NEWSLETTER

OCTOBER/NOVEMBER 2018 ISSUE

NITC 2018

ISSC Participation

MCSSL
COMPUTER SOCIETY
OF SRI LANKA

AGM WITH MEMBERS NIGHT

CSSL PRESIDENT'S COLUMN

It is almost the year end! As CSSL formally closes a year with the AGM, which is just around the corner, it feels that way. The AGM is on 4th December. I invite all our members to attend the AGM, as we gather and reflect on our achievements, and discuss the way forward. Don't forget, soon after the AGM is the much sought after CSSL Members Night, which will be entertaining! For this part of the event, your spouse and friends can also be brought in. We look forward to seeing everyone there.

National IT Conference (NITC) 2018 just concluded marking a remarkable success. HE President Maithripala Sirisena was the Chief Guest, the relevant line minister Hon Harin Fernando was the Guest of Honour, the conference venue was Shangri La, 1600+ people participated across inauguration, conference and academic track, conference was partnered with IEEE for greater academic value, recorded a significant amount of financial sponsorship, had about 20 stalls/booths, featured a strong line up of local and international speakers and used a conference app giving the feel of a tech conference.

National ICT Awards organised by CSSL (NICTA) for the 6th annual occasion, also was held in parallel to NITC, HE President handed over the awards to worthy winners.

The CSSL Student membership is also growing rapidly. I am happy to report that few weeks back we registered the 2000th new student member within the last 2 years. Now across all our member categories, we have over 19,500 members, making CSSL, the National IT Association of Sri Lanka extremely strong. We are well positioned to represent and serve our members with this strength.

On behalf of CSSL, I wish to thank you all for the support extended towards achieving the success that CSSL is enjoying today.

See you at the AGM and Members Night on 4th December at Taj!

Thank you.

Yasas Vishuddhi Abeywickrama
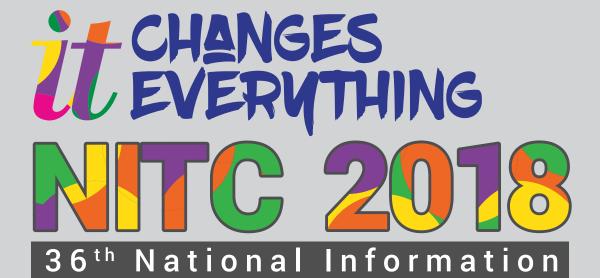President - Computer Society of Sri Lanka

CSSL
COMPUTER SOCIETY OF SRI LANKA

AGM WITH MEMBERS NIGHT

04th 2018
December
Taj Hotel
(Samudra Ballroom)
6.00 p.m. onwards

AGM - Free for Members
Members Night (After AGM)
Rs. 2000 for Members
Rs. 6000 for Spouse / Non Members
(Including - Dinner & Liquor)

Band : Heart & Soul

Sing Along and Gifts

CSSL
COMPUTER SOCIETY OF SRI LANKA

Secretariat:
275/75, Prof. Stanley Wijesundara Mawatha, Colombo 07.
T : +94 11 4713336   F : +94 11 2508009

it CHANGES EVERYTHING

NITC 2018

36ᵗʰ National Information Technology Conference

Gold Sponsors

Mobile Communication Partner

Higher Education Partner

IT Partner

Security Partner

National Partner

Strategic Partners

Digital Partner

Technical Sponsor

Digital Events Management Platform Partner

Security Intelligence Platform (SOC 2.0) Partner

Annual Strategic Partner

Design Partner

Official Content Streaming Partner

Recruitment Partner

Event Partner

Exclusive Print Media & Web Sponsor

Digital Banking Partner

Supported by

Speaker Partner

Electronic Media Partner

FinTech Partner

ICT AWARDS 2018

CSSL ICT Awards is an award ceremony conducted with the view of recognizing and motivating those who have served the ICT industry in Sri Lanka. These awards aim to encourage, recognize and celebrate excellence in ICT practice by rewarding the best and the finest of ICT Professionals. The final selections were made by a panel of experts from the ICT industry as well as academia.

ICT Awards 2018 was organized by CSSL for the sixth consecutive year and was held in parallel with the inauguration of National Information Technology Conference 2018. His Excellency President Maithripala Sirisena was the chief guest. Hon. Minister Harin Fernando was the guest of honor and 400+ distinguished invitees and ICT professionals participated in the event. The event was held at the main ballroom of Shangri-la Hotel Colombo on the 2nd of October.

