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### **The challenge of creating and sustaining a socially inclusive e-citizenry: the proactive advocacy role of the National Library Board, Singapore**

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#### **Abstract**

*In a recently released Infocomm Technology Roadmap entitled iN2015, Singapore hopes to provide its citizens a milieu where people live, work and play digitally. The government has embraced infocomm technologies for economic sustainability and global competitiveness. Singapore has been accoladed with a second ranking in the world's e-government leadership survey in 2003. The dilemma faced by Singapore is that with almost no natural resources, she relies heavily on its citizens as its human resource and the need to renew and reskill as an imperative for survival. Key points from the roadmap will be shared with participants in the form of an illustrated history of Singapore's e-government development. The presenter will contextualize the Singapore's e-government framework and agenda for creating an e-citizen, highlighting the growing digital divide, the large graying population and the blue-collar workers. Participants will learn how the government is addressing this by setting in motion to a series of innovative public education programmes and incentives with key partners such as the public and private sectors. The National Library Board, Singapore (NLB) has been proactive in using its critical mass of over 31 million vistorship and its network of 40 borderless libraries to offer a range of programmes. The presenter will provide vignettes of how the NLB worked in collaboration with the Infocomm Development Agency (iDA) to promote e-government applications and foster e-citizenry to further*

*the NLB's mission of fostering learning and expanding the learning capacity of the nation. The information and IT literacy programmes which had successfully reached out to the heartlanders and demystified infocomm applications for social inclusion will be elaborated upon. Libraries will be celebrated as possible partners for government agencies to offer e-government services leveraging on infrastructure and resources. The presenter will introduce the Singapore government e-citizen website [www.ecitizen.gov.sg](http://www.ecitizen.gov.sg) and share creative and innovative ideas for participants to take back as possible learning applications for their respective organizations*

## **1 Introduction**

### **1.1 Retrospective on e-government in Singapore**

A range of definitions surfaced from a literature review of the word e-government as interpreted by different agencies and institutions. This clearly indicates the interest in the topic where different initiatives, models and frameworks have been adopted. The common denominator in all of these definitions seems to be that these are initiatives by the government to leverage the Internet to make accessible and available information and services through a one-stop portal to its citizens. UNPAN's (United Nation's Online Network in Public Administration and Finance) definition is worth noting as it encompasses some key elements which librarians and information workers will relate to. UNPAN identified five guiding principles of e-government initiatives. These are:

1. Building services around citizen's choices
2. Making government and its services more accessible
3. Social inclusion
4. Providing information responsibly
5. Using IT and human resources effectively and efficiently [1]

Internationally, Singapore is seen as a country that embraces information technology (IT), making the country well known for its efficiency and economic success and it is no surprise that Singapore had started its e-government initiatives in the early 80s. A chronological time-line clearly illustrates the systematic development of an e-government service and justifies why Singapore was rewarded with a second ranking in the world's e-government leadership survey in 2003.

Lim [2] succinctly presented the Singapore government's thrust to accelerate, integrate and transform public services in four main waves of progress:

#### **▪ Early 80s: The National Computerization Plan**

The focus of this was to computerize the civil service and the return on investment would be manpower savings, operational efficiency improvement, and better information support for decision-making, pioneer services for the public.

#### **▪ Mid-80s: The National IT Plan**

Collaboration and data sharing amongst government agencies was the next focus resulting in the creation of data hubs: land, people, and establishment. The bottom line here was "one-stop non-stop" and intra-agency's IT readiness.

#### **▪ Early 90s: IT2000**

The government's vision was to Make Singapore an Intelligent Island, leveraging IT to improve the quality of life, economic competitiveness, and human capital realization. The strategic thrust in this phase was to position Singapore as a global IT hub.

#### **▪ Late 90s: Infocomm 21**

The government begins creating an infocomm-savvy citizenry. The IT industry matures and the Asian economic boom earlier helped to create a synergy in the infocomm technology (ICT) industry. Singapore becomes a vibrant and dynamic Infocomm capital.

### ▪ **Early 21<sup>st</sup> Century: Singapore Infocomm Foresight 2015**

The iDA has recently released its 21<sup>st</sup> century Infocomm blueprint called iN2015 (pronounced in-2015) where the future trend will be the confluence of “info-nano-bio” technology sectors and applications [3]. iN2015 is a consultative and inclusive masterplan that seeks both public and private sector inputs on positioning the ICT industry in Singapore. This will be elaborated upon later in the paper.

