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7-2024

"Digital-first libraries" Developing and managing digital platforms and services in SMU Libraries

Salihin MOHAMMED ALI

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"Digital-First Libraries"

Developing & managing digital platforms & services in SMU Libraries

Salihin Mohammed Ali Senior Manager, Technology & Innovation Singapore Management University (SMU)

Agenda

- SMU Background
- Digital Transformation Areas
- Platform Management
- Trends & Challenges



Background



Singapore Management University (SMU)

Established in 2000, SMU's mission is to generate **leading-edge research with global impact** and to produce **broad-based**, **creative**, **and entrepreneurial leaders** for the knowledgebased economy.

SMU's education is known for its highly interactive, collaborative, and project-based approach to learning as well as its **wide range** of undergraduate and postgraduate programmes as well as interdisciplinary combinations Home to over 12,000 students across undergraduate, postgraduate professional and postgraduate research programmes, SMU comprises eight schools:

- Lee Kong Chian School of Business
- School of Accountancy
- School of Economics
- School of Social Sciences
- Yong Pung How School of Law
- School of Computing and Information Systems
- College of Integrative Studies
- College of Graduate Research Studies



SMU Libraries – Li Ka Shing Library





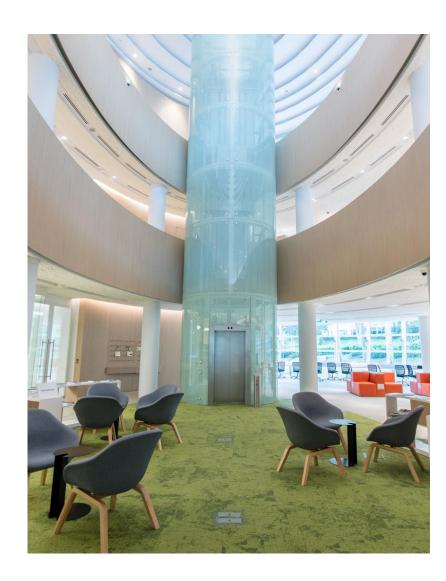
SMU Libraries – Kwa Geok Choo Law Library





Quick Facts

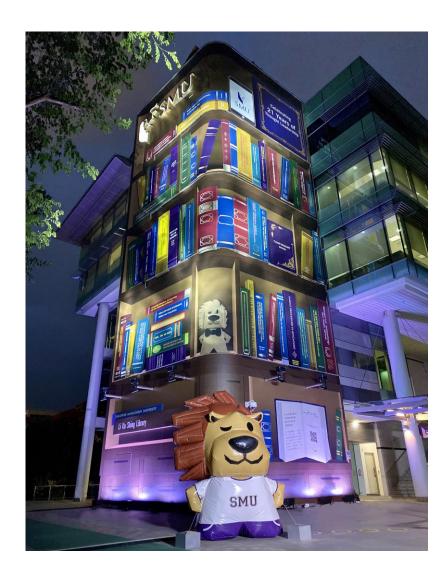
- Nearly 1 mil visitors in 2023
- Open 96 hours per week during term time
- Learning Commons 24/7 hrs
- 2,300 seats and 10,700 sqm across 2 libraries
- Physical and virtual learning environments and services
 - Learning Labs
 - Project Rooms
 - Investment and Data Studio
- 38 staff 22 professional librarians





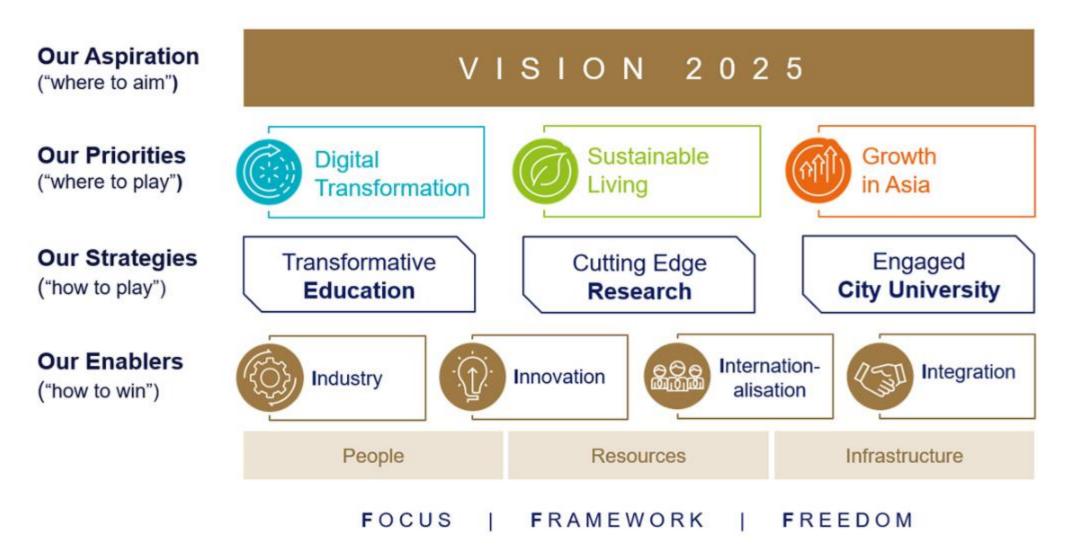
Quick Facts

- Over 550,000 books (Over 480,000 e-books)
- 85,000+ electronic journals
- 170+ electronic databases
- Access to 34,000+ titles of streaming media
 - <u>SMU Libraires Collection Policy</u>
 - "e-preferred"
 - "just-in-time"
- Over 8 million downloads from InK
 - <u>SMU Libraries Open Access Policy</u>