This year, CSSL ICT awards recognized for 8 best performers of the year that includes ICT professionals, ICT Academics, ICT students, and a start-up as evident below. Prof. Samantha Thelijjagoda, Student Counselor/Executive Council Member of CSSL, chaired the project with the guidance of Mr. Yasas Vishuddhi Abeywickrama, President of Computer Society of Sri Lanka.
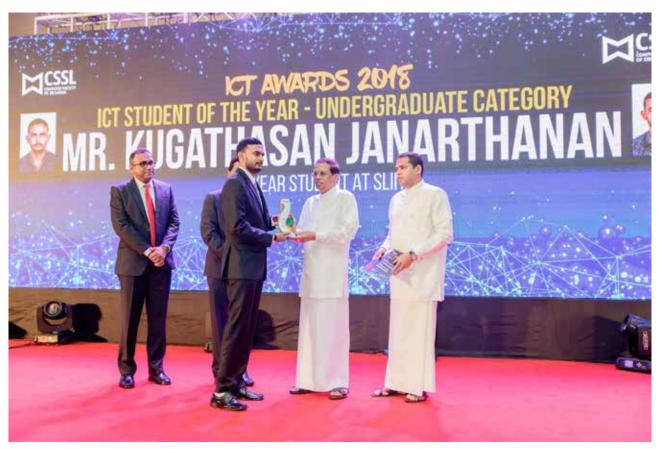
The judging panel of CSSL ICT awards 2018 included :

- Mr. Shanta Rajapaksha Yapa – Past President of Federation of IT Industry Sri Lanka (FITIS)
- Mr. Geethapriya Tillekeratne – Past Chairman, BCS -Sri Lanka Section
- Ms. Sandra De Zoysa – Member of the board of Directors - SLASSCOM
- Mr. Ahamed Nishadh – Representative from ICT Agency Sri Lanka
- Mr. Prabath Samindra Wickramaratne – Vice President of CSSL
- Prof. Samantha Thelijjagoda – Project Chair, CSSL ICT Awards

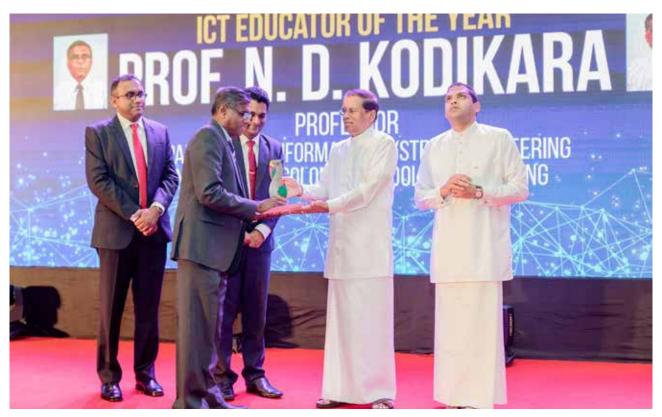The winner of CSSL ICT Student award – School category is Mr. Ashan Hansaka Rathnaweera.

ICT STUDENT of the year (Undergraduate Category) won by Mr. Kugathasan Janarthanan.

CSSL ICT Researcher of the Year is Dr. Kanagasundaram Ahilan.

CSSL ICT Leader of the Year is Mr. Kanishka Weeramunda.

CSSL ICT Educator of the year is Prof. Nihal Kodikara.

CSSL CIO of the Year was awarded to Dr. Prasanna Lokuge.

CSSL Emerging ICT Leader of the Year is Mr. Keerthi Kodithuwakku.

CSSL Best Start-up of the Year was awarded to Jendo Innovations (Pvt) Ltd.

CSSL DEGREE ACCREDITATION RECOGNIZED AT GLOBAL LEVEL

CSSL HONORARY FELLOW MEMBERSHIP AWARDS

Prof. Gihan Dias

Mr. M. S. L. Peiris

Mr. H. M. C. Perera

EVENT SPONSOR RECOGNITION

Gold Sponsors			Mobile Communication Partner	Higher Education Partner	IT Partner	Security Partner	National Partner
PEOPLE'S BANK	lanka pay	salesforce	Sri Lanka Telecom Mobitel We Care. Always.	SLIIT Discover Your Future...	SCiENTER	CryptoGen	ICTA ideas actioned

Strategic Partners			Digital Partner	Technical Sponsor	Digital Events Management Platform Partner	Security Intelligence Platform (SOC 2.0) Partner	Annual Strategic Partner
ifip	SEARCC	README		IEEE Advancing Technology for Humanity	ECHOWAVE	exabeam	Australian

