



NANYANG
TECHNOLOGICAL
UNIVERSITY
SINGAPORE

Welcome to **NTU Library**

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Office of Information, Knowledge and Library Services



Outline

- About NTU Library
- Redefining Library Spaces: From Innovation to Transformation
- Operational Transformation
- Q & A

ABOUT NTU LIBRARY

About NTU



NTU Singapore

<https://www.ntu.edu.sg/about-us/discover-ntu>

35,000 students
7,900 faculty, researchers

A research-intensive public university, **Nanyang Technological University, Singapore (NTU Singapore)** harnesses the power of digital technology and tech-enabled solutions to support better learning and living experiences, the discovery of new knowledge, and the sustainability of resources.



About NTU Library



Lee Wee Nam Library
(Engineering & Science)



Business Library



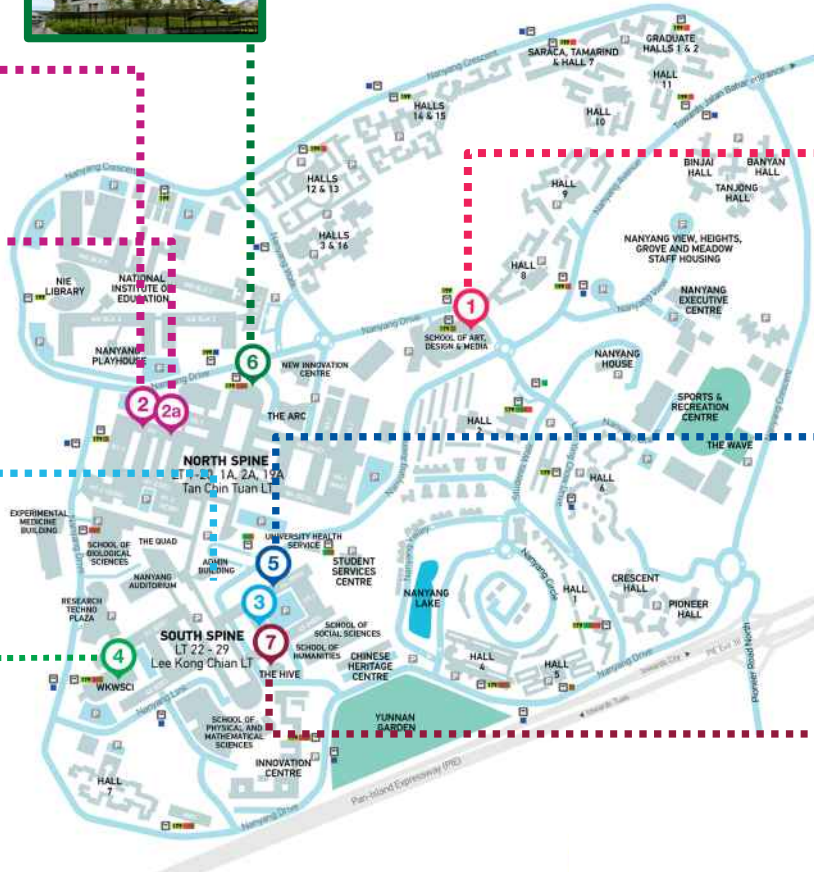
Library Instructional
Commons



Chinese Library



Communication &
Information Library



Art, Design &
Media Library



Humanities & Social
Sciences Library



Library Outpost

NTU Library
comprises 7 libraries in the
Yunnan Garden campus

Area : 15,229 m²

Seats : 2,070

Other Libraries



NIE Library



Sim Hoay Cheok –
Sim Foundation Library
@ Novena Campus



Wang Gungwu Library

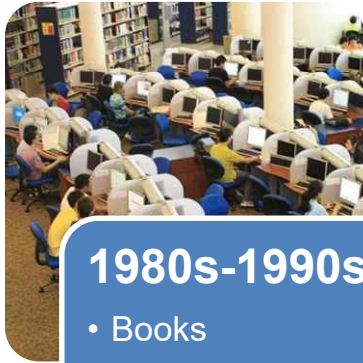


RSIS Library



REDEFINING LIBRARY SPACES: FROM INNOVATION TO TRANSFORMATION

Evolution of Library Spaces



1980s-1990s

- Books
- PC terminals
- Individual seating



2000s-2010s

- Fewer books
- Collaboration spaces
- Exhibition spaces



2020s

- Even fewer books
- Learning spaces
- Wellbeing spaces

Transform physical spaces to meet user needs and infuse with inspirational avenues to trigger fresh perspectives and experiences.

Spaces @ NTU Library



Open Seating spaces

Before



The transformation



Collaboration spaces

Before



The transformation



Transform physical spaces to meet user needs and infuse with inspirational avenues to trigger fresh perspectives and experiences.

