Computing and its Ability for Significant Impact in Nation Building: Case Study of Singapore

transcribed plenary speech of
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For the following case study, Singapore has been selected as it is a country in the Asian region that is small in size and population but made significant progress in a short period of time compared to Sri Lanka. The following analysis does not contain "what to do" or "how to do it." It is simply compares Singapore's journey thereby allowing developing nations such as Sri Lanka learn from them. Therefore in this analysis, topics that are relevant to national development in the IT sector will be discussed with the author's opinions. These assessments will be highly beneficial to students, academia and those involved in the industry.

1981 the National Computer Board (NCB) was created. The NCB concentrated on three areas which are mentioned below.
1)   Civil Services – Ministries and Government etc.
2)   Education
3)   The ICT industry

This was quite forward thinking on their part as Sri Lanka was yet to make any such decision in regard in the field of Information Technology in the early eighties. Right after the creation of NCB; Singapore not only computerized their 10 ministries they did all their IT work with an amazing low number of 800 IT professionals. This number would reach 33,000 in 18 years. Therefore it is obvious that the Singapore computer education strategy was very sound. The current IT revenue was 69 million Singapore Dollars. Meanwhile Sri Lanka is still struggling to reach the 1 billion mark. But the author believes this target is achievable as Singapore has done it easily.

From a history point of view in 1999 – 2000, a Singaporean visionary by the name of Michael Yap was responsible for giving the Internet to the masses. However one must realize that Singapore is relatively a small country. Therefore it is much easier to give everybody Internet access when compared to Sri Lanka which is much larger in size and population. Michael Yap is still involved with the IT industry and his primary contribution towards the development of Singapore was increasing the internet availability.

The key driver of ICT and IT related tasks in Singapore is Infocomm Development Authority of Singapore (IDA). The IDA is equivalent to the ICTA (Information and Communication Technology Agency) of Sri Lanka and plays a key role that drives of all national IT related programs in Singapore. The author has observed that the IDA carries out their activities according to master plans that have been segregated as 10 to 15 year blocks.

The author noted that the IDA worked in par with IDA and together with telecommunication organizations and ICT companies worked together in a systemic fashion and finally achieved great results such as Singapore being the IT hub in Asia. Their current goal is attempting to be the world's first smart nation.

There are many programs conducted by the IDA which is a non-government entity. They facilitate several citizen related services like government websites. They also carry out different types of services like citizen services. As an example citizens can do almost all of their government related services, over the internet or by mobile, without leaving their home include services such as payments. Then the IDA introduced the concept of "SingPass" which is utilized by every Singaporean. A similar concept is strived for in Sri Lanka. Their e-citizens portal is very attractive and easy to use because of its user friendly and attractive design.

The author during research came across an interesting program called accreditation. This program allows independent companies to get accreditation from IDA which allows them to work with the government. These techniques allow companies to work directly with the government as it gets rid of unnecessary hindrances such as red tape. Such techniques are now being introduced in Sri Lanka as well.

The smart nation concept does not really stop at websites. Singapore is now experimenting with the concept called Internet of Things (IOT). IOT is a futuristic concept where all personal electronic devices are connected to each other via the internet. Many experts consider that IOT is the next big leap in globalization. Not

only usual devices such as a personal computer, a laptop or a smartphone are connected, appliances such as watches, televisions, alarms and air conditioning units will be controlled by the Internet. This includes other devices such as traffic. Before anyone leaves their home or office, they will know the about the current traffic situation, because all the sensors which are connected through internet provide the user with intelligent information. Singapore is currently engaged and experimenting with this concept and the area of "Jurong" is being utilized to carry out various experiments and is considered as a test laboratory. Soon every country and nation will start creating models based on the findings and inventions that the Singapore has carried out. It is the author's personal opinion that Sri Lanka should make use of these experiments that is done in Singapore. Sri Lanka will get the competitive advantage by taking some of their concepts up early.

The following table will show a comparison of the current statuses of Singapore and Sri Lanka. By examining this table will allow Sri Lankans to realize the effort is required to be in par with Singapore?

Factor	Singapore	Sri Lanka
IT Revenue	Nearly 80 billion dollars	Closing on 1 billion
e-Governing Ranking	Often in 1 or 2	Not in the top 10
Use of computers in business	Around 90%	No data
Use of Internet	Very high	Average
Man-Power Number	160,000	80,000
Population	4 - 5 million	21 - 22 million
Internet users	90%	20%
Land size	697 km^2	65,610 km^2

The author also made the following observations about Singapore.
- Internet access in public places is given free.
- Everyone has internet access at home.
- Their IT workforce is growing. If anyone is interested in IT they will be taught about the subject. That is how their high number is maintained.
- IT related services in Singapore which also includes government related activities. These

include a numerous services such as revenue license, birth certificates, land registries, company registries etc.
- Singapore has strict rules, codes and guidelines in regard to their ICT practices. At first the government will make recommendations. This will be reviewed by the Internet service providers and telecommunication companies like Sintel etc. for their feasibility. There is a great deal of government and enterprise correspondence and communication before anything is formalized.
- Singapore government takes the bold step of public involvement and participation. By doing this no individual or group involved, cannot complain against anything that is new.

However in the story in Sri Lanka is showing promise of improvement. The ICTA was started in 2003 for the national policy to be set up with the cabinet ministers. ICTA was formed in that way so that they can interact with telecoms and help cabinet ministers with the public participation. E-SRI LANKA was another initiative that was taken. This was a 55 million dollar fund which was put in by the government getting them set up. As a result many changes took place. Around 50 ministers got connected. The number of IT professionals became 82,000. (In 2003 it was only 15,000.) Even the revenue increased from dollars 900 to 100. Also the internet usage is on the increase. But it is projected that with more help from government will help to get more people into the ICT industry as the labor force has been anticipated to be 8 times more.

It is the author's hope that Sri Lanka learns from Singapore and increases its IT force. Then work on the IT revenue. If Singapore can make such achievement, why cannot it be done in Sri Lanka? The author feels that ICT is going to be one of the main key industries in Sri Lanka. To achieve these goals the author makes the following recommendations.
1) Have an ICT master plan
2) Create professionalism and ethics in the field of ICT
3) Make achievable but targets with high expectations