Design Partner	Official Content Streaming Partner	Recruitment Partner	Event Partner	Exclusive Print Media & Web Sponsor		
GARVI DESIGN STUDIO	eduscope Live	CAREERBUILDERS executive search	PRIME EVENTS BEYOND CREATIVITY	පරිගණක	SUNDAY TIMES	DailyMirror

Digital Banking Partner	Supported by		Speaker Partner	Electronic Media Partner					FinTech Partner
FriMi	SLASSCOM	FITIS	Ovinway			YES	TV		iPay

CSSL COMPUTER SOCIETY OF SRI LANKA

NITC 2018
SUCCESS AT A GLANCE

- HE President Maithripala Sirisena as Chief Guest

- Line Minister Hon Harin Fernando as Guest of Honour

- Conference venue - Shangri La

- 1600+ people across inauguration, conference and academic track

- IEEE Partnership and the strong academic track

- LKR 7M+ sponsorship

- About 20 stalls/booths

- A strong line up of local and international speakers

- Smooth execution of all aspects of the conference

- Conference app giving the feel of a tech conference

27th Convergence India 2019

Digital India - Connecting the Unconnected

Pragati Maidan, New Delhi, India
29 - 31 January 2019

CSSL STUDENT MEMBERSHIP STRATEGY

Computer Society of Sri Lanka (CSSL) is the body that represents all Information Technology (IT) professionals in Sri Lanka. As someone starts to study IT, they create an interest as well as a need to be part of the IT community, therefore CSSL's belief is that one of the most important segments of its membership are the student members.

In early part of 2017, the CSSL Executive Council took a strong decision considering this background that all IT students in Sri Lanka should be student members of CSSL. This way, all future IT professionals will come under CSSL umbrella early on, and grow with CSSL and one day become associate members and then professional members, getting the value of being part of the IT professional network in Sri Lanka.

Students are studying at government and private educational institutions, and that is the source for student members. As the implementation strategy for the above strategic direction, CSSL started to work directly with universities to register student members in bulk. This usually involves CSSL council members and staff visiting universities directly, conducting workshops to educate them about the value of being part of the national professional network and also insights about the IT industry, its opportunities and trends. At certain institutions, the CSSL has also registered all staff as associate/professional members during the same programme.

As a result, in 2017, CSSL on boarded 1287 student members, and in 2018 over 1100 students. Most of these students are 3rd year or 4th year students, who are getting ready to come to the industry and this process also facilitates their natural progression to CSSL Associate membership in a couple of years.

CSSL President Yasas V. Abeywickrama wishes to thank the academia for their support in successfully executing this strategy. In particular he thanks University of Colombo - School of Computing, SLIIT, ESOFT, University of Moratuwa, University of Kelaniya, University of Sri Jayawardanapura, NIBM and KDU.

"NATIONAL SECURITY AND CYBER DOMAIN: GLOBAL THREATS TO LOCAL CHALLENGES"

the paper presented by Director General Asanga Abeyagoonasekera of the Institute of National Security Studies Sri Lanka(INSSSL) at the National IT conference,3rd October 2018.

Cybersecurity and its impact to national security is a topic discussed at the global high table. Former US President Obama and Chinese president Xi Jing Ping both declared their governments will not engage in cyber related attacks and that they will combat them. [1] In the backdrop 5.6million fingerprints and security clearance records of 22million was breached. From 2015 to the present cyber-attacks has become a top national security issue for many nations. Russia and China also signed a comprehensive agreement on Cyber security.

It was clearly evident also from the news on the last US presidential election which had another country accused. [2]

After Land, Sea, Air and Space, Cyber the 5th domain has become the most complex domain when it is looked at from a national security perspective. Cybersecurity issues are contentious and proving to be difficult even as the incidents of cyber-attacks, cybercrime and cyber terrorism grow exponentially according to Arvind Gupta former Deputy NSA India. [3]

Unlike nuclear deterrence where you will know the players who are developing the arsenal scope and the quantity with few actors. In the Cyberspace the situation is completely different. Multiple actors with complete anonymity is at play there are no clear cut definitions of the nature of cyber-attacks. Every year, the attackers and their tools are expanding and evolving. Some even suggest cyber deterrence will fail because of lack of attributability in cyberspace since anonymity is the key. This itself is the fundamental weakness of cyber deterrence.

