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# National Library Board Singapore: Delivering Cost-Effective Service Excellence Through Innovation and People

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The National Library Board (NLB) Singapore is a statutory board that managed to become a serial innovator. Its globally leading innovations in the library context include shelf-reading robots, and even entirely self-service libraries. NLB's consistent focus on excellent service delivery reinforced its commitment to innovation. Key levers were effective strategic leadership, a smart innovation strategy that made heavy use of technology — such as app-delivered self-service technologies, crowdsourcing, and robotics — as well as a people-centric staff culture. NLB managed to co-create attractive libraries of the future together with different types of community members, such as volunteers and corporations, ushering in a new age of citizen involvement while also preparing both the library and the population of Singapore for the knowledge demands of the 21<sup>st</sup> century. This case study describes NLB's drivers of successful innovation.



## Study Questions

1. What are the main transformation waves the National Library Board (NLB) has gone through?
2. How did NLB manage to create a strong culture of innovation and service excellence?
3. What did NLB do in terms of staff capacity-building in order to expand the propensity for innovation?
4. What was the role of technology and digital services in transforming NLB and improving the customer experience?
5. How did organizational strategy and culture drive NLB's digital transformation and innovation outcomes?
6. What else could NLB do to continue staying ahead as a "library for life" so as to achieve its visionary goals of "Readers for Life, Learning Communities, and a Knowledgeable Nation?"

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Vol. 46, No. 1, pp. 59–80; Jochen Wirtz (2020), "Strategic Pathways to Cost-Effective Service Excellence," in Eileen Bridges and Kendra Fowler, eds, *The Routledge Handbook of Service Research Insights and Ideas*. Abingdon-on-Thames: Routledge, Chapter 14, pp. 423–440.



## THE NATIONAL LIBRARY BOARD'S JOURNEY OF INNOVATION

The National Library Board's (NLB) vision is an ambitious one, to say the least. The vision's stated aim is to achieve "Readers for Life, Learning Communities, and a Knowledgeable Nation." Correspondingly, it describes its mission thus: "We make knowledge come alive, spark imagination and create possibilities." To be able to deliver on its mission, NLB became one of the most innovative libraries globally, having unparalleled member satisfaction while showing the highest labor productivity of libraries globally; it was even featured in academic research to examine how NLB could become an organization that delivers cost-effective service excellence! Naturally, this massive endeavor could only be approached with significant and sustained innovation, and a massive deployment of technology.

## THE NATIONAL LIBRARY BOARD'S VISION

The Board's innovation objectives were outlined in several master plans that envisioned the establishment of a world-class library system which sought to meet the learning needs of a rapidly developing young nation. The Board evolved through four waves of transformation, each successive wave building on what was achieved through the previous wave's master plan.

### Wave 1: Library 2000

The focus of the early transformation effort in Wave 1 was to develop and expand the infrastructure of an adaptive, world-class public library system in Singapore that would be convenient, accessible, and useful. Several strategic undertakings were formulated and subsequently

implemented, such as establishing a network of national reference libraries and a three-tier public library system of regional, community, and neighborhood libraries, as well as assisting in the setting up of school libraries and the development of specialized libraries for specific sectors. A coordinated national collection strategy was initiated to provide comprehensive coverage of Singapore's literary and publishing heritage. This culminated in the core collection of the Lee Kong Chian Reference Library with more than 300,000 items featuring materials in various formats (microfilms, maps, audio-visual materials, ephemera, posters, and print publications) related to the political, economic, and social-cultural history, as well as literature on Singapore. As Singapore developed into a global knowledge hub offering information on regional businesses and cultures, Wave 1 laid the foundation for safeguarding the documentary heritage and intellectual memory of the country in keeping with its aim to build a literate, informed, and participative society.

