

Advancing the Knowledge and Social Imperatives of Libraries

Perspectives from Singapore's
context

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Advancing the Knowledge and Social Imperatives of Libraries

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Are libraries an essential or discretionary public good? – The Knowledge Imperative

In a knowledge-based economy supported only by human resource, a culture of lifelong learning is a necessity for adaptation and innovation, not a choice.

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Are libraries an essential or discretionary public good? – The Knowledge Imperative

- Over the last decade, Singapore has embarked on a concerted transformation from an industrial/material-based economy to a knowledge economy.
- Human resource is Singapore's only resource. However, unlike finite material resources (e.g., oil and ore), human resource is renewable. It also avoids the Natural Resource Trap.
- While manufacturing has been the bulwark of Singapore's economic growth, we can no longer compete on cost (with emerging economies such as China and India).

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Are libraries an essential or discretionary public good? – The Knowledge Imperative

- Higher value-added economic activity is necessary to sustain higher wages and living standards in an advanced economy.
- Productivity growth that avoids downward price spirals
 - Achieved not merely through efficiency gains, but substantial value creation.
- **Competitive advantage is increasingly dependent on creative ideas and knowledge creation**
 - Maximum value-creation through Intellectual Property Creation (e.g., R & D in the Biomedical Sciences, the Creative Industries including Media, ICT and Design) and Entrepreneurship.
- Moving up the value chain requires manpower and talent with domain knowledge, skills, ideas and innovation.

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Are libraries an essential or discretionary public good? – The Knowledge Imperative

- Singapore has adopted a long-range perspective in manpower planning to anticipate emerging talent demands in new growth areas (e.g., researchers in the biomedical sciences, designers in the creative industries)
- Nurturing of talent is a continual, long-term commitment that extends beyond formal schooling, with libraries playing a critical role in:
 - Catalysing interests that lead to academic and career choices
 - Cultivating commitment to lifelong learning, upgrading and re-skilling (critical to workforce renewal amidst rapid technological change and shortening economic cycles)
 - Facilitating serendipitous learning and enquiry
 - Supporting research and the application of knowledge

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Are libraries an essential or discretionary public good? – The Knowledge Imperative

- Lifelong learning is not supported by formal educational institutions and courses within defined domains, but a learning ecosystem in which **libraries serve as an essential resource, facilitator, catalyst and teacher.**
- Foundations of Lifelong Learning, UNESCO Institute for Lifelong Education (Dave, 1976)
 - “formal, non-formal, and informal patterns of learning throughout the life cycle of an individual for the conscious and continuous enhancement of the quality of life, his own, and that of society”.

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Are libraries an essential or discretionary public good? – The Knowledge Imperative

- It is overly simplistic to presume that technology will render libraries irrelevant in the future. **While technology will continue to transform the delivery of information, the role of libraries in supporting lifelong learning is arguably enhanced.**
- Learning is a human activity and process of discovery, sense-making, analysis, re-interpretation and application. Technology is a supporting tool to aid the process, and not a replacement for human cognition and psychology.

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Are libraries an essential or discretionary public good? – The Knowledge Imperative

- Lifelong learning is a complex process (Kirpal in Dave, 1976) that involves:
 - Expansion: Range and content of learning over time in a multiplicity of learning situations, creating new motivations and new opportunities
 - Innovation: Creation of alternative structures and patterns of learning in response to multiple and diverse learning opportunities
 - Integration: Facilitation of expansion and innovation through adequate organisation and meaningful linkages

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Challenges in meeting the Knowledge Imperative and Why Libraries Have an Enhanced Role to Play

- The information and knowledge environment has shifted from Scarcity to Abundance.
- The velocity of knowledge flows and diffusion has increased rapidly.
- People are gravitating towards preferential information sources.
- Users expect instantaneous discovery and delivery of relevant information

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Challenges in meeting the Knowledge Imperative and Why Libraries Have an Enhanced Role to Play

- The wide range of user contexts require differentiated knowledge services and products to meet demands for speed and relevance:
 - The generation gap is shortening (e.g., services for 25-year-olds will not be suitable for those 30 years and above). The age difference between the blog and twitter generations is less than 10 years.
- While use of Internet Search Engines is now pervasive, information and media literacy levels have actually declined in this complex information landscape.