Spaces @ NTU Library



Exhibition Spaces



Transform physical spaces to meet user needs and infuse with inspirational avenues to trigger fresh perspectives and experiences.

Spaces @ NTU Library



Wellbeing Spaces and Initiatives



SPACE TRANSFORMATION AT NTU LIBRARY: LIBER @ ADML



Liber@ADML

Laboratory for Interdisciplinary Bookish and Experimental Research at Art, Design & Media Library

- Revamp of library done in collaboration with **School of Art, Design & Media (ADM)** and with direct inputs from the Chair and the Associate Chair (Research)
- New features included:
 - The Playground - configurable collaboration space with wellbeing features such as circadian lighting
 - Flexible showcases - Interactive exhibition space and versatile window displays to highlight the innovative work of the ADM community.
 - Launch of Temi the Smart Library Assistant for service innovation and automation



Temi

The Smart Library Assistant

An unmanned library concierge service deployed for the first time in the revamped **Laboratory for Interdisciplinary Bookish and Experimental Research at the Art, Design and Media Library (Liber@ADML)**.

Enhancing user experience

- Configured with a knowledgebase to answer FAQs
- Guide users as a wayfinding tool around the library
- Remote patrolling
- Virtually connect users to librarians
- Give tours of the library spaces

Resourcefulness and upskilling

- Steer NTU Library's service delivery model towards self service
- Aim to reduce physical presence of staff at the deployed library
- Enable staff upskilling through exploring new technologies



OPERATIONS TRANSFORMATION AT NTU LIBRARY



Operations Transformation

- Due to manpower issues, more libraries have to become self-service
- Increasing online interactions with users requires dedicated team for response
- Improve the overall library user experience

Manpower issues

- With 7 libraries, we needed 17 library staff to man all libraries but we only had 15 staff
- Needed full-scale ops transformation to convert 4 out of 7 libraries into self-service libraries. Pilot of 1st unmanned library with ADML.
- With this transformation, we only needed 11 staff for counter duties
 - Redeployed 2 staff to RSC, one other staff to another library team

Self-Service Libraries

- 4 out of 7 libraries are now self-service during office hours
- Self-borrow books, return, book pick-up, chat or videocall with library staff



Temi deployed in **NTU Art, Design & Media Library (ADML)**

- answering frequently asked questions,
- video calling a NTU Librarian,
- conduct library tours
- remote patrolling



Before

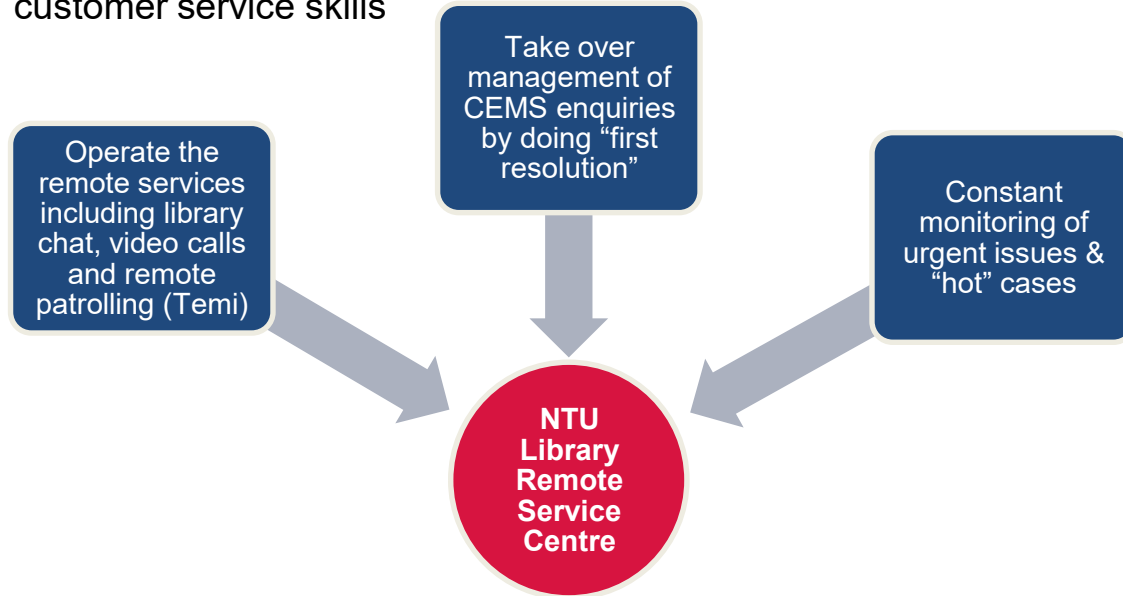


After

- Transformation of **NTU Humanities & Social Sciences Library (HSSL)** Service Desk area into Self-Service area
- Addition of more study spaces