Another strategic goal was to ensure that the libraries would offer quality service through market orientation. The innovative use of radio frequency identification (RFID) technology-enabled self-service allowed customers to perform the check-out and return transactions themselves. As waiting times were minimized, customers could engage with the library more proactively. In a bid to remain relevant in an increasingly digital world, the National Library Board (NLB) launched the eLibraryHub, enabling users to access digital content easily from an online portal without having to be physically present at the libraries.

New strategic and symbiotic linkages between the government, businesses, and the general public were formed to ensure that NLB would meet the needs of Singaporeans in the 21<sup>st</sup> century. Through initiatives such as the Friends of the Library Programme, NLB involved community members, reaching out to volunteers whose personal preferences and abilities were matched with areas within its libraries. By organizing enriching programs for children from low-income families or delivering books to those unable to visit libraries, volunteers made a real difference and felt that they were a part of something greater than themselves.

### Wave 2: Library 2010

Wave 2 of the National Library Board's (NLB) transformation had an even stronger focus on information technology, supporting the leadership's desire to achieve higher productivity in library services. The reengineering of business processes had stretch targets in five key

areas: (1) Time-to-Market, (2) Time-to-Checkout, (3) Time-to-Shelf, (4) Time-to-Information, and (5) Library Planning, Setup, and Renewal. This also included greater emphasis on user education, so that library users could fully appreciate and explore the breadth of the collections.

The key thrusts of NLB's digital strategy included the following:

- Creation of immersive reading experiences inside physical library spaces with e-reading stations, multimedia video walls, and mobile services. The latter included the NLB Mobile app, which could be used to borrow items and bypass the queue at book-borrowing stations.
- Pushing personalized content and recommendations to encourage users to read more. This was enabled through patron analytics, smart displays, and devices.
- Increasing NLB's outreach through presence in spaces outside its libraries, such as personalized recommendations on partner platforms and spaces.
- Productivity-focused automation and self-service technology to optimize staff deployment and enhance patron convenience. For instance, thanks to reservation lockers, patrons were able to collect reserved items outside library opening hours.
- Data-driven library operations and collections planning allowed NLB to plan effective library services, optimize content usage, and provide relevant collections to users.

The innovative efforts by NLB to create digital libraries culminated in the OneSearch Service, an online search portal for information spread across a variety of resources, spanning NLB's libraries and archives databases as well as the National Heritage Board's museum repository of artefacts and artworks. Through the OneSearch Service, users could conveniently retrieve a wide range of digital content (books, magazines, audio-visual materials, e-books, photographs, films, maps, etc.).

As more people were reading online, NLB's "eRead" resources offered digital and audiobooks, newspapers, and magazines from various genres and in English, Chinese, Malay, and Tamil. Capable of retrieval from a wide range of digital content including books, magazines, audio-visual materials, e-books, photographs, films, oral history interviews, and maps, NLB once again achieved service excellence with technology as an enabler.

### Wave 3: Library 2020

Wave 3 was launched in 2016, with the motto "Readers for Life, Learning Communities, and a Knowledgeable Nation" to create more learning communities and inspiring spaces across Singaporean society.

To promote reading, learning, and literacy, the National Library Board (NLB) rolled out various reading programs tailored to the needs of different demographic groups. They include Early READ for children up to 6 years, kidsREAD for children of ages 4 to 8 years who are from low-income families, and READ@School for students of ages 7 to 17 years.

An example of NLB's concept of an "Inspiring Space" is the historical Former Ford Factory site which was once the assembly plant of the Ford Motor Company of Malaya. On February 15, 1942, it became the site where the British forces surrendered Singapore to the Japanese Imperial Army. In early 2017, the building reopened to mark the 75<sup>th</sup> anniversary of the start of the Japanese Occupation of Singapore. It features archival records and multisensory displays to bring history to life. After a public call for donations of historical materials such as Japanese textbooks or oral history accounts covering the years 1937 to 1954, NLB received more than 400 donated items.