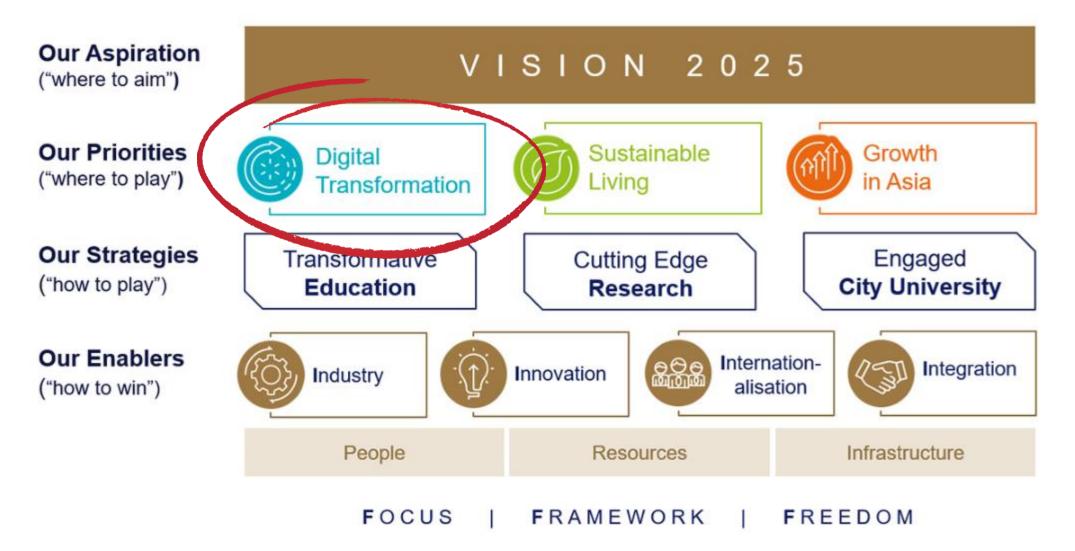
SMU 2025: GROWING IMPACT, CULTIVATING CHANGE



Key Areas



SMU 2025: GROWING IMPACT, CULTIVATING CHANGE





SMU Digital Transformation Framework

University-wide committee led by CIO and Vice-Provost (Education)

- Digital Learning
- Digitalised Research Enablement
- Sustainable Workforce
- Smart Campus
- User Experience





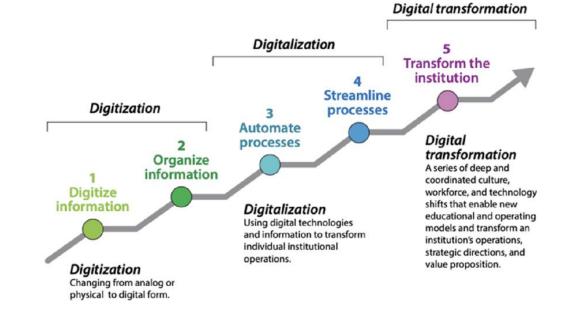
Key Concepts - Digitization, Digitalization & Digital Transformation

Digitization	Digitalization	Digital Transformation
Transforming non-digital content into a form computers can process	Transforming human-based and document-bound processes into systems that can be computer-operated	Changing business practices and stategies to leverage digital efficiencies
"Digital-first documents and content"	"Digital-first processes and systems"	"Digital-first libraries"
Goal: Take paper and other non-computer understandable documents and transform them into a format that computers can process	Goal: Extract more value from existing digital-format information with additional processing, while also transforming human-based processes into computer-operated ones	Goal: Change the way the busines opticities by taking advantage of digital-first processes and information to achieve significant efficiencies and enhanced value through operational change
"Digitize these documents" Aka "Digital capture"	"Digitalize these processes"	"Digitally transform this business"

Source: Cognilytica

Digitization vs. Digitalization vs. Digital Transformation COGNILYTICA

https://www.forbes.com/sites/cognitiveworld/2020/06/23/ai-runs-into-the-document-and-people-barrier-digitization-and-digitalization/?sh=1f8d2c325794



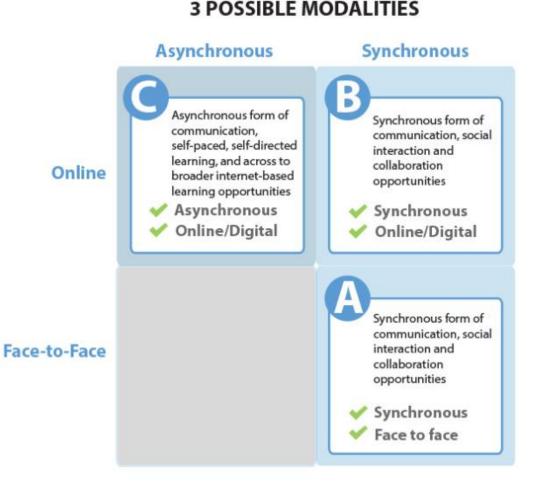
Katuu, Shadrack. (2022). Management of public sector records in the digital age. 10.13140/RG.2.2.25539.48163.