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Challenges in meeting the Knowledge Imperative and Why Libraries Have an Enhanced Role to Play

Project Information Literacy, University of Washington (2009):

- Today's college students dial down the aperture of all the different resources that are available to them in the digital age
- They have an information-seeking strategy that is reliant on a small set of common information sources (close at hand, tried and true)
- They have little inclination to vary the frequency or order of their use, regardless of their information goals and the plethora of other online and in-person information resources
- They favoured brevity, consensus and currency in the sources they sought.

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How Libraries of the Future can fulfill the Knowledge Imperative

Paradigm Shift 1:

Libraries as suppliers of comprehensive information sources (which are now in abundance and in wide circulation through the Internet)

Navigators and sense-makers of the information deluge

Enablers of knowledge seeking, application and creation

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How Libraries of the Future can fulfill the Knowledge Imperative

Reference Libraries, as institutions supporting in-depth research, should serve as key partners in information research and assimilation by:

- Curating e-research data and research publications (e.g., contextualising and integrating data sets and research from multiple sources). Libraries are unbiased institutions with the credibility to source, provide and validate information objectively in a subjective and complex media environment.
- Providing high precision and comprehensive search and access (with depth and domain expertise that is not inherent in online search engines).

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How Libraries of the Future can fulfill the Knowledge Imperative

Reference Libraries, as institutions supporting in-depth research, should serve as key partners in information research and assimilation by:

- Integrating new knowledge that is created and disseminated in highly fragmented formats and platforms (e.g., social networks, blogs, wikis, websites).
- Facilitating the sharing of data, information and knowledge across organisations and institutions.
- Guiding information-seeking communities to navigate the proliferation of open access repositories.

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How Libraries of the Future can fulfill the Knowledge Imperative

Paradigm Shift 2 (Public Libraries):

Public Libraries as repositories of books and information resources

Community nodes for information exchange and social learning

Facilitators of intelligent information consumption by communities seeking information relevant to their needs and contexts

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How Libraries of the Future can fulfill the Knowledge Imperative

Public Libraries, as the **key community nodes for lifelong and social learning**, should:

- Define the scope of information, reference and knowledge services with the community collaboratively.
- Provide avenues and opportunities for serendipitous discovery and learning.
- Seed interests and support the organic growth of learning communities.
- Engage the community in its programming to build sustainable learning communities.

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How Libraries of the Future can fulfill the Knowledge Imperative

Public Libraries, as the **key community nodes for lifelong and social learning**, should:

- Facilitate information consumption (aggregation, synthesis, analysis and use) by providing relevant services and information literacy training to users.
- Develop services and programmes that are tailored to “prosumers”.
- Serve as an anchor for virtual networks (e.g., social spaces for face-to-face interactions).

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How the National Library Board is intending to respond to the Knowledge Imperative

At the fundamental level, NLB is in the process of developing an Information Literacy framework similar to those of Australian & New Zealand (2004), Scotland and Hong Kong.

- Four dimensions of focus:
 - Cognitive, on which our public libraries are already work closely with the schools.
 - Metacognitive. Digital literacy does not equate with Information literacy (e.g., while the information literate person is ware that information processing is iterative, the current Google generation is interacting at 2.9 times per session (compared to a minimum iteration of 3: query, result review, and refinement).
 - Affective, by instilling personal enjoyment in reading and lifelong learning through the public libraries' programmes, such as 'Born to Read; Read to Bond', "10,000 Fathers Reading" and "Read Singapore".
 - Socio-Cultural, involving communities in knowledge sharing.

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How the National Library Board is intending to respond to the Knowledge Imperative

The National Library Board is embarking on plans to develop a [Gateway to Knowledge](#) in the specific domains of Science, Entrepreneurship & Governance.

- The initiative is shaped by the principles of lifelong learning and the paradigm shifts in the roles reference and public libraries play.
- The goals are to:
 - Meet information demand of the millennial generation
 - Entrench Singapore's lead in the region as an intellectual hub
 - Build a Knowledge Ecosystem for creation & export of Singapore IP
 - Propagate Strategic Learning Tools in Entrepreneurship and Design Thinking

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How the National Library Board is intending to respond to the Knowledge Imperative

How this will be achieved:

Building a Learning Ecosystem

MISSION
STRATEGIC THRUSTS

Inspiring and educating Singaporeans about Entrepreneurship and Design Thinking, nurturing and supporting the growth of industries and SMEs via multiple platforms, contributing towards the knowledge and intellectual capital of the nation that results in growth and development.

