

## MAKING THE INVISIBLE VISIBLE: DIGITAL COLLECTIONS AND CURATION AT THE NATIONAL UNIVERSITY OF SINGAPORE LIBRARIES

**Lee Cheng Ean**

*University Librarian*

*National University of Singapore (NUS) Libraries*

*Singapore*

*clbhead@nus.edu.sg*

### ABSTRACT

Special Collections at the National University of Singapore (NUS) Libraries were established in 2016 with the mission to digitally showcase the many rare and distinctive titles in the NUS Libraries that until now have remained hidden in its large store of materials. Our vision is to be the research hub for Southeast Asian resources. Therefore, we are particularly focusing on digitizing materials on Singapore and Southeast Asia, which include our Singapore-Malaysia Collection, Southeast Asian Chinese Collection, Rare Books Collection, and Private Papers Collection.

Digital Gems (<https://digitalgems.nus.edu.sg/>) is the result of our ongoing effort to showcase our unique and rare materials via open access. By putting these resources online for easy access, we hope researchers will use them in new ways to develop new ideas and projects in their various fields of study.

This paper will introduce our digitization program and selected collections in Digital Gems. It will highlight our accelerated efforts in digitizing historical sources on Southeast Asia as well as our latest collaborations with researchers and institutions in expanding our digital collections. Our active data sharing effort to local and international repositories to expose our digital collections to researchers will also be covered in this paper.

Curating and organizing digital content for easy access is more critical now than ever before. The COVID-19 restrictions have resulted in many researchers not having access to much needed resources. It accelerated our acquisitions programme and digitization projects to ensure that as many resources as possible are available 24 hours a day remotely.

### **Overview of the National University of Singapore (NUS)**

NUS was founded in 1905. We are a comprehensive university and is the oldest out of six universities in Singapore. NUS is a large university with 17 faculties and schools, 30 research institutes, and 42,000 students. NUS continues to “focus on talent and is dedicated to quality education, influential research, and visionary enterprise. The University is constantly shaping the future of education through education-innovation, bringing together integrative interdisciplinary studies. Interdisciplinarity is key to shaping education and producing graduates who will be well equipped for complex roles across diverse industries.

Set against the backdrop of NUS’ mission and aspirations, NUS Libraries has to remain relevant and proactive in the services we deliver. The history of NUS Libraries goes all

the way back to 1905 too, same as the University. We started off as a single small medical library. Today, NUS Libraries comprises eight libraries, the flagship Central Library being the largest, with seven smaller special libraries in close proximity to the faculties and schools. Complementing the physical libraries and services is a sizeable high quality digital library comprising both licensed resources and digitized content from our own collections. Library teams are function-based such as Collection & Research Services, Education Services & Learning Innovation, Library Administrative Services, and Library IT & Technical Services.

NUS Libraries is motivated to add value to the University through three key strategic thrusts:

1. To deliver streamlined and focused services for the digital generation,
2. To be the collaborative hub for experiential *phygital* learning and innovation, and
3. To grow knowledge and capabilities for future generations.

These three pillars, supported by 11 strategic action plans, work towards achieving five outcomes, leading to excellence and success for the NUS community. For the first outcome, we desire to facilitate student success, both academically and outside the classroom. Beyond that, we want to equip them with skills (e.g. creativity, curiosity, innovation and critical thinking) that will help shape them into successful citizens who are able to contribute positively back to society. Secondly, we want to assist our teaching staff to advance teaching excellence by partnering with them to deliver information, digital and media literacy programs for student success. Thirdly, we want to help our researchers increase their reach and the visibility of their research output, with the ultimate goal of increasing their research impact. Fourthly, the Library has the means to create value in the world through the digitization and widespread sharing of historically and culturally important rare artefacts. Not just bringing collections in, but also pushing collections out. This is what I will be focusing on. Finally, we want to build capabilities and constantly improve processes and services to ensure we deliver excellent services.