As a guardian of historical knowledge, NLB's HistorySG projects, such as the Former Ford Factory, are critical for presenting Singapore's collective memory to the young and old alike. As a *Straits Times* journalist emphasized, "To entrench its place in the community, one would want the young to see the library as less a staid repository of tomes and more a throbbing hub of open minds, connecting physically and digitally over a host of ideas and creative impulses."<sup>4</sup>

How did a statutory board like NLB manage to become an award-winning serial innovator? Key fundamentals underpinning NLB's innovation success included: (1) an effective innovation leadership and innovation process, (2) a strong focus on (technology-enabled) service delivery, (3) an enduring culture of staff involvement and innovation, and (4) innovation through co-creation and 3 Ps (people, private, and public sectors) engagement.

<sup>4</sup> "Libraries as Hubs for Creative Learning," *The Straits Times*, October 12, 2015.

## Wave 4: Making the National Library Board a Joyous Place of Learning with More Digitalization

The National Library Board (NLB) continued to adapt and transform to keep its libraries and archives relevant. In 2020 during the COVID-19 pandemic, NLB enhanced its mobile app, Archives Online collection, and National Library information databases. Under the motto “Experiment, fail, succeed,” NLB continued to innovate as envisaged by its 5-year Strategic Libraries and Archives Plan 2021–2025 with the focus on making NLB a joyous place of learning and reading for all.

NLB also rolled out digital kiosks in 25 of its libraries for senior members to access some 200 digital government services and help seniors to make appointments for virtual one-on-one consultations with government agencies via a video conferencing pod, and ambassadors were around for those who needed more advice on how to access digital platforms. The goal was to train 100,000 seniors by March 2021 so that they could effectively use online resources, QR codes, e-newspapers, and e-books.

New digital learning zones and learning pods featured dedicated digital learning zones and spaces with interactive screens that allowed users to browse e-magazines, e-newspapers, and e-books. Many books and magazines were displayed on interactive virtual bookshelves and library patrons could borrow them by simply scanning the QR codes on the screens. Learning pods were equipped with interactive screens and access to e-resources such as more than 5,000 video tutorials. There was also a colorful children’s zone with communicative multimedia stations where kids could select their books.

## TRANSFORMATIONAL LEADERSHIP AND INNOVATION PROCESS

From the beginning, senior management exhibited strong, transformational, and intrapreneurial leadership as it worked with Singapore’s public administration to enhance organizational efficiency, digitalization (e.g., as part of the computerization of the entire civil service), and service delivery. All levels of staff within the National Library Board (NLB) were galvanized for technological and organizational change as the Information Age was ushered in. If one looks at the innovation strategy development process as a series of cascading stages where each stage derives from or acts upon the results of the preceding stage (see *Exhibit 2*), it becomes clear that

NLB’s leaders managed to ask the right strategic questions and followed through them decisively, step after step.



**Exhibit 1** Shelf reading robot

**Exhibit 2** Critical aspects of a Strategic Innovation Cascade\*

<b>1. What’s Our Purpose?</b>
Why innovate, and on the basis of what kind of objectives?
<b>2. Where to Play (Where Not to Play)?</b>
Where should the innovation’s focus and scope be?
<b>3. With What Intensity?</b>
How much innovation (e.g., incremental or radical) is wanted?
<b>4. How to Win?</b>
How should corporate innovation goals be pursued, and which unique value proposition should they be based on?
<b>5. With Whom to Innovate?</b>
With whom should collaboration be (e.g., internal partners and/or external complementors), and where are the innovation boundaries?
<b>6. With What Capability Assets?</b>
How can it be ensured that people in the organization are capable and motivated to make innovation work?
<b>7. With What Management Systems?</b>
How can working relationships be structured and organized to “get things done” innovatively?
What business processes need to be built in order to create and capture innovation value?
How can strategic innovation matters be tracked and innovation efforts be evaluated?

\*As an innovation strategy tool, the Strategic Innovation Cascade can point management’s attention to critical questions that need to be answered to make innovation work.