SMU Digital Learning Strategy – Blended Learning

Research studies have found that Blended Learning approaches help students:

- Develop self-directed learning strategies as they go through course materials at their own pace
- Review and reflect
- Be better prepared for class to achieve intended learning outcomes.





Bite-Sized Library Workshops



SMU librarians and other academic offices conduct workshops about research skills, database searching, working with data, writing persuasively and presenting confidently, holistic development tips and many other topics.

- Python 101
- Data Analysis with R
- Literature Review Tools
- Research Data Management
- Generative AI Powered Search Engines



Top 10 Most Popular Workshops

No.	Workshop Title	Attendance (per session)
1	Python 101: The Basics (online & in-person)	51
2	Researching with Google & Wikipedia (online & in-person)	47
3	Data Extraction from WRDS with Python Programming (online)	40
4	[New] What Makes a Good Infographic? (online)	36
5	Arguing Your Case (in-person)	30
6	[New] Scholarly Literature Review I - A Beginner's Guide (hybrid)	28
7	Python 101: Tinkering with Pandas' DataFrame (online & in-person)	27
8	[New] Python 101: Visualise Your Data in Python (online)	27
9	R Ep.2: Doing Data Science with R: Tidyverse methods (in-person)	25
10	[New] Storytelling through AR by The MeshMinds Foundation (in-person)	24



Online Learning Platforms





SMU Libraries provides students, faculty and staff access to self-paced online learning platforms for professional development that cover topics such as:

- Business
- Technology
- Design & Creative
- Software development
- Leadership & Management



Technology-Enabled Learning Spaces

The University deploys appropriate teaching and learning technology in the seminar rooms, classrooms and discussion rooms. SMU Libraries has similar arrangement in Learning Labs, Project Rooms and other specialised learning spaces

- High laptop ownership among students
- Hybrid and flexible classrooms
- Self-service and instructor/learnercentric





Live Occupancy Counter

Everything ~	Search for books, an	icles, databases a	and more	C		MONDAY, MARCH	Next Day 25, 2024
Shortcuts:			th 4	PAS.	R. CY	Li Ka Shing Library	8:00am – 11:59pm
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			PILO			Kwa Geok Choo Law Library	8:00am – 11:59pm
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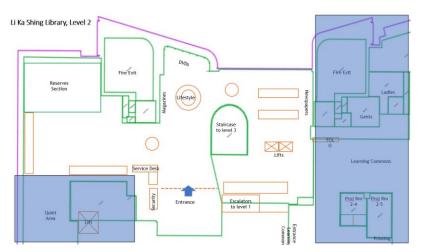
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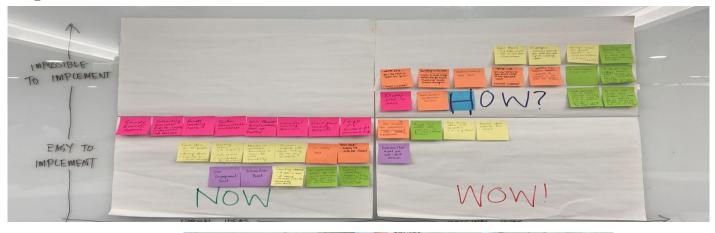
Kwa Geok Choo Law Library (L3) Kwa Geok Choo Law Library (L4) Kwa Geok Choo Law Library (L5)