## **2 e-Citizen Equation = economy + employment**

### **2.1 The Singapore Agenda**

Singapore had no choice about wanting to adopt an e-government strategy. The island city-state is a relatively new country gaining independence in 1965. With almost no natural resources, the only resource fueling the country is its human resource of just over 4 million. It is within this context that Singapore needs to adapt to remain competitive in a global economy. Singapore embraced and harnessed ICT to position itself as one of the more successful developing countries. As Singapore transits between the information and knowledge-based society, new competencies and vocation demand IT skills and keeping up with the changes cannot be solely a matter of personal choice. Especially in Singapore, where human resource is the only resource, the need to renew and reskill is imperative for survival. The role of the government therefore became indispensable in creating and sustaining a socially inclusive e-citizenry.

### **2.2 A Graying Population**

Data mining the Census 2000 statistics revealed some worrying trends. By the year 2030 it was estimated that about 19 per cent of Singapore's population, or 800,000 Singaporeans will be aged 65 years and above. Given this, workers will have to be retrained and jobs redesigned and there will be strains on healthcare. The taxation system will have to be adjusted. The government's readiness to address this has already begun. Incentives are being given to younger couples to have more children.

### **2.3 The Unskilled and Unemployed**

The unskilled workforce is facing a tremendous obstacle to remain employed in a knowledge-based economy. Even though the unemployment rate of 4.5 per cent is predicted to decrease, there will still be structural unemployment. This refers to that group of people who remain unemployed no matter how much the economy grows, especially older workers with skills that are no longer relevant and who find it hard to retrain. Then there is frictional unemployment: with 4 per cent of the workforce now in part-time work. More will be unemployed at any one time as many will be hopping between jobs. All of this translates into some 7 to 8 per cent of the workforce not in full-time employment: 70,000 jobless, and another 80,000 with part-time work. [4]

### **2.4 The Digital Divide**

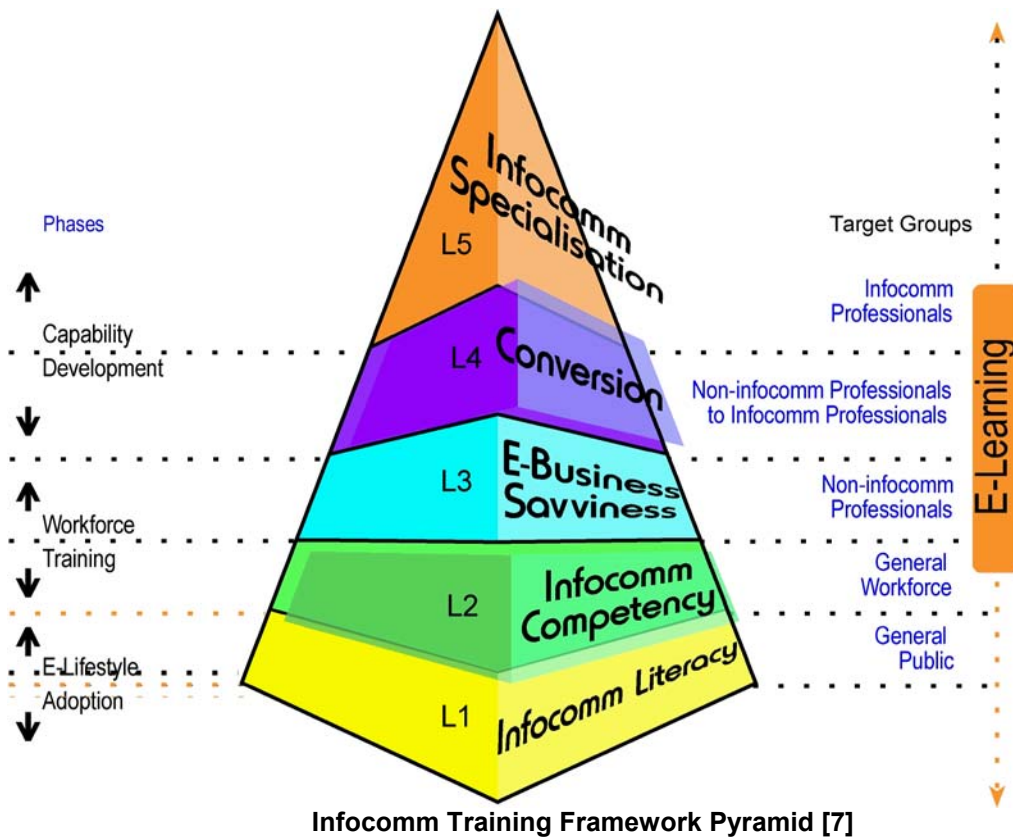
Politicians have acknowledged and voiced concerns that the digital divide had not narrowed much, and that the outlay for connectivity is still high despite the liberalization of the infocomm industry. Clark claimed that if the gap between the IT haves and have-nots were not addressed, countries would not be able to embrace new telecommunications and apply them for social cohesion. “If issues of access and appropriate support are not addressed, these [disadvantaged] groups will tend to be marginalized even more and the digital divide will widen. On a wider scale national, state, territory and local governments are exploring a range of strategies for bridging the digital divide, including greater use of libraries and schools, and the creation of community centres.” [5]. Singapore's then Prime Minister Goh Chok Tong, alerted the nation of the growing

