that will be part of daily life.

However, there needs to be legislation for computer crime and data protection. At the moment Sri Lanka lacks such specific laws. Computer-related crimes are taking place around the world and even in Sri Lanka. With the increase in the number of computer users, such problems have arisen in the recent past. Most problems arose in the banking industry and with credit cards. These are serious drawbacks and need to be attended to soon.

The legislature for copyright protection in Sri Lanka is the Code of Intellectual Property Act No. 2 of 1979, Part 11, where it states that authors of original literary, artistic and scientific work are entitled to the protection of their work. Nevertheless, computer programmes are not listed in the exhaustive list of works to be protected.

It use in the library and information field in bridging the digital divide: the challenge for Sri Lankan libraries

IT centered on the advances in computer technology and the availability of personal computers has played an important part in the changing role of the library and information field in the information age. Access to information through storage and retrieval is becoming increasingly important to librarians or those working in the information professions more than ever because of the use of online databases.

The perspective that a library is a repository of books has changed in the last half of the 20th century with the exponential growth of information and the rise of technology for management of information. The word 'library' is also quickly being replaced by the terms 'information centers' or 'information resource centers.' These new terms bring out the important part libraries play with regard to information. The librarian of the information technology era plays different roles according to different user needs due to the vast amount of information available on the Internet, and in online databases, along with the traditional documentary base. Users are interested in quality information, and libraries as information centers should make use of information technology to enhance the quality of the management of information. The users can be either enfranchised or disenfranchised, depending on their ability to access quality information.

In the case of Sri Lankan libraries and information centers, the IT revolution has had a positive effect. Library services are geared and have progressed towards making use of the E-Sri Lanka Project. Many libraries are automated or are using computers for information management by creating their own databases by using library software packages such as CDS/ISIS, ALICE for Windows, LIBSIS and other packages. The CDS/ISIS package is popular software among libraries in Sri Lanka. Most libraries are concerned with automating, library circulation, and internal databases for books and serials and acquisitions.

The National Science Foundation of Sri Lanka (previously the National Resources and Science Authority), a state-funded institution established in 1981, developed a bibliographic database, which led to the Union List of Scientific Periodicals and Scientific Books. The Sri Lanka Scientific and Technical Information Center (SLSTIC) of the National Science Foundation of Sri Lanka was established as a National Scientific Documentation Center for the country. The SLSTIC established the SLISTINET, the Sri Lanka Scientific and Technical Information Network, as the main network in the country, and other sub-networks were established to promote resource development and cooperation among scientific and technical libraries in Sri Lanka. This paved the way for library cooperation and exchange at the national level. The sub-networks are for agricultural information (AGRINET), health information (HELIS), information on

environmental aspects (ENLINET) and technical information (Techninet). All of these networks are interconnected and, although the focal point was SLSTIC, they now have their own focal points. SLSTINET is used for library cooperation for inter-library lending, acquisition of CD-ROMS and developing databases (Thalagala, 1997).

The NSC is also the focal point for the CDS/ISIS library software package. Most libraries in Sri Lanka use this software for their own database management and are presently using a Windows package known as WINISIS. The NSC provides awareness of new versions of software through training facilities, seminars and workshops. A WINISIS user club has been organized to discuss any problems and issues. The WEBISIS package was also made available to local libraries to connect their databases to the Web. In 1988, Internet connectivity existed among the member libraries of SLSTINET as seen in Table 1.

The libraries of Sri Lanka use standalone, LAN and internal methods for computerizing the catalogues. The National Library of Sri Lanka provides compiled union lists of networks, such as Union Catalogue of Scientific and Technical Books (UNICAST) of SLSTINET, Union List of Scientific and Technical Periodicals (UNILIST), and a database of natural resources (NATURAL). The National Library, which previously had only six members in the Union Catalogue of Libraries, now has 75 members, 50 of which were computerized in 2003.

Other institutions also have used Information Technology by creating bibliographic databases and networks in Sri Lanka. Union Catalogue of Economic and Social Development (UNIDEV) is a network of the Ministry of Finance, Center for Development Information. There are information exchange programmes operating through Internet e-mail groups as well, which is very important for quick access to information.

Libraries have progressed in the information technology era by making use of computers and the Internet and are ready to take on the challenges posed by the E- Sri Lanka Project.

Table 1 Breakdown of internet connectivity among SLSTINET users by library type (from data in Perera, 1998).

Type of library	Number
Special	30
Government	04
University	09
National library[a]	—

[a]Internet connectivity is available now.