Why did we invest in curating and digitising collections? It is because we aspire to be a Southeast Asian Resource Hub to grow knowledge and capabilities for future generations. To be the Southeast Asian Resource Hub, we focus on acquiring Southeast Asian materials in print and digital format that support university-wide teaching, learning, and research. We scope the acquisitions to humanities and social science materials in the English, Chinese, Malay, and Indonesian languages. Likewise, we select titles from our rare Southeast Asian print collection for digitization.

We have been actively building the Singapore-Malaysia Collection (SMC) since the 1960s. The SMC has broad and in-depth coverage of the socioeconomic, geographical, historical, and political developments of Singapore, Malaysia, Brunei and ASEAN as an entity. Since the 1980s, we started actively soliciting Chinese overseas newspapers, publications from Chinese clan associations, schools, and religious institutions in Singapore, Malaysia, and Brunei for the Southeast Asian Chinese Collection. The SMC and the Southeast Asian Chinese collection, constitute our flagship collections which are in great demand by our students, academics, and researchers working on topics related to Singapore, Malaysia, and the Chinese in Southeast Asia.

In recent years, we accelerated efforts to digitise rare and distinctive sources, including primary sources from our own library, in order to unlock what was inaccessible in the past. We collaborated with other university departments, such as the Lee Kong Chian (LKC) Natural History Museum, Geography Department, Chinese Studies Department and Asia Research Institute, to identify relevant collections to digitize. In addition, we collaborated with individuals, such as our Emeritus Prof. Edwin Thumboo for the Edwin Thumboo Private Papers and Dr. Rosey Ma for the Wang Zengshan Private Papers. In collaboration with the LKC Natural History Museum, we opened up the Biodiversity Library of Southeast Asia or BLSEA. We are happy to see that BLSEA is accessed by researchers from all over the world including Europe.

Our digitization efforts have resulted in several collaborative digital humanities projects which require research materials and data from the Special Collections. We provide text which are run through optical character recognition (OCR); images which are digitized and properly described to stimulate interest in archival research and digital humanities projects. Some examples include: Historical Maps of Singapore, Singapore Biographical Database, Fifty Years of Japanese Performances in Singapore (1965 to 2015), Map of Origins: Chinese Clans in Singapore, and Singapore Historical GIS.

Our attempt at digitizing rare materials started in 2000 with Lat Pau, the first Chinese Daily in Singapore. But it was not until 2016, after a Special Collections team was set up, that the curation and digitization became more targeted. To speed up the process, we bought a manual scanner in 2016 and an automatic robotic scanner in 2018. It was a worthwhile investment as we can control the process, instead of relying completely on external vendors. We could also hire student assistants for the digitization process. As at today, we have digitized close to 700,000 pages of distinctive collections.

The digitization workflow, beginning with the selection of items and moving on to digitization, quality checks, creating metadata for the works, and uploading them to Digital Gems, is a tedious process. The critical steps which will enable the records to be discoverable include pre-generated item-level metadata and uploading of full descriptive metadata and images to Digital Gems. We use Dublin Core metadata to describe our digitized resources to facilitate the discovery of our unique special collections. We ensure that the metadata is created and uploaded within five days after the item is digitized.

In October 2019, we launched our Discovery Platform called Digital Gems to host all open access Southeast Asian resources and other research collections. It was launched after six months of development work. Since then, we have improved the efficiency of the platform with two enhancements. This is primarily because we wanted a discovery platform that was easy to use. More than 210,000 page views were recorded. In 2020, 3,000 visitor sessions to the Digital Gems were logged. The Special Collections team also created a video on YouTube to promote the collections available in Digital Gems.

To date, we have added 23 collections covering various subjects and formats in Digital Gems. The subject coverage includes natural history, history and culture, language and literature, medicine and health, architecture, law, and religion. This virtual library provides access to a selection of rare books, manuscripts, private collections, journals, newspapers,

drawings, pamphlets, photographs, maps, and audio visual materials of cultural and historical value.