digital divide and called on agencies to turn the digital divide into digital dividends to create a more e-inclusive society [6].

### 3 Thermometers of Surveys and Lifelines of Lifelong Learning

#### 3.1 Infocomm Literacy Survey

The 2000 Infocomm Literacy Survey conducted by the Infocomm Development Authority (IDA) indicated some improvements. However, blue-collar workers tend to be non-infocomm literate as a consequence of their vocation and 45% of the working population was still not infocomm literate. Lastly, the majority of the non-working population was non-infocomm literate as well. This was a reality check for the government and it thus resulted in the establishment of an infocomm framework. Creating an e-citizenry and making more government e-services available became an apparent part of this framework. This was significant as it will be seen later in this paper how the National Library Board, Singapore (NLB) took a proactive role in participating in the Level 1 framework of Infocomm literacy training.



It was also in 2000 that the government announced the e-Government Action Plan, where the public sector was to serve as the catalyst for creating an e-based society in the digital economy by creating electronic services that were integrated and customer-centric. The e-citizen Centre launched in April 1999 was one such example. By June 2000, 130 public services were available on-line.

## 3.2 Sustaining the e-Citizen with Lifelong Learning

Early e-government was often characterized as supplying only static, non-transactional information or at most, transactions with businesses. The latter are known as Government-to-Business (G2B) transactions and were the first type attempted by the government, usually involving procurement. Later advancements saw the creation of government-to-government (G2G) and government-to-citizen (G2C) transactions where the latter form the critical mass and success of e-government services. This was a form of e-inclusiveness for Singaporeans where they live, work, play digitally. The benefits of ICT training were on the highest agenda of the government where Singaporeans were able to renew, reskill and retrain.

The government, while setting the directives at national level, tasks appropriate ministries to spearhead and set in motion programmes that are cascaded at organizational level to reach out to the targeted groups. These involve different ministries, statutory boards, the private sector and even ethnic grassroots groups. Agencies such as the Ministry of Manpower (MOM), the Workforce Development Agency (WDA), the Infocomm Development Authority (IDA) and the NLB have been instrumental in championing some of these programmes. Noteworthy initiatives include:

- *Lifelong Learning Endowment Fund*: makes monies available for employees to attend training courses to upgrade their skills.
- *Singapore Learning Festival*: an annual event in collaboration with the MOM and WDA that is thematic in nature where the focus is on finding a job, becoming self-employed, and picking up a skill.
- *E-Celebrations*: a programme organized by IDA to promote an e-lifestyle.
- *National IT Literacy Programme*: ICT training and upgrading programme for Singaporeans.

The NLB as a statutory organization has also been proactively promoting and supporting these programmes and this will be elaborated upon in the next section.

## 4 Celebrating the e-Citizen

### 4.1 Proactive Role of the NLB

On a parallel track to the government's national ICT revolution, the NLB had been one of the beneficiaries of a government grant in 1995 helping to achieve the goals set in the Library 2000 Report. This report outlined programmes and projects to overhaul the public library system in Singapore. Thus in 1995, the NLB was set up to realize the Library 2000 plan of which the major focus was in using IT to support library services and collection development.