**Exhibit 3** Autonomous Bookdrop

## What is Our Purpose/Where Should We Play?

The National Library Board's (NLB) mission, "We make knowledge come alive, spark imagination and create possibilities," and innovation objectives were derived from several master plans envisioning the establishment of a world-class library system. National development goals, such as becoming an internationally competitive nation and a cohesive society with a strong national identity, paved the way for NLB to find the right "playing field" in terms of its vision, mission, localities, product and service categories, customer segments, channels, etc. Encouraging Singaporeans to discover and celebrate the joy of reading propelled many of its nationwide reading initiatives such as "Read! Singapore" (2005). The initiative was aimed at promoting a culture of reading fiction among Singaporeans, and a key component of the initiative was the promotion of short stories that were cross-translated. Presented in Singapore's four official languages, the initiative featured meet-the-author sessions, book club sessions, writing workshops, storytelling sessions, and book-derived workshops for children and adults. This allowed the public to be more hands-on with the library's initiatives. Important questions that NLB's leadership team had to answer concerned the *Intensity Level of Innovation Efforts* (With What Intensity?) and the strategic approach toward pursuing innovation goals on the basis of a compelling value proposition ("How to Win?"). The outcomes of such strategy decisions included the deployment of radio frequency identification (RFID) technology to enable self-service borrowing and returning, as well as the development of a new mobile application enabling library members to borrow materials using their mobile devices on the go (see *Exhibit 6*).

## With Whom to Innovate?

The National Library Board (NLB) became a leader in co-creation. An example of this boundary-spanning collaboration approach was the 2013 opening of the library@chinatown where whole day-to-day operations

are fully run by volunteers. Through this kind of novel service co-creation, NLB involved community members and public organizations, such as CP1 Pte. Ltd. (the property developer for the Chinatown Point shopping center) and Kwan Im Thong Hood Cho Temple, based on the 3 Ps sector motto (People, Public, and Private). It enabled NLB to tap into the knowledge, input, and resources of the wider community, contributing to improved public service delivery.

Gradually, NLB further strengthened its customer value proposition with a focus on "non-customers," and demonstrated the ability to create and capture new demand as evidenced by its "Verging All Teens" program rolled out in the Jurong Regional Library (the first library to hold a space created for teens by teens), and My Tree House, the world's first green library for children (created in collaboration with City Development Limited) to promote learning and reading for life in line with the "Library 2020" vision. The colorful indoor setting changed the perception of reading, while the décor was made of recyclable or environmentally friendly resources and completed with energy-saving furnishings. Such partnerships with private companies added to NLB's capabilities in developing and improving public libraries while serving as a touch point for these organizations to give back to the public.

## With What Capability Assets?

All this would not have worked if not for a strong foundation comprising a set of reinforcing capabilities and competency-enhancing activities, such as the Master of Science in Library Science program for library staff (developed together with the Nanyang Technological University in Singapore), embedded in a robust culture of learning and innovation.

## With What Management Systems?

Besides good innovation governance and strategy execution in general, the National Library Board (NLB) established various supporting management systems (e.g., for innovative information technology deployment such as the OneSearch service). Rather than focusing on traditional librarianship duties, staff across all levels were motivated to provide ideas for innovation and engage in new initiatives such as crowdsourcing. The latter became a core component of NLB's Citizen Archivist Project, which enabled the public to contribute to the nation's intellectual memory. NLB's success in innovation was driven by numerous value-adding business processes, such as rapid prototyping and open innovation, and an