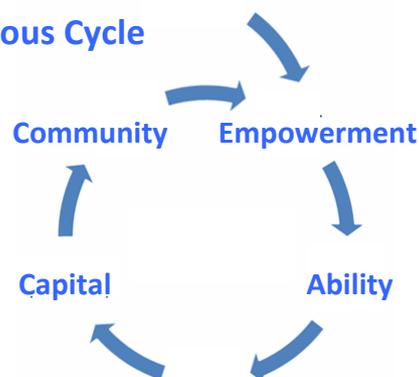
Community	Empowerment	Ability	Capital
Engage with diverse & wider communities inclusively to educate & inspire active participation	Support & enable aptitudes through the provision of information services & products (physical and virtual).	Build entrepreneurial competencies; through workshops & programmes, enabling meaningful participation & content creation.	To stimulate growth of Singapore's knowledge capital through the building & creation of assets

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How the National Library Board is intending to respond to the Knowledge Imperative

How this will be achieved:

The Virtuous Cycle



symbiotic inter-dependence rather than activity silos

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How the National Library Board is intending to respond to the Knowledge Imperative

How this will be achieved:

Inspiring and educating Singaporeans about Entrepreneurship and Design Thinking, nurturing and supporting the growth of industries and SMEs via multiple platforms, contributing towards the knowledge and intellectual capital of the nation that results in growth and development.

Community Empowerment Ability Capital

Programmes & Exhibitions to educate & raise awareness via collaborative mindshare of content

e.g., Entrepreneurship Series, Industry talks, Financial Literacy, Design Thinking Symposium, Home Brands Exhibition

Programmes & Exhibitions

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How the National Library Board is intending to respond to the Knowledge Imperative

How this will be achieved:

Inspiring and educating Singaporeans about Entrepreneurship and Design Thinking, nurturing and supporting the growth of industries and SMEs via multiple platforms, contributing towards the knowledge and intellectual capital of the nation that results in growth and development.

Community Empowerment Ability Capital

Bring together researchers, librarians, policymakers, publishers and students via online platform to foster knowledge creation & facilitate research and publishing by providing a one-stop access to relevant resources & services

e.g., Ideapolis, Community Businesses, Budding Entrepreneurs, Local Start-ups and SMEs

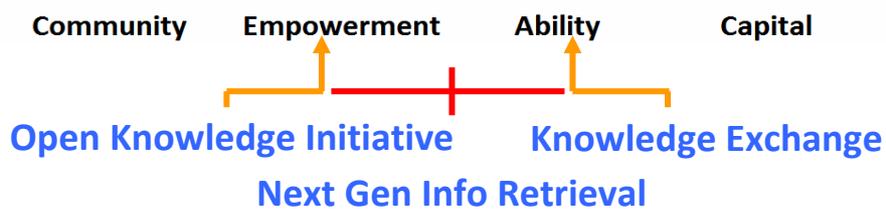
Seeding & Nurturing Communities

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How the National Library Board is intending to respond to the Knowledge Imperative

How this will be achieved:

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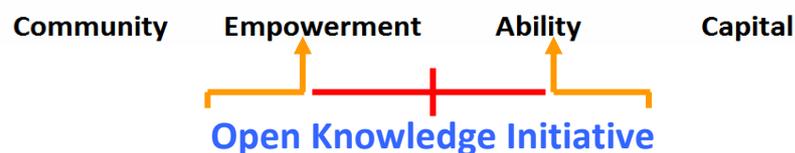


Develop and foster entrepreneurial capabilities, building of support software to improve business decision-making. New services such as Intellectual Property & Public Science Information Service & Business Technology & Standards Information Services. 25

How the National Library Board is intending to respond to the Knowledge Imperative

How this will be achieved:

Inspiring and educating Singaporeans about Entrepreneurship and Design Thinking, nurturing and supporting the growth of industries and SMEs via multiple platforms, contributing towards the knowledge and intellectual capital of the nation that results in growth and development.

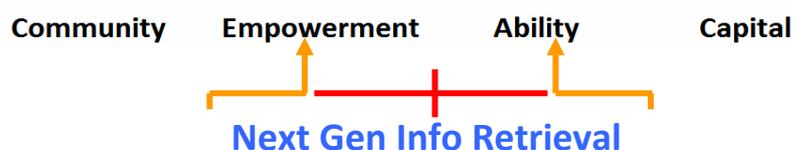


To enable Singapore based research to garner greater visibility for citation in publishing through proliferation of access to Singapore created copyrighted content via a shared National Repository of Publicly-funded research, supported by a Copyright Administration and print-on-demand infrastructure 26

How the National Library Board is intending to respond to the Knowledge Imperative

How this will be achieved:

Inspiring and educating Singaporeans about Entrepreneurship and Design Thinking, nurturing and supporting the growth of industries and SMEs via multiple platforms, contributing towards the knowledge and intellectual capital of the nation that results in growth and development.