Kwa Geok Choo Law Library Learning Commons



User-Centric Service Development



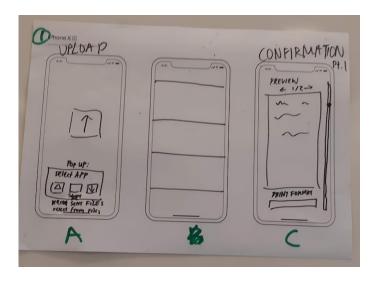


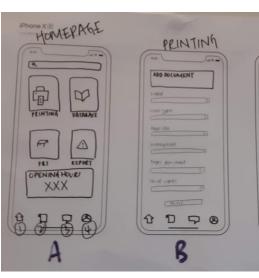






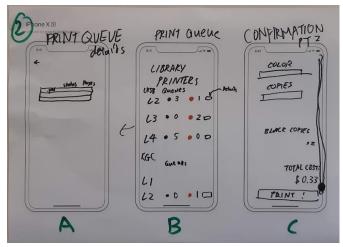
User-Centric Service Development

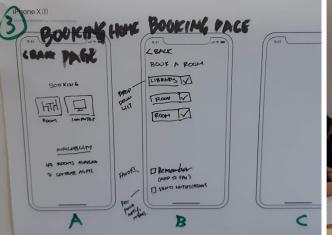
















Platform Management

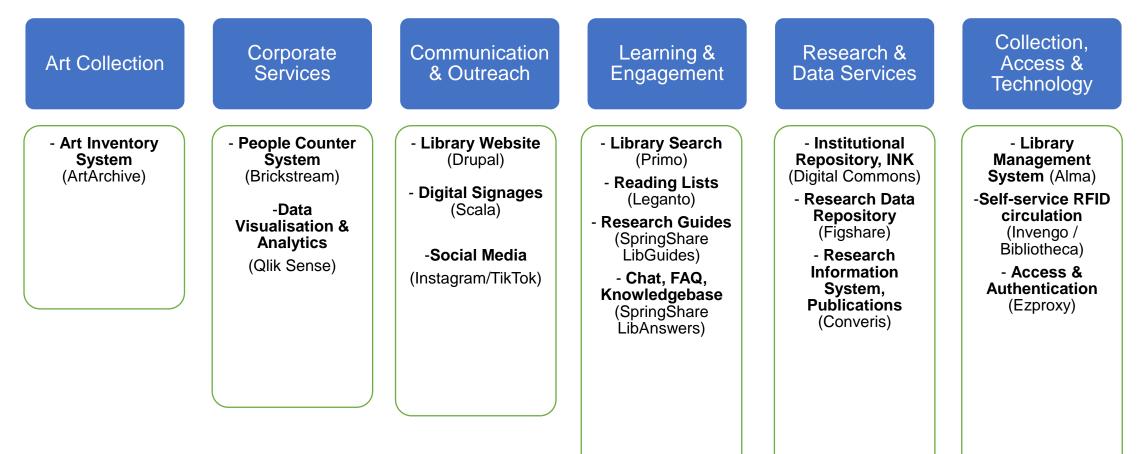


Library Systems & Platforms



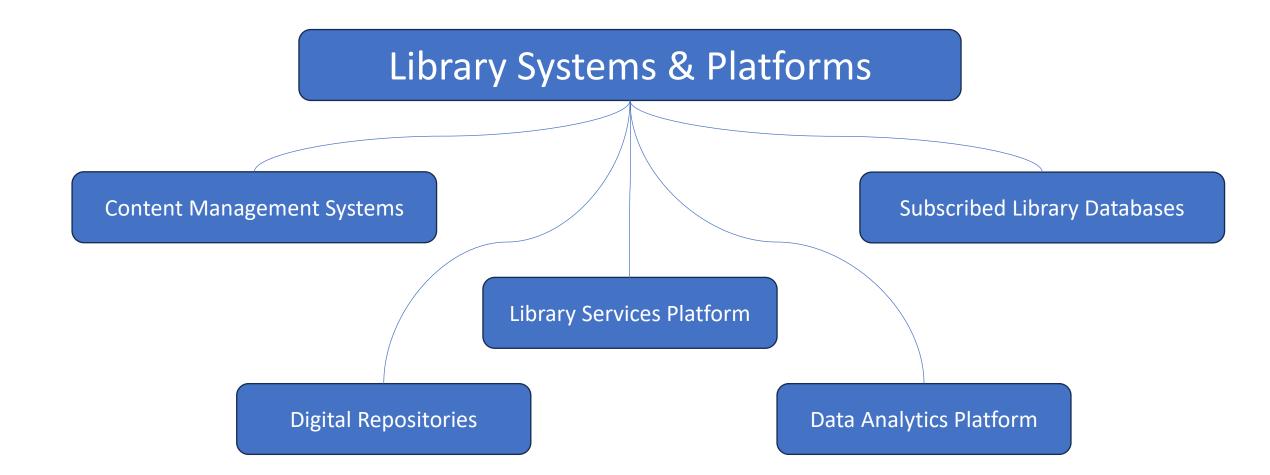


Different "functions" of platforms





Different "classes" of platforms





"Library Services Platforms take advantage of cloud computing & Web technologies to provide capabilities to manage physical, digital & electronic materials in a single unified system."