Placing cyber security at national security

Table 1. Vulnerabilities and Types of States (taken from *People, States, and Fear* (1991))

		Socio-political Cohesion	
		Weak	Strong
Power	Weak	Highly vulnerable to most types of threats	Particularly vulnerable to military threats
	Strong	Particularly vulnerable to political threats	Relatively invulnerable to most types of threat (less inclined to characterize issues as military)

Table 2.   Cyber Vulnerabilities and Types of States

		Socio-political Cohesion	
		Weak	Strong
Power	Weak	De-stabilizing political actions in cyberspace, attacks on Internet infrastructure, criminal activities	DDOS and other major attacks on critical infra-structure*
	Strong	De-stabilizing political actions in cyberspace	Criminal activities in cyberspace

framework could be used to help resolve lack of consensus among international community. A theoretical analysis can be used to identify how cyber security fit into the nations security. Barry Buzan [4] observes vulnerabilities of a state and describes a state as weak and strong, depending on its power and social cohesion (Table 1). Forrest hare [5] has applied the theory with inclusion of Cyber vulnerabilities in to the equation and thus observing the strength of a state depending on how power and social cohesion will affect cyber vulnerabilities (Table 2). Therefore, even with power and strong social cohesion, it is suggested that criminal activities still can take place. A weak power with weak social-political cohesion is vulnerable to de-stabilizing political actions in cyberspace. According to the model, stronger power with weak social-political cohesion like Russia still could have destabilizing actions in cyberspace and a stronger power with stronger social-political cohesion like USA will have to face criminal activities in cyber space.

The theory has its limitations whereas a state might not exactly fit the description of a given quadrant. They may shift from one quadrant to another and these shifts may happen so fast and could be unexpected by the state. Recent Kandy communal violence can be taken as an instance where it shifted to an unstable quadrant from a stable one with the influence from social media.

We can identify eight key issues in cyber space faced by nations globally according to an expert report from World Economic Forum [6] ; Critical Infrastructure Protection, Cyber Piracy, Systemic Risk and Resilience , Technology and Law , New norms of Collaboration , Cyber War - 5th Dimension of warfare , Cyber Crime and Security of Things. Now Let me discuss the eight areas:

Critical Infrastructure protection

The need to protect the cyber integrity of critical infrastructure like energy grids and sanitation systems is one of society's paramount challenges. The proliferation of systems that fuse the cyber and physical worlds by blending physical infrastructure with computing power may increase functionality, but it also creates more targets for cyberattacks. An attack on even just one critical infrastructure sector, be it energy-related, the financial system, communications networks, or water services, could leave communities or even entire nations crippled. In 2016, USA dealt with 290 incidents. But the real question is, has Sri Lanka got its critical infrastructure protected from cyber-attacks? The answer is clearly no and not invested at adequately in this area.

Cyber Piracy

Card payments on internet is projected to increase reaching 70 billion by 2022

according to a research from RBR [7]. Data sharing and collection has become part of every electronic transaction. Calls to abridge privacy in the name of better security must be countered with solutions that strengthen both and still manage to create a climate conducive to economic growth. Therefore, rules for data sharing must be transparent and ensure protection of individual privacy with increasing data theft.

System risk and resilience

Just as a country with extensive borders must fortify a relatively greater number of potential points of entry, the growing expanse of digital networks has multiplied the amount of digital ground that must be placed under surveillance. Data fusion and automation could be used to identify cyber-attacks and potential intrusion. However, this presents new challenges, as cyber security professionals now have to determine just how precise their warning systems are; automation that produces false alarms, and fails to detect actual threats, jeopardizes cyber security.

Technology and Law

With evolving cyber threats, it has become a legal struggle and a nightmare to impose regulations. Public officials must be up-to-date and collaborations must be done with experts to minimize the issues. An inability to stay ahead of the curve creates the risk of abuses (through ignorance or malice) with no legal recourse - and may leave entire nations without the ability to make an informed response to cyber-attacks.

New norms and collaborations

As the cyber world increasingly inserts itself into to the physical world, there is a hunger for new ways to collaborate. Consumers, for example, are looking for different ways to collaborate with both with each other and with the businesses they patronize. European Union's Cyber Security Strategy can be named as an example. Each industry is

susceptible to different kinds of cyber-attacks. There is a general lack of understanding how states and organizations should conduct themselves in cyber space. Hence connecting academic researchers, private sector organizations, non-profits and government agencies, the transmission and shared analysis of big data can lead to more fruitful discoveries.