To harness homegrown technologies from Singapore-based research institutes like IDMI, A*STAR to create an integrated retrieval environment, made accessible via an integrated retrieval platform (online and onsite)

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How the National Library Board is intending to respond to the Knowledge Imperative

How this will be achieved:

Inspiring and educating Singaporeans about Entrepreneurship and Design Thinking, nurturing and supporting the growth of industries and SMEs via multiple platforms, contributing towards the knowledge and intellectual capital of the nation that results in growth and development.



A marketplace of ideas to support policy, business and science communities in Singapore to exchange and learn from each other and to generate new knowledge.

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How the National Library Board is intending to respond to the Knowledge Imperative

How this will be achieved:

Inspiring and educating Singaporeans about Entrepreneurship and Design Thinking, nurturing and supporting the growth of industries and SMEs via multiple platforms, contributing towards the knowledge and intellectual capital of the nation that results in growth and development.

Community Empowerment Ability Capital

Entrepreneurial Exchange Initiatives

To foster the **creation of intellectual property** and economic transformation through programmes and initiatives that bring about **community networking and cross industrial collaboration**. Research is positioned as a tool driving strategic business decisions and development.

e.g., Entrepreneurship Series, Bear Fruit Academy, Creative Industries Xchange programme targeted at various stakeholders.

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How the National Library Board is intending to respond to the Knowledge Imperative

Outcomes:

- Collaboration among entrepreneurs, policy makers & academia, creating partnerships multipliers
- Knowledge Productivity (access and use of information)
- Knowledge dividends arising from information / knowledge support system
- Creation of Economic Assets

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Are libraries an essential or discretionary public good? – The Social Imperative

- Like Australia, Singapore is an immigrant, multi-cultural nation.
- With concerted efforts to attract international talent to supplement our human resource, cultural and ethnic diversity is growing.
- While inter-cultural ties have been harmonious, the integrity of this social fabric cannot be taken for granted.
- Ethnic and cultural differences could be exploited to precipitate communal tensions and fractures.

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Are libraries an essential or discretionary public good? – The Social Imperative

- Fragmentation is growing from narrowly-defined virtual communities and social distancing in high-density urban living.
- Several social trends are also impacting social cohesions in diverse communities:
 - Widening income divides, where perceived inequities of income distribution and economic opportunity could provide cause for marginalisation and radicalisation.
 - Influx of immigrants and transient workers, who may not integrate into the mainstream culturally and linguistically. They could also be scapegoats for local economic discontent.
 - Aging societies, like Singapore's, could face inter-generational tensions as the economic burden is increasingly shouldered by a falling proportion of economically-active citizens.³²

Are libraries an essential or discretionary public good? – The Social Imperative

National Libraries are ideally positioned to build social capital, cohesion and belonging through their roles as:

- Preservers, propagators and educators of the nation's collective history and culture.
- Extensive, democratic community social spaces, which connect cultures by fostering inter-cultural learning and interaction.

The preservation and promulgation of shared history and culture engender common values, belonging and emotional ties.

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Challenges in meeting the Social Imperative

- Growing complexity in the collection and curation of diverse cultural materials with the dynamic growth of new immigrant communities.
- Balancing cost and achieving a representative collection of the nation's patrimony.
- Emergence of multiple information formats (e.g., text, images, videos) in which culture and history are captured and represented.

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Challenges in meeting the Social Imperative

- Information units of history and culture are becoming fine-grained and disperse (e.g., blogs and twitter messages), creating challenges in:
 - Capturing a representative sample from the deluge of information.
 - Filtering meaningful content from overwhelming noise.
 - Classifying and cataloguing material with the necessary context for intelligent search and retrieval.
- Establishing global knowledge exchanges between libraries and institutions worldwide for efficiency in collection and preservation, and improved access to comprehensive resources (e.g., Singapore's history is not confined to historical and cultural materials published and residing locally).