By end of 2021, we hope to digitize one million pages of historical sources on Southeast Asia. NUS Libraries has a strong collection of Southeast Asian historical documents which contains a wealth of primary information available in microform, making it an excellent resource for multi-disciplinary research and historical education in NUS and beyond. We started two digitization projects to digitize the microform contents: (1) The 95 Historical Newspapers of Southeast Asia published in English, Jawi, and Chinese language newspapers in microfilms amounting to 840,000 pages, and (2) 900 volumes of historical sources on Southeast Asia in English, Malay, and Chinese language in microfilms totalling 620,000 frames) These two projects were outsourced to a vendor as we do not have the equipment and in-house expertise.

We partner with our faculty and researchers in grant applications, bringing the expertise of our Special Collections team and the digital collections we have. The most recent one is a two-year project titled “Linking the Digital Humanities to Biodiversity History in Singapore and Southeast Asia:”. This project was awarded funding of S\$782,000 by the Singapore Social Science Research Council to researchers from Yale-NUS College and Asia Research Institute. The multi-stakeholders’ project is also supported by NUS’ LKC Natural History Museum, NUS Libraries, the Yale-NUS College Library, Department of Geography and national agencies such as National Parks, National Library Board, and outside Singapore, we have the Oxford University Museum of Natural History and the University of the Philippines Diliman. Our key role in this project is to manage the digitization, create descriptive metadata, and host the collections online.

Another project that we hope to be involved in is the Chinese Popular Cultures in Singapore and Malaya by a faculty from the of Chinese Studies Department (if the grant application is successful).

In another project with the LKC Natural History Museum on repatriation of Singapore biodiversity specimens from museums and archives in the US, UK, and Europe, the Library will identify and procure primary sources related to these specimens. This is an opportunity to build networks for future collaborations of this nature. This project will complement the National Library Board of Singapore’s initiative to build the heritage collection.

Another project, also with the LKC Natural History Museum, is the creation of metadata for more than 110,000 slides, negatives, and prints which will be digitized. These are historical specimens of Singapore collected over more than 80 years through field trips by museum researchers and curators. The digitized images of the specimen collection will be added to Digital Gems with full descriptive metadata.

In our collaboration with the National Library Board of Singapore, we contributed 140,000 metadata entries from Digital Gems to OneSearch to increase the visibility and usage of our digitized materials locally. OneSearch is an online search portal that helps users find information across a variety of resources from the National Library Board (NLB) as well as other institutions such as National Heritage Board, National Gallery (Singapore), and NUS Libraries.

To increase partnership internationally, we contributed to several open repositories, including the following:

1. Biodiversity Heritage Library (BHL), the world's largest open access digital library for biodiversity literature and archives. BHL operates as a worldwide consortium libraries working together to digitize and make collections open access as part of a global "biodiversity community." NUS Libraries contributed about 4,000 metadata entries to BHL through the National Library Board which is the national node for Singapore.
2. The Pacific Rim Library or PRL developed and hosted by UCLA on behalf of the Pacific Rim Research Libraries Alliance. PRL was created to improve global access to digital resources with strong research and teaching value for its member communities and beyond. It provides access to metadata records of unique and historically important artifacts – including books, audio visual materials, artworks, and more. Each member curates their own unique collections for PRL. NUS Libraries has contributed more than 7,000 metadata entries to PRL so far.

We will continue to make a mark in the world through our curation and digitization of distinctive collections. We will digitize new collections and raise awareness. Such collections include specific area of studies, such as (1) Chinese Popular Culture in Post-War Singapore and Malaysia, (2) Malay Culture, History and Literature, (3) Japanese Occupation of Singapore and Malaya, and (4) NUS theses submitted from 1947-1980 as well as NUS archival materials. We will continue to explore and create stronger links with academic programs, incorporating our unique and distinctive materials in academic course designs.

We will explore emerging technologies and work towards integrating text and data mining tools to foster creation of new knowledge and research. Finally, we will invest in an off the shelf digital preservation platform to preserve all digital collections of the NUS Libraries and University Archives. In conclusion, allow me to state that curation and digitization of special collections requires resources and collaborations with many stakeholders. Scope what you want to achieve and plan the growth for each year. Work closely with faculty and researchers to secure funding for the projects. One person or one department cannot do this alone.