Cyber War

It can be named as the 5th Dimension of Warfare. While the internet began as military technology, cyber warfare is actually a relatively new concept - with which few people have any experience. Small-scale cyber warfare is already occurring on a daily basis. The American and British governments, for example, issued statements in early 2018 blaming the Russian government for the "NotPetya" cyber-attack, which they said was intended to de-stabilize Ukraine. USA is already set to attack foreign infrastructure during future conflicts. UN has shown concern over formulation of rules governing cyber warfare as traditional international agreements cannot address these.

Cyber Crime

Our lives have been made easier through the online connection of appliances via the Internet of Things, and increasingly powerful mobile devices. But this has also spawned more devices to potentially hack, and more opportunities to commit cybercrime. This has led to an arms race between creator and cybercriminals. Criminals have found it to be lucrative to target both individuals and businesses, by holding technological assets hostage not only via DDoS attacks, but also with the use of so-called ransomware to first block a person or firm from accessing their data, and then demand payment in order to unblock access. The "Wannacry" and DDoS attacks affected over 150 countries and brought harms to United Kigndom National Health Services and Russian Interior Ministry in large scale.

Cybercrime is not limited to the internet that most of us are familiar with. It also extends to the darknet, where interaction can remain anonymous. The darknet provides a large black market connecting nefarious dealers of illegal goods to anyone in the world, and is a haven for criminals. It also serve as a place to recruit agents to further spread ransomware on computers at their schools or companies. It is particularly important to train employees of organizations on how to spot potential threats, and to institute policies that encourage workers to report potential security failures so that action can be taken quickly. Backup files should also be kept, and regularly updated.

Security and Things

The so-called Internet of Things ties everything together, from our cars to our phones, to our medical devices and our houses, through internet connectivity. The research firm Gartner has estimated that the total number of connected "things" will more than double to 20.4 billion by 2020 from 8.4 billion in 2017, while security spending related to the Internet of Things will reach $1.5 billion in 2018, a 28% increase compared with the prior year. Questions arise concerning consumer consent, compensation etc. Manufacturers depend on accurate shipping information, militaries depend on maintaining full control of armed drones, and patients depend on properly functioning, wireless insulin pumps. All could put privacy, money and lives at risk.

When looking at the global context, other states have addressed cybersecurity in their national policy frameworks. For example, UK has framed a National Cyber Security Strategy 2016 to 2021, investing £1.9 billion to make Britain secure and resilient in cyberspace. National Cyber Security Centre is established as a hub of world class and user friendly expertise for businesses and individuals. India, as a state in our region, too has included Cybersecurity into their policy plans. They established their Cyber security policy in 2013.

Cybersecurity challenges for Sri Lanka

It is true, our Cyber domain was not attacked in large scale compared to other nations. But that does not mean we are not vulnerable for future attacks. Sri Lanka's unique position and influence of many global powers are visible variable and cyber in this equation is an important domain. Cyber espionage and intercepting data is discussed today, in the US few months ago Chinese telecommunication equipment provider was seen as a national security threat by a Pentagon report. Undersea Chinese owned PEACE cable will connect Africa South Asia and East Asia another concern for some nations.

Misinformation and Disinformation has proven to be of danger to Sri Lanka. Incident of Communal violence escalated due to misinformation through social media was evident. And recent disinformation on article appeared in Hindu Indian press on Mithrashakthi[8] and Indian aircraft bringing Sri Lankan military personnel to Bodh Gaya[9] as exercises to counter China could create confusion and instability with Chinese relations.

According to Secretary, Ministry of Defence, Kapila Waidyaratne,[10] Sri Lanka is in the process of drafting a cyber-security policy, and stated it is vital to identify mechanisms for implementation and policy execution. It was INSSSL the national security think tank in 2017 after a round table discussion with cyber experts on a cyber attack which came up with the recommendation the importance of having a National Cyber Security Strategy. Subsequently Mr.Wasantha Deshapriya gave leadership for this strategy to be developed and I am certain we will soon have a national strategy for cyber security for our nation after inputs from all stakeholders.

A multi-stakeholder approach is needed to address cyber security threats. It is pivotal to engage Armed Forces, Police, the public sector and the private sector. Nation has to

strengthen its law enforcement capabilities in the cyber domain. For coordination amongst various agencies a National Cyber security Coordinator (NCSC) and a National Cyber Coordination Center (NCCC) should be created.

A Cyber security R&D Policy should be created to develop our own in-house capabilities and capacity as a nation. A nation that does not develop its own capabilities will have to depend on other nations for protecting its cyber space which again is a threat. Our own encryption algorithms has to be developed to avert cyber threats. It is pivotal we focus on the eight areas discussed on this paper and invest in cybersecurity to protect any national security threat from this domain to our nation. Thank you!