Library Services Platform

Functional Characteristics

Management of Electronic and Print Formats of Materials

Replacement of Multiple Incumbent Products

Extensive Metadata Management

Multiple Procurement Workflows

Knowledge Bases

Collection / Data Analytics

Conceptual Organization

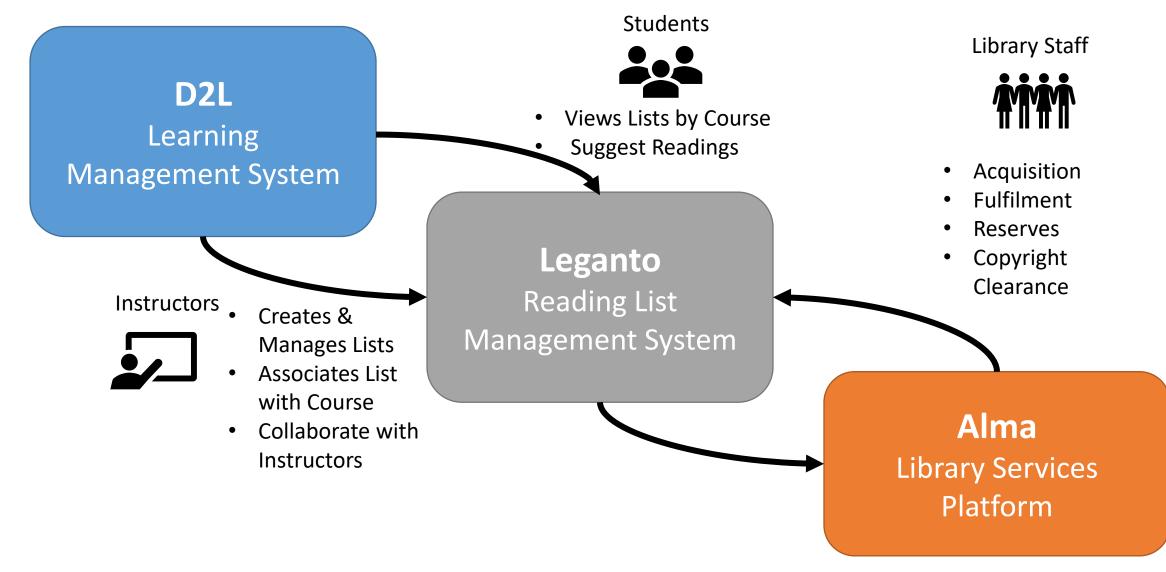
Technical Characteristics

- Beyond Client/Server Computing
- Web-Based Interfaces
- Multi-Tenant Platforms
- Services-Oriented Architecture
- APIs Exposed for Extensibility & Interoperability

[^] Marshall Breeding, "Library Services Platforms: A Maturing Genre of Products," *Library Technology Reports* 51, no. 4 (May/June 2015), <u>https://journals.ala.org/ltr/issue/view/509</u>.



Course Reading List Services





Business Process Automation

Using low-code technologies to interact with LSP APIs to create and automate workflows:

- New library membership records
- Updating bibliographic records
- Payment integration
- Course reading list integration

Microsoft Power Platform The world's most complete set of integrated, low-code development tools Power BI Power Apps Power Virtual Agents Power Automate for for for for data exploration, web and mobile process customizing application or workflow analytics and **Microsoft Copilots** development reporting automation or building your own copilot



SMU Libraries / Research Guides / A-Z Databases

A-Z Databases

Find the best library databases for your research.

	All Subjects ~	Search for Databases Go	
	Accounting (41) API (33) Business (50)	Popular Databases	
All	Career Development (2) Citation Analysis (7)	M N O P Q R S T U V W X Y Z # The most frequently-used databases	
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Use th	Education (7)	applied economics and law. It incorporates titles from ProQuest Asian Travel, and other features. News Archives are available from 1851.	
Busine (Easte	Finance (40) General (19)	bn Source databases. It includes trade publications as well as Wall Street Journal	
_	Health Care and Medicine (1)	PsycInfo Popular This database indexes psychology and behavioral sciences	<
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videos	Law (51)	tudies, General sciences, Geography, Law, Mathematics, Music, Pharmaceutical more	
science	Management (6)	, Women's studies and Zoology. It features PDF content from over 10,000 active full-text	
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		Statistics portal covering a wide variety of topics, drawn from	

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Humanities E-Book is a digital collection of over 1,700 full-text high-quality titles which are fully searchable. Titles focus on the Humanities, comparative and world studies, history, philosophy, political science, area studies on Asia, Southeast Asia, Europe, Middle East, United States of America. The years of publication range from 1880s to present. The collection is offered by the American Council of Learned Societies in collaboration with other learned societies and publishers.

Statistics portal covering a wide variety of topics, drawn from private and public sources of information. It contains dossiers (special theme insights), forecasts and industry reports. 170 industry sectors are covered, with additional focus on the digital market and economy. Also included are infographics, reports and results of studies from market research institutions.

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WARC 🗷 Popular

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WARC is a Marketing and Communications database providing



Self-help Research Guides & FAQs

ALL GUIDES BY GROUP BY SUBJECT BY TYPE BY OWNER Browzne @ Search Search Search Copyright Advisory @ Dissertation / Thesis Research and Writing @ Showing 13 Subjects Search Search Search Brow do luse APA Citation Systems (GIS) @ Accounting Search Search Higher Education News @ Art Search Search Image and Video Resources @ Business Station / Thesis Research and Writing @ Image and Video Resources @ Computing and Information Systems Search Search Economics Statistics Statistics Statistics Statistics Statistics & Statist								- Alumni Research Navigator 🚯
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Databases A-to-Z

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A-Z Databases

Find the best library databases for your research.

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	Citation Analysis (7)		The most frequently-used databases
189	Company Data (20)		New York Times 🖉 🛛 Popular 😪 🥰
Α	Computing and Information Systems (17 Country Data (14)		One-time registration is required using your SMU email address. After you have successfully created your account, you can access the
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WARC 🗷 🛛 Popular