**Exhibit 4** Examples of innovation processes and strategic actions taken by NLB

Organizations	Positioning
The organization generates, gathers, and screens creative ideas from all sources.	<p>The National Library Board (NLB) involved its own employees in the innovation process through various initiatives. An example of its “dare to try” innovation spirit and ideation process was the BlackBox program. It consisted of (i) a call for ideas, (ii) an innovation competition, (iii) development and trial, and (iv) the presentation of findings and recommendations to senior management.</p> <p>While testing out technology-based ideas, NLB employed a rapid prototyping approach called proof of concept (PoC), through which NLB could safely and economically assess the viability of an idea by developing small-scale projects. By maximizing time and resources within a limited period of time, the PoC approach helped NLB to evaluate the viability of ideas and minimize the financial risks they might pose.</p>
The organization incorporates new developments and changing requirements into innovations.	Predictive data analytics enables NLB to forecast user demand for new and existing titles which, in turn, leads to more efficient resource management and greater service quality.
The organization involves employees and partners in the new product/service design.	<p>NLB proactively maintained and expanded partnerships with overseas libraries, government agencies, non-profit organizations, private organizations, as well as communities.</p> <p>The library@chinatown was Singapore’s first volunteer-run public library that was co-developed with and managed by the community for the community.</p> <p>NLB’s mobile library, Molly, brought library services to orphanages, children’s homes, and special education schools such as Pathlight School (a school for autistic children) in collaboration with SBS Transit Ltd. and Comfort Delgro Pte. Ltd.</p>
The organization has a relationship with customers to identify and address innovation opportunities.	<p>NLB aligned itself effectively between several customer segments and its customer strategy, in line with its overall mission. An example was its engagement with seniors above the age of 60 and examining their requirements for productive leisure, mental stimulation, and social engagement. Tools deployed to understand their (future) needs included customer dialogue sessions and customer feedback channels.</p> <p>Customers were involved systematically in library renovation projects or when niche library spaces were designed for community members via face-to-face sessions and customer relationship management (CRM)-enabled feedback loops.</p>
The organization reviews management of innovation projects and validates them.	To ensure that innovation projects delivered the intended outcomes, NLB carefully managed the end-to-end maturation journey of an idea. Key milestones included planning, followed by business cases, project management, and post-implementation review.
The organization seeks breakthrough improvements in key business processes for value creation.	One strategic goal of NLB was to make its content discoverable with the help of digital services. NLB’s Mobile app, the revamp of its Archives Online, the Oral History Interviews Portal, and the OneSearch search engine were examples of e-services that were rolled out to facilitate easy access to content on Singapore and to NLB’s resources.
The organization evaluates and improves its management of innovation processes for product, service, and business process innovation.	One hallmark of NLB’s innovation culture was co-creation powered by the strategic belief in the importance of harnessing the power of collective wisdom via public participation.

Source: Various NLB materials such as its Innovation Award Report.

integrative performance measurement approach. NLB even deployed the use of geospatial analytics to better understand the borrowing behavior of library users across the island.

At the structural level, several innovation processes were implemented to create and capture innovation value. This provided a conducive environment for all ideas to be considered and then further refined for implementation (see *Exhibit 4*). Through the establishment of strong channels for internal communication within NLB, staff was kept informed about organizational changes and also encouraged to make suggestions for improvements. NLB's leadership team created a strong foundation for greater innovativeness by putting in place systems for effective people management (e.g., training programs on ideation and innovation management) and innovation process management (e.g., idea generation approaches together with staff, customers, suppliers, and other partners). While the impetus was to adopt advanced technology to improve work processes, NLB's leadership involved all levels of staff as part of the change efforts in order to create a trustworthy and engaged work environment.

## FOCUS ON TECHNOLOGY-ENABLED SERVICE DELIVERY TO LIBRARY USERS

Over the years, the National Library Board (NLB) continuously rolled out numerous digital services (self-service technologies) aimed at making its content accessible.

NLB's innovation was successful because it was both technological and non-technological. This was in line with academics' and consulting firms' findings that it was organizational strategy and innovation culture, not technology per se, that drove the success of digital transformation efforts. NLB used technological innovation not as an end goal but as a means to free up resources so that they could engage in other forms of innovation, mainly co-creation for service excellence and productivity with external parties.

Technologically enabled service innovations pioneered by NLB, such as book drops, self-checkout machines, and borrower enquiry machines, became standard features in new libraries. They exemplified a positive trend where innovation efforts by NLB were accompanied by the

gradual evolution of citizen engagement.