References

1. Kopan, T., Holmes, K. and Collinson. S. (2015). U.S., China say they won't engage in cybertheft. [online] CNN News. Available at: https://edition.cnn.com/2015/09/25/politics/us-china-cyber-theft-hack/index.html [Accessed 1st Oct. 2018].

2. Shane, S. and Mazzetti, M. (2018). The Plot to Subvert and Election. [online] New Yoke Times. Available at: https://www.nytimes.com/interactive/2018/09/20/us/politics/russia-interference-election-trump-clinton.html [Accessed 1st Oct. 2018].

3. Gupta, A. (2016) 'Securing Cyber Space: A National Security Perspective', in Samuel, C. and Sharma, M. Securing Cyberspace: International and Asian Perspectives. New Delhi: Pentagon Press. pp. 17-22.

4. Buzan, B. (1991). People, States and Fear: An Agenda for International Security Studies in the Post-Cold War Era. UnitedKingdom: Harvester Wheatsheaf.

5. Hare, Forrest. (2010). The Cyber Threat to National Security: Why can't We Agree. Estonia: CCD COE Publications. pp. 2018.

6. (Experts from the World Economic Forum's Expert Network and is curated in partnership with Benjamin Fung, Canada Research Chair in Data Mining for Cybersecurity, Associate Professor, School of Information Studies, McGill University)

7. RBR, https://www.rbrlondon.com/research/

8. 'To counter China', India-Sri Lanka Joint Military Exercise in Pune from Oct 13. (2017). Indian Express. Available at: https://indianexpress.com/article/india/to-counter-china-india-sri-lanka-joint-military-exercise-in-pune-from-oct-13-4884495/

9. Kaura, Vinay. (2018). Sri Lankan soldiers to visit Bodh Gaya: India employs military diplomacy, cultural outreach to offset Chinese offensive. Available at: https://www.firstpost.com/world/sri-lankan-soldiers-to-visit-bodh-gaya-india-employs-military-diplomacy-cultural-outreach-to-offset-chinese-offensive-4587471.html

10. Biyagama, H. (2018). National cyber security policy in the offing: Defence Secretary. Daily FT. Available at: http://www.ft.lk/front-page/National-cyber-security-policy-in-the-offing--Defence-Secretary/44-663274

ISSC PARTICIPATION

Sri Lankan team facilitated by CSSL and powered by ESOFT Metro Campus emerge Runners Up at the recently held International Schools Software Competition 2018 in Brisbane, Australia. The Lankan team was managed by Dr. Ajantha Atukorale.

RISING FROM THE ASHES BY NAYENI FERNANDO: OFFICIAL BOOK LAUNCH.

Nayeni Fernando Publishes 'Rising from the Ashes: recounting her experience of the devastating bomb attack on the Central Bank.

In this day and age where gender inequality and gender pay gaps become a constant topic of discussions, there is also the exception of women like Nayeni Fernando, a founding member of the Computer Society of Sri Lanka and author of recently published memoir titled, "Rising from the Ashes: A Twenty Year Journey with the Central Bank of Sri Lanka."

Fernando is no stranger to the Sri Lankan ICT industry. She has spent a lifetime building computer systems that revolutionised banking systems of both Sri Lanka and Bangladesh. Her book, dedicated to the memory of the late A. S. Jayawardena – former Governor of the Central Bank - details Fernando's experiences over the course of her career at the Central Bank. This long career saw her leading her team to build complex systems such as the automated cheque clearing system and even rebuild the entire Central Bank IT department following the 1996 Central Bank bombing.

The book was launched on the 18th of September at the Ecumenical Institute for Study & Dialogue in the presence of Dr Indrajit Coomaraswamy, Governor of the Central Bank.

Speaking at the launch, Dr. Indrajit said, "IT systems today are very much the lifeblood of the Central Bank. Sri Lanka was one of the first countries in south Asia to implement an automated cheque clearing system and Nayeni played an integral part in thais process. She has been an exemplary example of a public servant and a citizen of the world." Also Speaking at the launch of the book, Dr. Nimal Sanderatne mentioned, "This is one of the few books that I have read, which moved me to tears. It's a moving personal story that recalls key events of the Central Bank and banking in Sri Lanka. Some of these include the Automated Clearing Facility developed by Nayeni and her team, and the horrendous events from the 31st of January 1996 bombing of the Central Bank. It then goes on to share how the Central Bank rose from the ashes as the title says."