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Ask Library

WARC is a Marketing and Communications database providing



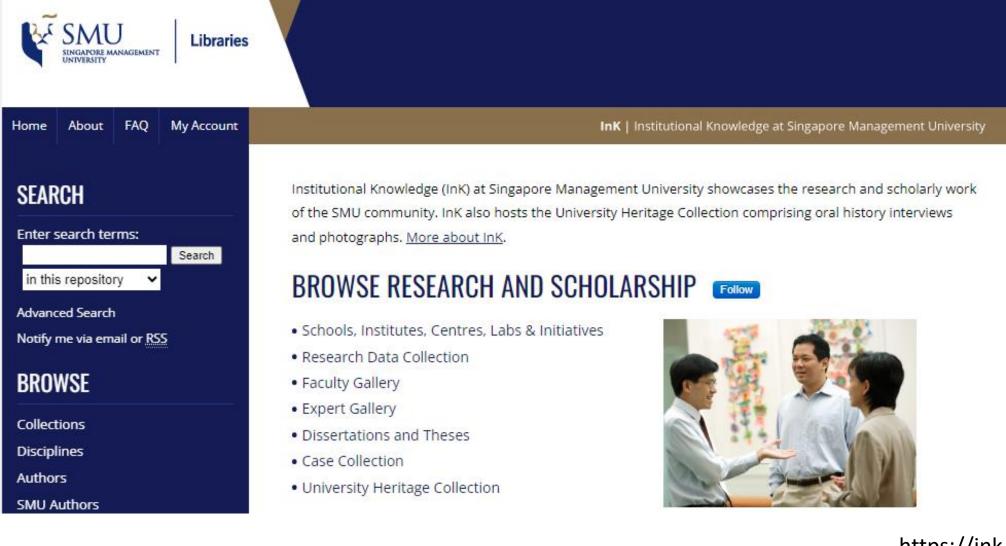
Live Chat Service

The library chat service is manned by librarians for students seeking help in the following areas:

- Difficulties in accessing a resource
- Finding sources
- General information
- Quick answers

⊳	Ask Library
lsk L	Your name?*
Ask Library	
2	Your SMU email address?
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	Start Chat
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Institutional Knowledge (Ink) Publication Repository



https://ink.library.smu.edu.sg/



Research Data Repository



	VIDEO DEMO
COLLECTION: 2023 Generate Your L(AI)brary Hackathon Posted on 2023-09-22 SMU Libraries	Barbielat: Codes and slides for Generate Your L(AI)brary Hackathon Software posted on 2023-09-22 Jules ROBINS ~
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Data from: Human capital effects in the job search process for new labor market entrants:... Dataset posted on 2023-09-20 Jomel Wei Xuan NG ~



ACKS: Codes and slides for Generate Your L(AI)brary Hackathon Software posted on 2023-09-19 Arjun GUPTA ~ librarybuddies: Codes and slides for Generate Your L(AI)brary Hackathon (2nd pri...

Software posted on 2023-09-15

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Meet your librarybuddy

Unleashing the Inner bookworm with Smoobot

mummypokopants

mummypokopants: Codes and

slides for Generate Your L(AI)brary Hackathon

Software posted on 2023-09-22

Keng Boon ANG 🗸



sort by: Posted date

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Go Large or Go Home: Codes for Generate Your L(AI)brary Hackathon Software posted on 2023-09-22 Jing Shen TAI ~

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LibAI: Codes and slides for Generate Your L(AI)brary

Software posted on 2023-09-11

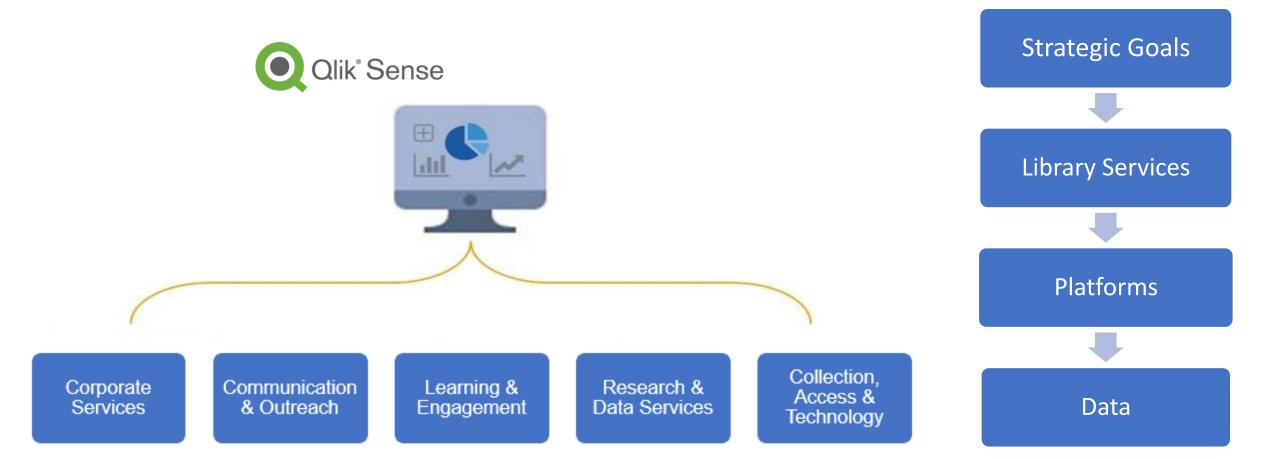
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Hackathon