The mandate for the NLB to take a proactive role in creating and e-citizenry and be part of the e-government continuum lies in its mission statement, which is "to expand the learning capacity of the nation so as to enhance national competitiveness and promote a gracious society." It also strives to deliver a world-class library system that is convenient, accessible and useful to the people of Singapore. NLB's tag line of "knowledge, imagination, possibility", helps to foster creativity and innovation. With more and more Singaporeans being "born digital", the library had to respond too [8].

The NLB has invested vast amounts of monies in IT infrastructure and has constantly re-engineered its services to establish best practice models. Acknowledging this was a case study conducted by Harvard University on the transformation of public libraries in Singapore where libraries are seen as celebrating learning and a place that promotes a vibrant and pulsating lifestyle [9]. The NLB through pervasive computing provided opportunities for Singaporeans to

enjoy an e-lifestyle by becoming users of an e-library and services, which have increasingly supported a DIY approach and self-service transaction kiosks.

For the financial year ending in 2004, the NLB had a critical mass reach where its network of 73 libraries welcomed an annual visitorship of about 31 million of whom 1.1 million were active members. Its annual loans translated to 27 million. Enquiries translated to 2.3 million and online retrievals jumped to 4.7 million from almost zero a decade ago [10]. These achievements of key performance indicators was not enough as NLB realizes that there is always more that can be done: to reach out to the unserved. With most of the community libraries located in the heartlands, NLB was one of the strategic partners in making the government's e-services available through its numerous multimedia stations and via its digital library: [www.elibraryhub.com](http://www.elibraryhub.com).

## **5 Empowering the e-Citizen through Library Programmes**

In addition to the regular programming events for library users in the different libraries, NLB works closely with the different agencies to partner and host e-citizen programmes. In addition to using libraries as tax filing centres, some of the other noteworthy programmes include:

### **5.1 National IT Literacy Programme (NITLP)**

The objectives of the NITLP Programme was to equip workers, homemakers and senior citizens/retires with basic infocomm literacy skills, so as to enhance their employability in the digital environment, improve their quality of life and in turn bridge the digital divide in Singapore. The programme also helped participants to integrate IT and its application in their daily lifestyles. [8]. This was a collaborative project with the then, National Computer Board (now Infocomm Development Authority or iDA) who needed a permanent venue to offer basic Internet training to Singaporeans. NLB, on the other hand wanted people to be more than IT savvy and wanted to step up training on basic information literacy for its customers to become more info savvy. The One Learning Place (OLP) pilot project was initiated. The Toa Payoh Community Library was picked as a site where an area of 430sqm was set aside with 136 PCs connected to broadband. The challenge was to train 100,000 people in 2 years (May 1999 to April 2001). The objectives of this project were to:

- promote an awareness and usage of Internet and electronic resources to the public;
- bridge the digital divide by providing hands-on training at an affordable cost; and
- groom Internet and information savvy human resources [11].

Courses were delivered in English and Mandarin. The cost of courses was SGD\$20 as compared to more than SGD\$100 charged by commercial schools. There were a total of 86,847 people trained from May 1999 to May 2001 (87% of the target). The shortfall was due largely to limited capacity. When the pilot project ended in May 2001, OLP was set up in 3 other libraries representing the east, north and the west of Singapore. iDA developed an Infocomm Training Framework for different target groups and different levels of competencies. The NLB information literacy team proposed through tenders a curriculum for training selected modules under the Infocomm Literacy level. The curriculum was accepted and the team then developed the courseware, and trained a team of trainers to deliver the programme. The team even taught some of these modules. Titles developed included: Searching for Information, Emailing, Netiquette, and Internet Relay Chat. NLB was able to embed information literacy in the curriculum. The courseware was customized for different target groups, such as the senior citizens and homemakers.

The Great Singapore Surf was the final phase of the NITLP programme, which was held in 2003. This programme helped train participants to become infocomm savvy and introduced them to

online services and transactions including the use of digital library applications. NLB participated by conducting some of the courses with trainers from the One Learning Place.

## **5.2 e-Citizen Helper Service**

This is a service that was available all of NLB libraries, where a cyber guide was available during specified times to provide assistance to users wanting to access government e-services from the portal. At a recent walk-about a minister remarked, "We want to give citizens access to the government and are constantly renewing the portals to cater to specific interests...to encourage Singaporeans to use the government e-services, Retired Senior Volunteers Programme (RSVP) members will be stationed at the 83 e-service centres island wide to help explain to members of the public how to use the portals" [12]. Of the 83 centres referenced, 73 are libraries. This clearly illustrates that libraries are well positioned to act as delivery mechanisms for government e-services.