Nayeni Fernando's memoir, "Rising from the Ashes: A Twenty Year Journey with the Central Bank of Sri Lanka" is available now at Vijitha Yapa book shops.

FUTURE SOCIAL ISSUES OF SRI LANKA

Speech delivered by Eranda Ginige at the Sri Lanka National Information Technology Conference held in October 2018 in Colombo.

When I was invited to speak at this conference, it took me some time to figure out what exactly I should be talking about. As a social entrepreneur, and somebody who is promoting social entrepreneurship, I often spend a lot of time reading about and evaluating social issues. So I thought I'll use this opportunity to build up some futuristic scenarios grounded on the Sri Lankan realities caused by or accentuated by the rapid technological advancements.

The theme of this session is ICT and inclusive society. I would like to modify this theme as Technology and Equal Opportunity in Diversity. I think inclusivity as a concept is flawed because it assumes there is a mainstream, and that there are people excluded from that mainstream, and somebody should "include" them into the mainstream.

It's like how the western elitists tell us how to develop as per their mainstream standards, without any respect for our own civilization, history, culture, values, strengths, weaknesses and aspirations.

Equal Opportunity in Diversity

Therefore I think a better concept is Diversity because it values everybody for all their differences without comparison. And when you create Equal Opportunity for all those different people, we should ideally get a society without discrimination.

And I think it's time we stop talking about Information and Communications Technology as a separate silo because ICT is now indistinguishable from all of modern technology.

Let me start with the present situation and what might happen in the near future. I'll use a real example to explain this. I met an amazing woman, from the rural Puttalam District, who left school at grade nine due to poverty, who was paralyzed waist down at the age of 17, and till today at the age of 40 is bound to a wheelchair. In the traditional sense, she is the personification of the disabled, the victimised, the marginalised, the vulnerable, and the excluded.

I'm the co-founder of ATH PAVURA – a TV show where social entrepreneurs pitch their social business ideas to a group of impact investors who we call Tuskers who will decide to invest or not then and there.

This lady applied to ATH PAVURA and I was the one who handled all the Sinhala calls in the first season. Her application wasn't impressive. But she kept calling and calling until I felt I need to give her a chance to come on the show purely because of her perseverance. A must have trait for any entrepreneur.

She came on the show and pitched, but didn't get the investment she was seeking. But she won the hearts of the country. With the support of some Tuskers and others she now has a tiny factory at her home employing several women in her village.

Universal Design.

Now what I'm trying to say is that she managed to do all of that thanks to a little Nokia feature phone. That's her tool. That's how she connects with people. That's how she gets everything done.

But now she is unable to move to the next level. It's difficult for her to hold a smartphone with her condition. Setting up email accounts, typing letters to clients, creating spreadsheets, getting inspiration from Pinterest, promoting her products on social media are all daunting tasks for her.

My point is we already have a large population in Sri Lanka, who want to but are unable to make use of some of the basic technological advancements which some of us take for granted. And the fact that the language of technology is still predominantly English is and will continue to be a challenge.

I'm not saying that she should be trained on all the above skills and teach her English. Because then that's the inclusivity approach. It's not a scalable solution.

I believe it should be the other way round where technology should be designed for everybody irrespective of their strengths and weaknesses. Universal Design.

And then we are seeing this whole 4th Industrial Revolution happening. Machine learning, AI, AR, automation, blockchain, quantum computing, smart homes, smart cities etc., all which I think you would've discussed in detail already in the past two days. I'm not necessarily for or against all of it, because I think technology is not good or bad. I think it's good AND bad.

Future of Work

The most obvious outcome of this is loss of traditional jobs especially functional jobs performed by humans through division of labour. A good example is the traditional screen printing industry. Silently most small scale press companies were either shut down or converted to digital printing. Those people who operated those machines lost their jobs and were unable to learn computer graphics design and digital printing skills.

I don't think in Sri Lanka, there is a labour shortage. What we have is a cheap labour shortage. Our employers are simply not paying living wages. I cringe everytime I hear our policy makers brag about how cheap our labour is for foreigners. That is one factor which you cannot depend on to develop a country. And I think that's the main reason why the youth opt to drive a three wheeled taxi over working at a factory or at construction site.