Education for IT in libraries in Sri Lanka

There are a few important courses offered for acquiring knowledge in the rapidly changing ICT environment. The major professional body is the Sri Lanka Library Association, which offers the Computer Applications in Library Courses (COLA) programme, the syllabus of which accommodates changes in the IT field. Three-year library and information professional courses have modules on ICT. The SLLA organizes training courses, workshops and seminars to inform the members of changes in the IT field.

Kelaniya University offers a general bachelor's degree programme of three years, a special degree in LIS, a master's degree and a part-time three-tier diploma course. These courses all have modules on ICT. The master's degree programme in Library and Information Science is conducted with separate modules on library automation and information networks. The National Library of Sri Lanka also organizes seminars and provides open forums to discuss issues related to library automation and IT in Sri Lanka. Experts from within the field in Sri Lanka are invited to deliver talks on these subjects.

A noteworthy feature to mention is the recent successful attempt by a senior librarian from the University in Moratuwa to publish an index to websites in Sri Lanka. It is a very important and useful source in selecting information from the World Wide Web, which is not very well organized for searching for information. The author has researched all of the websites before publishing them in the index (Gamage, 2001).

Also, a very significant contribution to library computerization by the current President of the Sri Lanka Library Association is the designing of an integrated library management system using WINISIS, which has been used by more than 50 libraries.

Conclusion: dispel any misconceptions that it and the machine will replace human work

It is now known that IT does not by any means replace human work entirely. Nevertheless, providing an environment with more user-friendly systems that have commands for retrieval, speed and accuracy is helpful. The Windows Word program can be cited as an example that provides user-friendly commands for copying, pasting and deleting. The Internet enables the information worker to download information quickly. All these

contribute to the effective and efficient handling of information.

Fear of such misconceptions as loss of jobs, downgrading and redundancy in career prospects reigned a few years ago with respect to IT development. Social pressures, such as health hazards and fear of unknown work causing mental stress, also contributed to the idea that machines may replace the humans and be preferred by the management. Those were some of the speculations that came with new technological advancements in the workplace. Nevertheless, it was soon made known that fitting the systems closely to the human work life and making them more ergonomically satisfactory was a part of the information technology picture.

Now it is understood that technology is introduced to improve workflow, to bring about more efficient services in the information arena, and to allow certain services to continue. The misconceptions of IT mentioned above were also quickly conveyed across the library and information profession, and librarians feared obsolescence in the future. Nevertheless, storing, organising and retrieving information is in the hands of experts of the information field for access, making effective and efficient use of information. This has established a very reasonable basis for realizing that library and information work is much more likely to grow and the library profession to flourish rather than wither away in the decades ahead. Librarians will have new designations such as information specialist or Chief Information Officer (CIO) in the years to come. This is, of course, subject to competitiveness and the ability to make use of the tools of technology to deliver an effective and efficient service to the information clientele, rather than trying to ignore technological advancement and sticking to any outdated or traditional methods of transmitting knowledge. The new technologies must be embraced. Once again, it is clear that humanizing information technology is a key factor in the digital age and that information centers must take on the task of working towards this realization.

References

Central Bank of Sri Lanka (2003). *Annual report, 2002*. Colombo: Central Bank.

Gamage, R. C. (2001). *Arjee's Sri Lanka Web index for off-line searching*. Boralesgamuwa, Sri Lanka: Research Group.

Haag, S., Cummings, M., & Dawkins, J. (1998). *Management information systems for the information age*. Boston: McGraw-Hill.

Karunanayaka, C. (1984 February). Review of government information systems in Sri Lanka. Paper presented at the *Third Session of the ESCAP Study Group on the Co-ordination of Government Information Systems*, Paris.

Olsgaard, J. N. (1989). *Information science for library professionals*. Chicago: American Library Association.

Perera, V. N. (1998). *Survey on dissemination of information in SLSTINET libraries using information technology*. Dissertation for Masters in Library and Information Science, University of Kelaniya.

Quibria, M. G., et al. (2002). *Digital divide: Determinants and policies with special reference to Asia*. Manila: ADB.

Research and Information System for the Non-Aligned and other Developing Countries. (2002). *South Asia development and cooperation report 2001/0*. New Delhi: Research and Information System for the Non-Aligned and other Developing Countries.

Rodrigo, S. (2003). E-Sri Lanka on the economic superhighway? An interview with Milinda Moragoda, Minister of Economic Reforms and Science and Technology. *Lanka Monthly Digest*, *9*(11), 67.

Thalagala, D. (1997). National Information Network for exchange of scientific and technical information via E-mail with SLSTIC/NARESA as a pilot coordinating site. *Sri Lanka Library Review*, *11*(1), 33–39.