NTU Library Remote Service Centre (RSC)

- Launched on 30 October 2023, led by Soma (Lead, OIKLS Service Innovation & Excellence) with 2 dedicated staff
- Staff identified from pool of counter staff
 - upskilling them with on-the-job trainings, process knowledge of other library operations and customer service skills

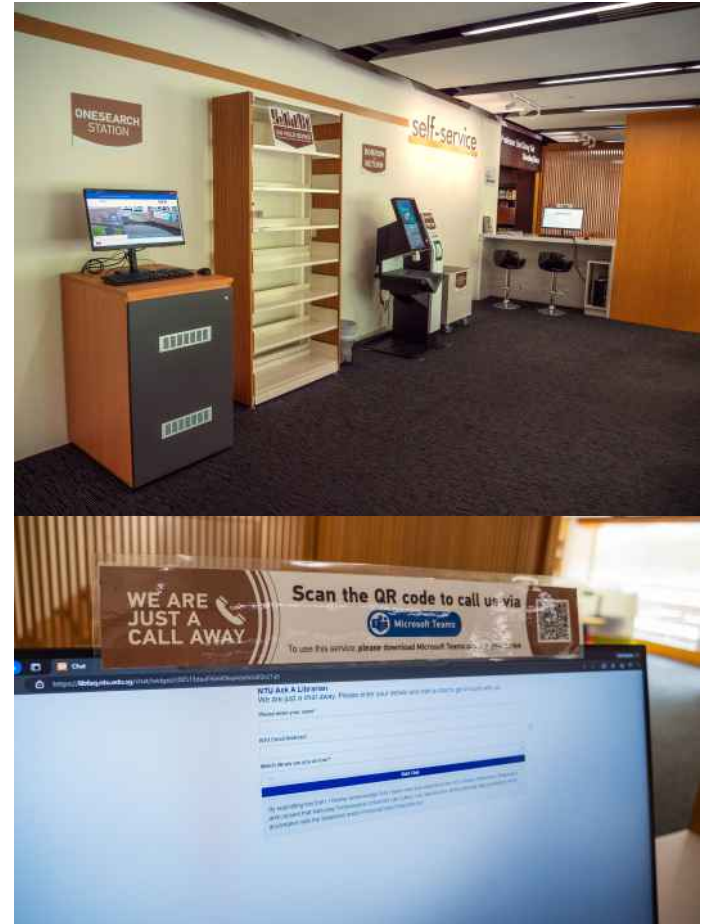


KPIs

- 3 working days or less since Asked Date
- 3 interactions or less per ticket
- Average feedback rating of 4.5 out of 5

RSC Channels

- Centralized Enquiry Management System (CEMS)
- NTU LibChat (only at CMIL & HSSL)
- MS Teams for audio/video calls
- Temi robot



Centralized Enquiry Management System (CEMS)

- Launched in January 2020 using Springshare's LibAnswers platform
- Over **6000 enquiries** every year
- Staff were expected to claim enquiries with no overall owner

Issues:

- Unanswered enquiries
- Non-standardized level of response to users
- No centralized point of escalation and service recovery
- Frequent repetitions of basic enquiries are taking up the time of the specialists which can be used to answer more complex enquiries
- No coordination among teams for effective resolution

Impact of NTU Library Remote Service Centre

Since January 2024, RSC has...



Deployed and managed **communication channels for three self-service libraries** using existing resources (no purchase of new platforms)



Answered 3799 ticket enquiries
(53% of total ticket enquiries by NTU Library)



Answered 592 tickets typically answered by other teams, from start to end
(Freeing up specialists from other teams to focus on other work areas)



Upheld consistent and high service standards, coordinated across all library teams, leading to a **64% decrease in cases requiring service recovery** compared to 2023

All figures up till 30 June 2025

NTU Admin Awards 2024 – Trailblazer

NTU Library Remote Service Centre



Awarded on 26 September 2024





<https://www.youtube.com/watch?v=QfurJhMUfe8&t=2s>

Appeal of Temi

- Service-oriented instead of task-oriented
- Cost (a one-time charge instead of a rental)
- Responsive support team
- Backend system is simple and easy to understand, plenty of functionality without additional programming



What we have learned so far

- Hands-on experience is very important in understanding how to work around the out-of-the-box controls
- Manual, remote control is difficult to control
- Moving furniture/reflective surfaces will cause the robot to malfunction
- Temi always needs constant internet connection

DEMO OF TEMI

THANK YOU