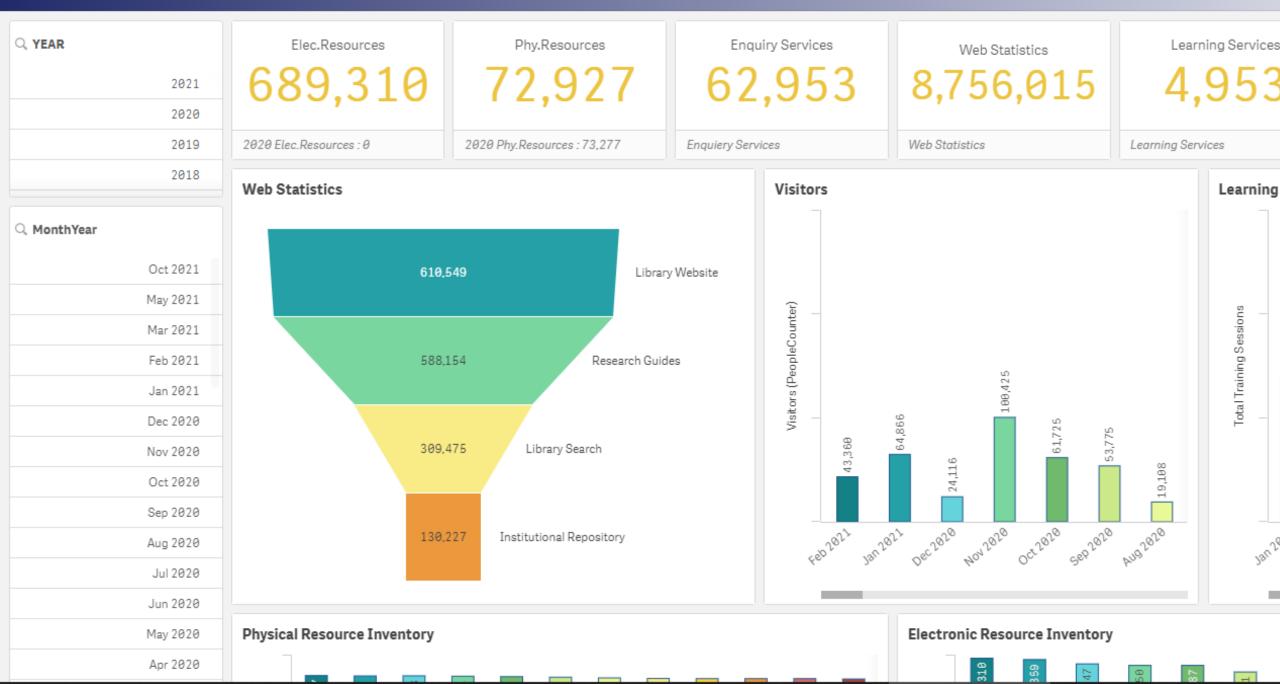
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Data Analytics Platform



Summary

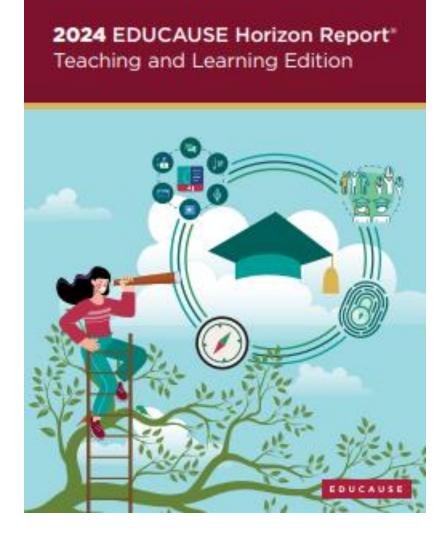


Trends & Challenges



Technological & AI Trends

- Digital Divide Persists
- Learning & Data Analytics
- Cybersecurity & Privacy Concerns
- Al is changing the way we communicate
- AI tools have growing potential to reshape pedagogy and student experiences
- Al is increasingly having an impact on the economy and workforce



https://library.educause.edu/resources/2024/5/2024-educause-horizon-report-teaching-and-learning-edition



Cybersecurity



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(⊠)

¹² Cyberattacks on Higher Ed Rose Dramatically Last Year, F Report Shows

The Malwarebytes annual threat report calls 2023 "the worst ransomware year on record" after attacks spike by 70 percent.

by Andy Viano 💥

Andy Viano is a journalist and editor at EdTech: Focus on Higher Education.

► LISTEN 03:23

Higher education institutions were once again inundated by cyberattacks in 2023, according to a report from Malwarebytes, which called it "the worst ransomware year on record" for the education sector.

💼 InformationToday

Magazines > Computers in Libraries > March 2024

0 Back i Index i Forward D

THE SYSTEMS LIBRARIAN Libraries Under Cyberattack by Marshall Breeding

SUBSCRIBE NOW!



Vol. 44 No. 2 — March 2024

The last year or so has brought incredible challenges to the digital infrastructure of some high-profile libraries. The recent wave of cyberattacks targeting one of the world's most prestigious and well-resourced libraries brings a sobering reminder of the dangers lurking for libraries in this digital age. Libraries of all types and sizes must be vigilant and prepared for any possible security breach.

The Worst-Case Scenario

The attacks against the BL and the TPL must be taken as a wake-up call for all libraries to redouble their efforts to protect their technical systems.