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How Libraries of the Future can fulfill the Social Imperative

Paradigm Shift 3 (National and Public Libraries):

Passive custodians and legal deposits of national cultural heritage

Curators and access providers to cultural information and knowledge

Educators and promoters of shared history and culture

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How Libraries of the Future can fulfill the Social Imperative

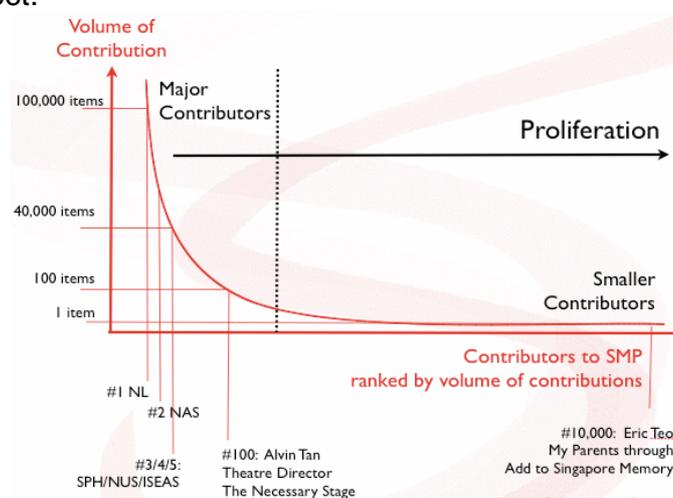
National Libraries, as the key custodians of national cultural heritage, should:

- Actively collect, organise and preserve the nation's evolving history in multi-faceted domains (e.g., economic, social, artistic and cultural developments), multiple modalities (e.g., print, image and audio-visual content, both digital and non-digital), official and informal.

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How Libraries of the Future can fulfill the Social Imperative

Capturing pluralistic histories through the Singapore Memory Project:



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How Libraries of the Future can fulfill the Social Imperative

National Libraries, as the key **custodians of national cultural heritage**, should:

- Preserve access to the content, and not just the content (i.e., ensuring old information formats are readable by new software and on new devices, and making non-digital information sources readily available on digital platforms).
- Curate and present the nation's evolving history and culture in a manner that is relevant and meaningful for each generation.

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How Libraries of the Future can fulfill the Social Imperative

Public libraries, as an extensive, **national network of social learning spaces**, should:

- Provide cultural learning experiences leveraging the heritage collection for individual communities and between communities.
- Engage individuals and groups in the collection and curation process.
- Seed and support the sustainable growth of history and heritage interest groups (e.g., in the documentation of local community history).

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How the National Library Board is intending to respond to the Social Imperative

The National Library Board is embarking on plans to enhance its role as a cultural institution with the national aim of fostering social cohesion through the holistic provision of services, content and programming in history, culture and the arts.

- The initiative is shaped by the principles of lifelong learning and the paradigm shift in the roles national and public libraries play.
- The goals are to:
 - Promote values of diversity in a multicultural social milieu.
 - Encourage cross-cultural understanding and interaction.
 - Engage the community actively in the collection and curation of ⁴¹ shared history and memories.

How the National Library Board is intending to respond to the Social Imperative

How this will be achieved:

Building a Learning Ecosystem

MISSION

Inclusive, extensive and vibrant involvement by Singaporeans in the collection, preservation, curation and learning of shared history and cultures, thereby encouraging social cohesion and values of diversity.

STRATEGIC THRUSTS

Community	Empowerment	Ability	Capital
Engaging diverse communities inclusively to raise awareness, nurture appreciation for shared history, culture and the arts	Supporting the exploration and discovery of history, culture and the arts through products and services (virtual and physical)	Nurturing abilities to navigate history, culture and arts content with information and knowledge literacy skills	Stimulating and facilitating the growth of Singapore's social and intellectual capital through content creation in history, culture and the arts

How the National Library Board is intending to respond to the Social Imperative

How this will be achieved:



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How the National Library Board is intending to respond to the Social Imperative