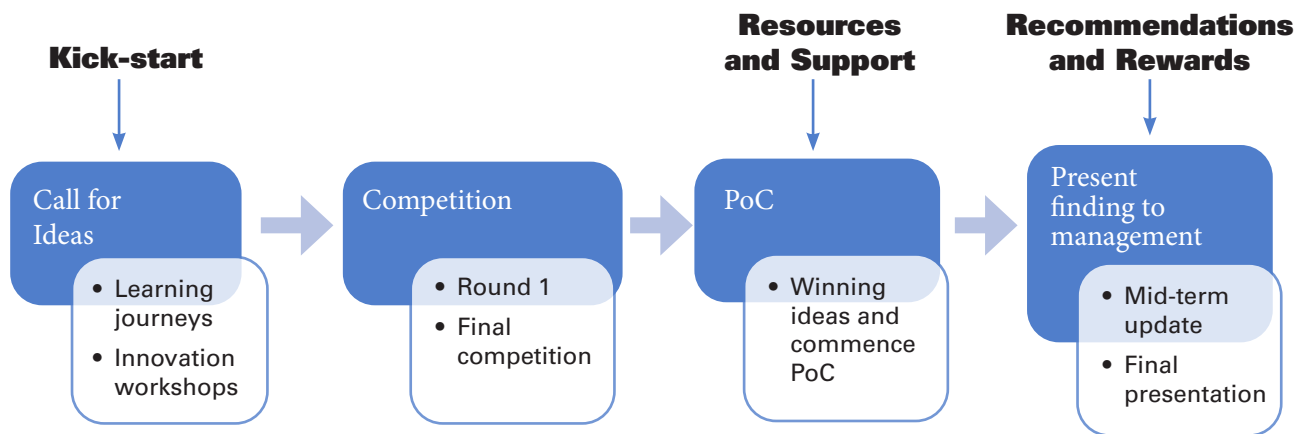
As an example of innovative service co-creation, the library@orchard won the prestigious President's Design Award for its outstanding interior design in 2015. Its space design was informed by the ideas and proposals contributed by Orchard Road "regulars" and other members of the public in collaboration with design thinking experts from Singapore Polytechnic (SP). The three development phases included (i) observing target users and understanding their needs and "pain points" via interviews, (ii) ideation based on the results of data collection efforts, and (iii) development of prototypes to obtain user reactions and to appreciate customer preferences. At the Pasir Ris Public Library, a new (volunteer-run) teen's mezzanine with comfortable multifunctional furniture and a doodle wall for self-expression and discussions was created for teenagers.

## CULTURE OF STAFF INVOLVEMENT AND INNOVATION

Future-proofing the libraries and expanding the nation's learning capacity with the aid of information resources provided a purpose for many organizational members and ultimately helped the National Library Board (NLB) to achieve its strategic objectives. All librarians were encouraged to build up relevant competencies and human capital alongside the transformation of the library aimed at reaching Level One certification from the Singapore Workforce Skills Qualifications in 6 months. Thus a culture of staff involvement was built from the organization's beginning.

While public organizations elsewhere were stereotyped as being bureaucratic, NLB gave its staff the autonomy and empowerment to voice their opinions and raise suggestions. The adoption of the Staff Suggestion Scheme served as a channel for staff across all levels to share their ideas to be evaluated by the heads of the divisions and then approved online. This was not a token exercise. For example, as early as in 1997, when the scheme was introduced, 60% of 2,239 suggestions received were implemented. This sent a strong signal to all levels of staff that contributions were taken seriously and that the organization was genuine about constant incremental improvements. Tools such as the BlackBox program (see *Exhibit 5*) ensured that the ideas and innovation potential of NLB's staff were fully exploited.