## **5.3 Information Literacy Programmes (ILP)**

To enhance the learning capacity of the nation, NLB believes that Singaporeans need to be more than IT or infocomm savvy; they need to be info savvy in the knowledge-based society. For this they need to be information literate where they would identify, manage, and use information in a meaningful way from both print and electronic resources. As part of the information literacy master plan, the NLB Academy, offers learning roadmaps for different groups of library users. NLBA offers four programmes for targeted at different groups of library users. These are:

- *Be InfoSmart*: A User Education and Orientation programme for the general public and students where they learn about library services, policies, and facilities.
- *Thematic Information Literacy Programmes*: The general public learns how to use the Internet to locate information resources on "hot" topics such as business, travel, crafts and hobbies, health and wellness.
- *Basic Information Literacy Programme*: Targets mainly students who learn how to use the Internet as a research tool more effectively. Evaluation and citation of web resources is also covered in this programme.
- *InfoPaths: Pathways to Information*: Corporate clients attend this programme where learn how to get the competitive edge by moving beyond being IT savvy to become info savvy so as to manage information in the knowledge-based economy.

## **6 Crystal ball Gazing**

### **6.1 iN2015**

Singapore has been recognized as the most successful economy in exploiting infocomm developments. Using the Networked Readiness Index 2004-2005, which measures the ability of individuals and the government to tap into the potential of ICT as well as the government usage of ICT, Singapore has come in first. Today, 74% of all households in Singapore own one or more personal computers and 65% have Internet access. Of those with Internet access, 2 out of 3 are broadband. Island broadband coverage and mobile penetration stand at 99% and 92% respectively [13].

In March 2005, the iDA made public the fifth Infocomm Technology Roadmap (ITR5), a 10-year plan to address the key challenges of economic growth, population trends and national security. Technologies – essentially nano and biotechnologies – would automate, analyze, synthesize and present personalized information in a proactive manner. People-centric technologies, context-aware sensors and intelligent agents would herald the Sentient Era, transforming the way we live, learn, work and play. [14].

The strategy is that the new technologies will transform key economic sectors for greater efficiency and competitiveness. “iDA hopes to engage the people, private and public sectors in this national co-creation endeavor, to ensure that iN2015 reflects real possibilities and a vision that is shared by all.” [15].

NLB, has proven itself as a partner in learning and from the above, it can be clearly seen that library and information services is a key facet for not only the different sectors, but also for all Singaporeans as e-citizens because the “i” in iN2015 will still be *information first*.

## **6.2 www.ecitizen.gov.sg: What’s In It?**

There are about 1600 government services available online. A quick site tour of the e-citizen website ([www.ecitizen.gov.sg](http://www.ecitizen.gov.sg)) contextualizes it as a one-stop portal to help people locate and perform transactions online with government agencies. “The portal is positioned as the first-stop for government services on the web and organized with the needs of the citizens and customers in mind. The end goal is to build a leading e-Government delivering the benefits of more conveniences to all individuals who live, work and play in Singapore” [16].

This is a collaborative effort between the Ministry of Finance and the iDA which was launched in 1999 as part of the nation’s e-Government Action Plan. The information architecture on the website is clustered around seven thematic towns covering the main government ministries. Many of the previously over-the-counter processes conducted at government offices have been made available on the website to facilitate e-commerce. Personalization is available where users can obtain a SingPass to access a multitude of services, including library transactions.

## **7 Conclusion**

In keeping with the government’s efforts in making more e-services available, the need to create an e-citizenry is crucial. This will create a critical mass but the challenge is converting them to become e-citizens. This paper documented the chronological developments and efforts the Singapore government’s adoption of an ICT framework to be economically competitive. The government has also endorsed lifelong learning as a strategy to create an e-inclusive e-citizenry. Various programmes have been set in place and key stakeholders have been participating and helping sustain the government’s initiatives. The presenter has also made clear how the NLB has played a role in this continuum. Learning points for others will be to get involved in such programmes in their respective countries and get representation. This will give the library visibility. The library needs government and private sector support. Open your doors to all and value is added to your services by optimizing on the critical mass that use your libraries, your infrastructure and your resources. Win mindshare first for social inclusion, and then win market share. Embrace the “born digital” generation.



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