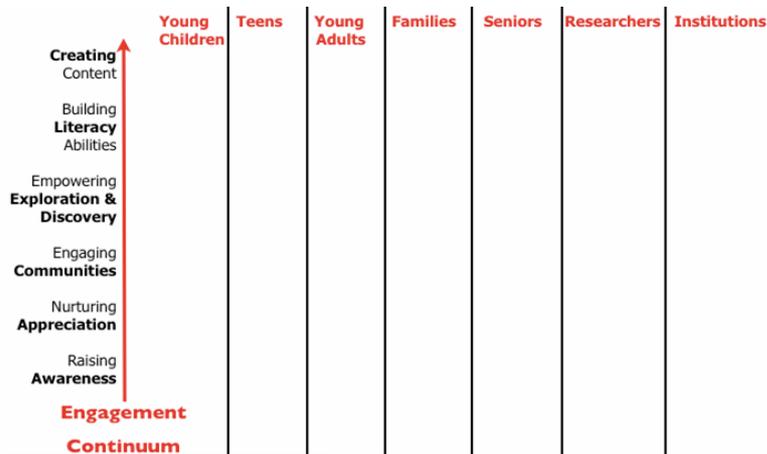
How this will be achieved:



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How the National Library Board is intending to respond to the Social Imperative

Creating a differentiated learning and engagement experience



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Singapore's Social and Intellectual **CAPITAL**

How the National Library Board is intending to respond to the Social Imperative

Outcomes:

- Knowledge and Understanding of Singapore's history
- Appreciation of Singapore's Multicultural Heritage
- Inter-cultural understanding and interaction
- Strong Social & Community Involvement
- Active & Sustainable System of Engagement

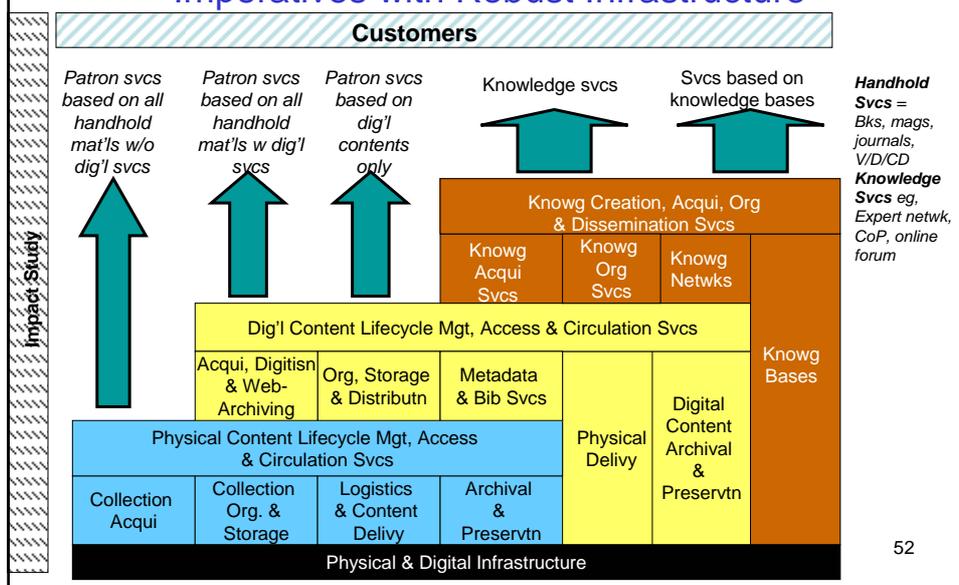
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Supporting the Library's Knowledge and Social Imperatives with Robust Infrastructure

- The Internet, networks, and mobile devices are driving the virtualisation of libraries.
- Much of back-end processing can now be outsourced (e.g., digital content management, sharing of library catalogues, acquisition of collections) so libraries can concentrate on the delivery of front-end services to customers.
- Information discovery is happening everywhere. While libraries are not the only sites of discovery, they should facilitate and help people access their resources readily and conveniently.
- Virtualisation of information repositories, information access and almost everything else is now possible.

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Supporting the Library's Knowledge and Social Imperatives with Robust Infrastructure



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Supporting the Library's Knowledge and Social Imperatives through Collaboration

- All libraries can collectively contribute to collections and collection development as technology has overcome the constraints of location and storage. Access to content is the remaining constraint.
- Libraries can share high quality metadata so libraries can coexist with Internet search engines by providing high quality search capabilities. (Research shows that people require high quality search for familiar domains and resort to internet search for unfamiliar domains.)
- Libraries could set up back end service hubs collectively, while individually providing localised front end services that are mass-customised.