I think the first real hit will come in in the apparel sector. Apparel sector employs close to one million people in Sri Lanka. Even if ½ of that, a half a million jobs are lost, how can we manage that situation? The optimists say that there will be new jobs created. But can we possibly re-skill all these people to do these new jobs which obviously need advance skills? Do we have the investments to do that? And do we have the will to do that? And from an economies of scale point of view it doesn't make sense to cut low paying jobs and creating equal number of high paying jobs.

And there is a worse scenario. When the biggest buyers can make their own clothes by robots, why do they even need to buy from us? Can our top apparel manufacturers even compete with the scale of investments in technology happening in China, India, Brazil and elsewhere? So there is a chance that some of our biggest job providers will shut down altogether, or bought over or relocated. In a situation like that we will not only lose jobs but we will lose a big chunk of our GDP and export revenue.

And almost every labour intensive work can potentially be taken over by robots. With climate change, water crisis and energy crisis in the horizon, the 21st century agriculture will become precision farming managed by intelligent systems with limited human labour. Amazon already uses robots to manage their warehouses. Taxi and heavy vehicle drivers will eventually be replaced with driverless

autonomous vehicles. Even sex workers are very likely to be replaced by robots.

With machines cleaning the house, washing clothes and taking care of kids, and the smart houses take care of themselves, the demand for housemaids in the middle east would gradually decline. OR it could increase if the supply increases due to loss of jobs here, again worsening the social issues as a result of the women work migration

And as Decentralised Apps develop, most of the jobs in the service sectors including banking, finance and legal will also disappear. With AI assistants the call centers will have to be shut down. A lot of government services will have to be digitized and we'll see a huge drop in human government servants. OR it could get worse by governments recruiting more government workers to manage the loss of jobs in the private sector, which will in turn create pressure on the economy.

Although it'll probably take a little longer than in the manufacturing sector, the service sector will get hit sooner or later. And I think the services will be decentralised with professionals providing more and more freelance services in a global workplace, rather than working inside cubicles in big offices.

Future Society

Now let's look at the social issues of that future. I don't think this change will happen in Sri Lanka as fast as it would happen in the developed countries. But since our economy is already dependent on other developed countries, we will still have to face the impact. I think the most probable scenario is that we as a country will become more isolated and left behind, because we simply can't keep up with the global transformation of technology. That is not necessarily bad, because then we will have no choice but to become self-sustainable.

In this future the income gap will continue to widen, leading to more social injustice and unrest. There will be a widening mismatch between the skills of the youth and available jobs. In Sri Lanka we will not be able to afford many of this technology anyway. Remember how we were told in the 90s that the price of a PC will be so cheap in the future? Bu only a quarter of households in Sri Lanka has a PC today. And a huge population will find it extremely hard to adapt to this new international commerce.

Our education system is already lagging behind in making workers suitable for the current workplace; unless we make a radical change in our education system we will continue to produce workers to fail in the 21st century.

So in such a future, how are we going to make sure that all citizens of Sri Lanka have equal opportunity? Maybe we need to restructure our labour laws, tax systems, industry sectors. Re-imagine our development ambitions and economic strategies. Most probably we will have to create a universal basic income system. But are we able to fund such a system remains a challenge.

So what can we do about this? We can be pessimists, expect the worse and blame it on Donald Trump, technology itself, politicians and everything around us. OR we can be optimistic about this coming change and expect our lives to somehow get better.

Or we can prepare ourselves now, be realistic and design future-proof solutions to these challenges. Design our common future for us, by us in such a way that we become self-sustainable in the future. And to preserve our country with all its living and non-living resources for our future generations.

TIME TO RENEW
YOUR MEMBERSHIP

Contact : 112592762

CSSL Account No: 0029 6000 1039

Bank & Branch : Sampath Bank, Corporate Branch

Enforcer of Sri Lanka's IT professional framework,
encompassing CSSL Code of Ethics & Code of Conduct.

National IT Conference | **IT MASTERMIND** | **CiO FORUM** | **ICT AWARDS** | **CSSL TECH TALK**

Little Drops of Water | **CSSL Degree Accreditation** | **IT Blast** | **NSSC** National school software competition | **ISSC** International school software competition

Members Night | **Lobbying and Policy formulation** | **CSSL Tech StartUp Resource Centre**

A member of

SEARCC | **ifip** | **OPA** | **ICTISC INDUSTRY SKILLS COUNCIL** | **SOCIAL MEDIA WORKING GROUP Sri Lanka**

CSSL

COMPUTER SOCIETY OF SRI LANKA

CSSL Secretariat

The Computer Society of Sri Lanka
275/75, Prof.Stanley Wijesundara Mawatha
Colombo 7, Sri Lanka