**Exhibit 5** NLB's BlackBox program

To sustain innovation efforts, NLB realized that it was key to invest in people. Librarians' competencies were developed over the years in line with changing customer expectations. The form in which knowledge was processed and interpreted evolved even if the core services of providing research and references services to the public remained. Traditional librarianship had to be further professionalized, moving beyond cataloguing and referencing to research, synthesize, and packaging of information. To aid in this upgrade, NLB signed a memorandum of understanding (MoU) with the Nanyang Technological University in 1998 to offer the Master of Science in Library Science degree to library staff. These formal academic qualifications helped librarians specialize in information and navigate the Information Age, serving readers all the same. Many more MoUs followed to facilitate knowledge sharing on technical systems and innovations with academics.

Other capabilities that were built for librarians included skills to develop specialized collections, including arts, multi-culture, and Singapore; the productization of information services to provide reference answers to the public on an online database, namely Singapore Infopedia; specialized information services in business information and customized information; cataloguing and indexing newspapers on the digital space through the Dublin Core standard; and cybrarian services for users to communicate remotely on the eLibraryHub.

Specialization in these roles helped NLB to increase the range of services delivered to customers as well as serve a wider segment. Knowledge across different areas also helped to expand the scope for innovation.

As we know from innovation studies, trying to make

innovation work with the same tight planning, budgeting, and reviews that are applied to existing businesses can create a "trap." One remedy is to add flexibility to planning and control systems; for example, by providing special funds for new opportunities. NLB did just that. To support the passage of ideas from initial planning to postimplementation review, various means and channels were instituted. The BlackBox program (held biennially) was spearheaded by the Technology and Innovation division (see *Exhibit 5*) and has helped to identify numerous potential innovative projects. Winning teams were provided with funds, mentors, and financial resources to conduct a 6-month proof-of-concept.

One of the projects spawned out of BlackBox was Quest, a trading card game aimed at encouraging young boys to read. Quest won the American Library Association Presidential Citation for Innovative International Projects in 2011. The continuity of the BlackBox program exemplifies NLB's strong innovation culture.

Another effective innovation management approach adopted by NLB was the involvement of staff in projects that featured cross-divisional teams. The formation of such work groups broke the functional silos and allowed staff from all levels to come together. Cross-functional project teams reduced hierarchy and bureaucracy, bringing together various domain experts to be involved as team members and manage and implement projects together. The re-opening of revamped libraries like the Pasir Ris Public Library in 2015 provided clear evidence of the benefits of cross-divisional collaboration between staff from the Public Library Service, Properties and Facilities Management division, and Technology and Information division to ensure that the library provides up-to-date services across all functions on time.

**Exhibit 6** Components and outcomes of the National Library Board's breakthrough innovations

Innovation Strategy Components	NLB's Innovation Strengths
Component: Citizen Engagement and Collaboration Through Co-Creation  <b>Outcome: Greater social engagement of NLB's stakeholders (e.g. volunteers)</b>	Co-creation and volunteer-delivered services multiplied impact and reach: <ul style="list-style-type: none"> <li>• library@orchard</li> <li>• library@chinatown</li> <li>• Pasir Ris Public Library</li> <li>• Citizen Archivist project aimed at greater public participation in the archival process</li> </ul>
Component: Making NLB Content Discoverable Through Digital Services  <b>Outcome: Effective harnessing of digital (e.g. self-service) technologies</b>	Digital services facilitated easy access to content on Singapore and NLB's eResources: <ul style="list-style-type: none"> <li>• NLB Mobile app</li> <li>• Revamp of Archives Online</li> <li>• Oral History Interviews Portal</li> <li>• OneSearch Portal</li> </ul>
Component: Buffering Front-Office Activities from the Back Office  <b>Outcome: Organizational efficiency gains through resource optimization</b>	Resources saved through technologies were channeled to higher value tasks: <ul style="list-style-type: none"> <li>• Auto-sorter system</li> <li>• Self-service reservation system</li> <li>• Shelf-reading robot</li> </ul>

## INNOVATION THROUGH CO-CREATION AND 3P (PEOPLE, PRIVATE, AND PUBLIC SECTORS) ENGAGEMENT

One of the first instances of public involvement with the National Library Board (NLB) beyond the traditional library usage was during the rollout of the Verging All Teens program in the Jurong Regional Library. It was the first library created for teens by teens, meant to inspire each other to read more about the creation of relevant library spaces. Thanks to youth's input, the Teens Library had unique features catered to this target group including music, décor, stage performances, and even a graffiti wall. This section of the library was publicly run by volunteers.