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Supporting the Library's Knowledge and Social Imperatives through Collaboration

For the National Library, collaboration could involve:

- **Museums, Libraries and Archives** to share all resources and programmes, the National Library spearheading awareness programmes and community/institutional donations and acquisitions.
- **Communities** in the collection of memories and cultural artifacts, with librarians as guides.
- **Schools and educational institutes** to embed the National Library's resources in school curricula and research programmes.
- Making access to national repositories ubiquitous with resources available as linked data and **GYM-able** (Google, Yahoo, MSN).

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Supporting the Library's Knowledge and Social Imperatives through Collaboration

For Reference Libraries, collaboration could involve:

- **Academic and reference libraries**, with research librarians participating in specialist networks and serving as online community facilitators supporting special interest groups.
- **Experts, researchers and content creators**, to enable knowledge transfer to consumers.

For Public Libraries, collaboration could involve:

- **Community groups** to deliver customised information services (e.g., health information for the aged) and community-based virtual services accessible on lifestyle gadgets and platforms.

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Defining the National Library Board's Mission Holistically

- NLB's Knowledge and Social Imperatives are treated synergistically
- Efforts to support lifelong learning are centered on the mutually reinforcing outcomes of knowledge and social development.
- Libraries are the support structure for the continuous process of nurturing the "whole being's":
 - Knowledge and aptitudes, critical thinking, and ability to act
 - Awareness of self and the environment
 - Social role in the community

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Defining the National Library Board's Mission Holistically

- An overarching strategy is to create an Open Learning Environment which provides:
 - Access to in-depth resources through a network of reference libraries.
 - Access to experts and mentors through the research “collaboratory” and reference/specialist librarian network.
 - Support for social interaction as a cultural institution and social learning space.
- In the highly democratised information environment of the digital age, where a digital generation requires active engagement and interaction, the mission of libraries has to be intimately shaped and realised with communities.

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Defining the National Library Board's Mission Holistically

- We need to transform the library from a provider of community services to a **platform for community services** (initiated and innovated by diverse communities) so as to build self-sustaining communities.
- Libraries could provide infrastructural support for knowledge commons (e.g., NLB was recently approached to provide the platform for a Social Innovation Park, building on its programming and community networks in the promotion of reading to catalyse other forms of social entrepreneurship).

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Defining the National Library Board's Mission Holistically

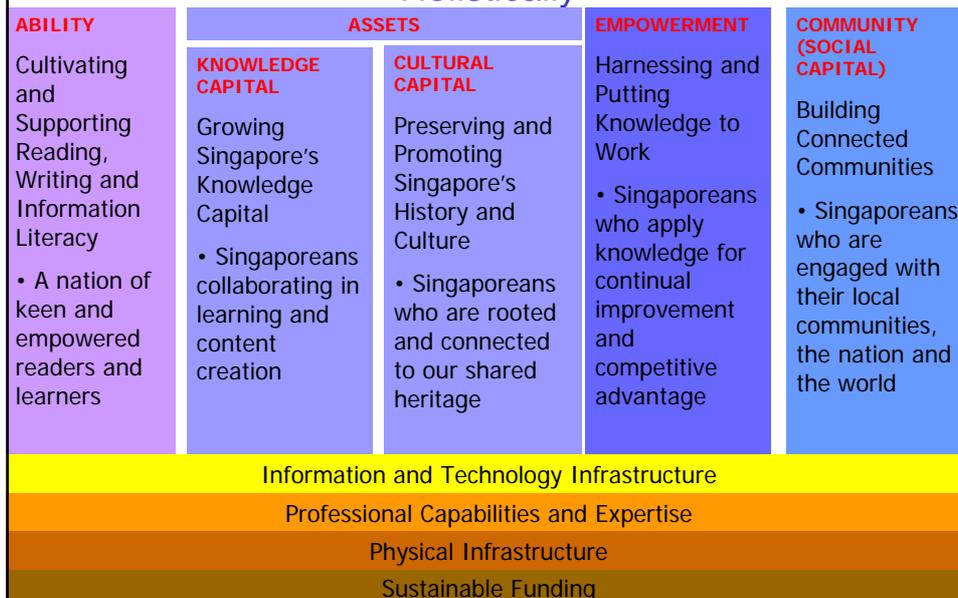
Obstacles to overcome:

- Current community participation is dominated by private platforms (e.g., Facebook, Google). The future management of such community content and content rights rests with platform owners, rather than the community.

- Changing the culture of libraries and librarians to embrace community support and facilitation.

- Extending the lifecycle of communities by supporting self-directed learning and growth.

Defining the National Library Board's Mission Holistically



Questions and Discussion