The recent attack experienced by the British Library (BL) approaches what might be considered a worst-case scenario. The incident was discovered on Oct. 28, 2023, as technical systems supporting the library services began collapsing. Practically all parts of the BL's technology infrastructure were impacted, including the ILS, the catalog, the many

https://www.infotoday.com/cilmag/mar24/Breeding--Libraries-Under-Cyberattack.shtml

https://edtechmagazine.com/higher/article/2024/03/cyberattacks-higher-ed-rose-dramatically-last-year-report-shows

AI in Libraries

- AI and Digital Literacy
- Al powered search and research tools
 - SciSpace
 - Elicit
 - Scite Assistant
- Improvements in selection, acquisition, cataloguing powered by AI
- Personalised user services
- Chatbots and virtual assistants
- Ethics and Responsibility

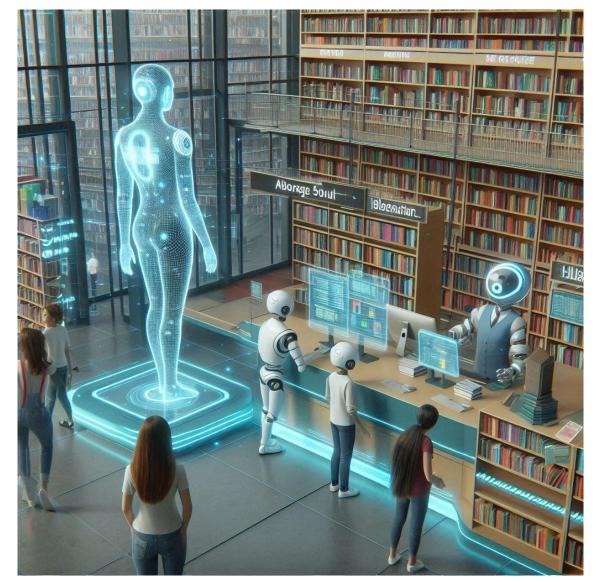


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New competencies

- Understanding and implementing Privacy and Data Protection
 - Understanding legal and ethical implications of data handling, implementing strong data protection measures, and educating users of their privacy rights
- Digital Literacy and Technology Integration
 - Ability to evaluate and adopt new technologies that enhance user engagement, library operations, and service delivery

- Responsible Data Science and Analytics
 - Using data visualization tools to effectively communicate data to stakeholders
 - Compare and contrast different Al models and critically evaluate them for ethical implications and suitability in addressing library challenges
- Sustainability Practices
 - Minimizing energy consumption characteristic of deep learning to minimize environmental impact by choosing to utilize greener models

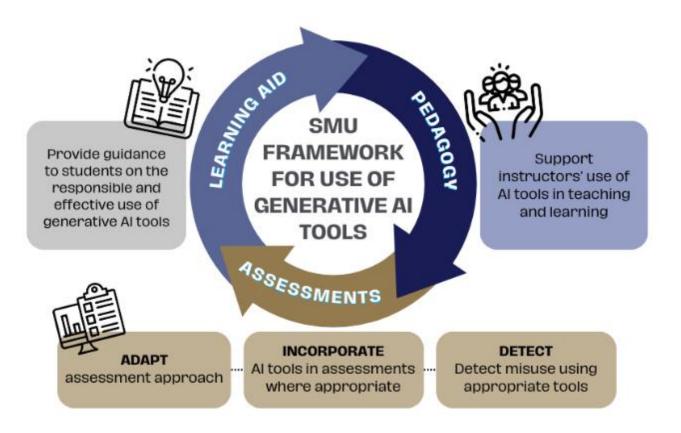
Ghoush, V., & McCoy, D. (2024). Looking ahead: Incorporating AI in MLIS competencies. *School of Information Student Research Journal, 14*(1).



SMU Framework for The Use of Generative AI Tools

University recognises the benefits of generative AI tools and is committed to integrate them into education while safeguarding academic integrity and aims to teach students to use these tools responsibly.

- Use of Generative AI Tools by Students as a Learning Aid
- Use of Generative AI Tools by Instructors as a Pedagogical Tool
- Use of Generative AI Tools by Students on Assessments







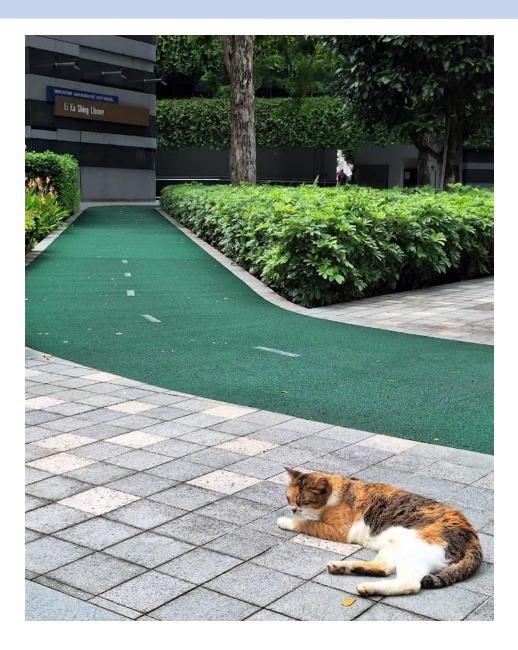
Summary

- Digital Transformation Areas
- Platform Management
- Trends & Challenges



Questions for you

- What talent and skills are required to enable a digital-first library?
- What infrastructure investments are needed to enable a digital-first library?
- What partnerships are needed to enabled digital transformation?





Thank you!

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