NLB's co-creation approach eventually expanded beyond the daily running of operations to the very conceptualization of libraries. This was particularly important for mall libraries, because they were set apart from the regional, neighborhood, and national libraries in terms of space, location, and curated collections. The library@esplanade became Singapore's first performing arts library. Taking in feedback from the arts community, it boasted an exhibition space and performing stage alongside a niche collection of books, screenplays, and music scores.

The success of this mall library led to the co-development of library@chinatown alongside a panel of experts on Chinese culture comprising educators, academics, and media experts. Opened in 2013, the library's main purpose was to promote Chinese art and culture. It was also a step-up from volunteer programs for all its day-to-day operations were fully run by volunteers. These volunteers not only addressed basic queries but also brainstormed engaging library programs for the public. Customer satisfaction, in fact, registered higher in these volunteer-run libraries; library@chinatown had the highest customer satisfaction rating, proving that NLB's careful design and planning over the years not only matched user behavior and expectations but gratified them even more as users were directly involved in the library's activities.

Co-creating with public and private organizations allowed NLB to participate in other projects beyond the library, combining its internal strengths with the business know-how of these organizations. In 2011, NLB led the Singapore Memory Project for the Singapore government, reaching out and partnering with other institutions, which included heritage agencies and research institutions, to kick-start a memory movement. Through their shared expertise, the partnership enabled the creation of a new wave of knowledge assets in a Library 2.0 environment. The term "Library 2.0" refers to the application of interactive and collaborative

(multimedia) web-based technologies to library services and collections. For example, the public could contribute their own perspectives in the form of videos, photographs, and web links to the platform, with NLB playing a key role in the curation and archiving of these assets.

The Citizen Archivist project, a crowd-sourcing portal launched in 2015, tapped on the public's knowledge and wisdom for its extensive collections of archival records. This encouraged more public participation in the archival process. Citizens' involvement in the description and transcription of archival records directly contributed to the greater accessibility of Singapore's intellectual memory in the form of archives.

Another example of 3P participation was the development of NewspaperSG, a digital archive of Singaporean and Malaysian newspapers published between 1831 and 2009. With the support of Singapore Press Holdings, the leading publisher in Singapore, NLB was granted permission to digitize *The Straits Times* from its first issue onwards. Once again, it was the fruitful partnership with different stakeholders that allowed NLB to broaden its range of services offered to the public, maintaining its commitment to customer-centricity.

## GOING FORWARD

The National Library Board's (NLB) strong staff culture provided a conducive environment for innovations to occur, supported by leadership, strategy, innovation culture, capacity building, formalized processes, information technology mastery, and 3P partnerships for co-creation. The adoption of both technological and non-technological innovations enabled NLB to engage stakeholders such as the public in unprecedented ways. Although innovations usually started internally within the organization, through suggestions from the staff seeking to improve customer delivery, these novel and value-creating ways of doing things eventually diffused outwards and had a far-reaching impact on the scope and depth of NLB's services.

With transformation as a continual process rather than an end goal, the question arises whether NLB can rely on its existing approach to continue to succeed in delivering cost-effective service excellence in an area of rapid technological advancements.

### Study Questions

1. What are the main transformation waves the National Library Board (NLB) has gone through?
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4. What was the role of technology and digital services in transforming NLB and improving the customer experience?
5. How did organizational strategy and culture drive NLB's digital transformation and innovation outcomes?
6. What else could NLB do to continue staying ahead as a "library for life" so as to achieve its visionary goals of "Readers for Life, Learning Communities, and a Knowledgeable Nation?"

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