

AUSTRALIA STUDY VISIT REPORT

Introduction

The Australia study visit took place between 16 January and 21 January 2017. The group met with library leadership and visited facilities at five university libraries: University of Melbourne (Melb), Monash University (Monash), Australia National University (ANU), University of New South Wales (UNSW), and University of Sydney (Sydney). While our meetings and discussions explored a range of topics, there was an emphasis on the areas of organisational change and structures, research support and research data, and approaches to information literacy teaching and learning and learning skills development.

Key Recommendations

R1. Lead the establishment of a consortium of Singapore national and academic libraries to promote collaboration, efficiency and effectiveness, which is currently lacking at a national level.

Areas can include formation of a consortia for electronic resources acquisition, common centralised off-site storage of resources, common interlibrary loan system, provision of a national data service (similar to the Australian National Data Service), and one stop federated search, retrieval and delivery of information resources across all Singapore libraries.

As NTU takes the chairmanship of the Council of Chief Librarians in Singapore from 2017-2018, this can help realise the recognition and leadership position of NTU in shaping the national library and information environment. Other practical benefits include the enhanced bargaining power with vendors leading to better cost savings and better offerings of resources to users; provision of a national integrated interlibrary loan (ILL) and document delivery system for all users beyond the individual libraries; improve the research capability, knowledge sharing and capability of researchers across the country.

R2. Create a “project management” team that works across divisions on projects to implement projects effectively and efficiently and to initiate new projects while taking the goals and synergies of different divisions.

This “project management” team is a dedicated team that draws members from different areas. A successful team, observed at Sydney, was established after a reorganisation exercise in 2016. As part of this reorganisation, 75% of staff were given new roles and responsibilities. In this particular case, a new staff member, who had many years of project management experience, led the project team, which was composed of staff who were previously from different divisions in the library. The project management team at this library was accountable for managing and implementing projects in different divisions in order to improve services and processes. The team also provides recommendations for service development. After the successful completion of a project, the team hands over the project to the relevant divisions, giving them responsibility for maintaining the service, programme, etc.

This example demonstrates how a team dedicated to project management can facilitate the strategic completion of projects across divisions. As OIKLS moves forward with its reorganisation, establishing such a team can provide for the efficient implementation of designated projects in multiple areas, allowing for swift completion of priority projects. Such a team can also take the lead in identifying innovative projects that capitalise on synergies between divisions which may go unrecognised without a dedicated team's attention.

R3. Develop a local Research Skill Development Framework (RSD) in order to utilise a consistent framework for information literacy and learning activities and as a communication aid to use with faculty and others to discuss and explore these areas in order to encourage collaboration and develop a shared understanding of these areas.

The RSD is key to research and learning activities and partnerships at Monash (See Appendix A). While we explored the RSD with librarians at Monash, it is used across many universities in Australia. The RSD is a “conceptual framework for the explicit, coherent, incremental and cyclic development of the skills associated with researching” (Willson & O'Regan 2008, 2013). It has been used to successfully scaffold research skill development and to inform assessment and curriculum design (University of Adelaide, n.d.). In addition it has been a powerful tool to guide conversations and build partnerships with faculty members. At Monash, librarians partner with Learning Skills Advisors to work with their respective Faculties to develop and teach programmes and also to create and make available digital learning objects based on the RSD.

By developing a local framework that is relevant and responsive to the needs of the NTU community OIKLS can draw upon the framework in order to establish learning outcomes and expectations, measure student learning, and use it as a guide to discuss and collaborate with faculty on research, information literacy, and other learning skills. The framework will help in training librarians in teaching information literacy and research skills and provide a recognised framework to use to discuss research skills with faculty. This can lead to productive partnerships in learning and research between librarians and faculty, which can result in enhanced information literacy programmes and in further developing researchers' (particularly new researchers) skills.

Other Recommendations

R4. OIKLS should extend subscription of excellent set online resources for student and staff use, to include other stakeholder groups.

The current set of subscribed resources are not available for graduated students even if they become Alumni of NTU libraries. If we negotiate with e-resources providers to provide Alumni access to many of the electronic resources (e-resources) for free or at a largely discounted price, it would benefit both alumni and OIKLS, as this would increase alumni involvement and potential contributions to NTU development activities. At ANU, the University Librarian described how they were able to successfully negotiate with multiple vendors to allow for alumni access to e-resources at no additional cost to the university.

R5. Provide online training via several modes and formats, including Webinars for digital scholarship, data management, data visualisation, and other emerging areas.

Such forms of training will enable OIKLS to engage learners from the comfort of their desks, classrooms, or study spaces. Librarians from Sydney shared that they have observed that use of their resources increases after users attend these online trainings. These trainings are generally filled up immediately after the staff send out the registration email. This shows an increasing interest in online learning of library resources. NTU Libraries has traditionally engaged in face-to-face training, which is well received by those who are able to attend in person. If we are to target for a wider audience we should establish an online training presence as that would help the users to learn at their own pace. This will support student learning and enhance TEL activities of the University.

Learning Points

Teaching & Learning

- Monash has a group of staff who have the role of Learning Skills Advisors, who are experts in academic skills working in partnership with subject librarians in Faculty Teams to integrate academic skills into coursework and support development of learning skills. Learning Skills Advisors have a background in research and often subject expertise. Such a group of staff at NTU can extend the range of learning services that we provide, such as discipline-focused writing and study skills, which are not offered elsewhere on campus. This will benefit student learning and support faculty in their teaching.
- Outreach Liaison Officers do the promotion of library services to Schools. (UNSW) This allows Subject Librarians to focus on more detailed subject work as well as provide a consistent message to the Schools.
- Librarians are advised and supported to apply for teaching awards by collaboratively working with the academics. (Monash) By collaborating with academics, librarians can develop closer relationships with faculty, engage in a variety of teaching approaches and have increased interactions with students. By applying for teaching awards, librarians will be recognised as partners in teaching and learning. Several librarians have won teaching awards (with their faculty collaborators) at Monash. (Monash University Library, 2016)

Research

- University Archives consisting of digitised collections and University records (Melb). The archives are seen as digital memory of the University. Since NTU has evolved into successful university from Nantah days there is rich history and culture that exists which is not accessible to anyone. A university archive would provide a means for such information access.
- Bonus Plus (Bonus+) is an inter-library loan service integrated into the Library Management System (LMS). (Australian National University Library, n.d.) (ANU). Integrating our current inter-library loan service into LMS would provide an easier option for our users to request for other library materials and increase their access to materials.
- Research Impact Advisory supports grant application for only top 10 publications. They have moved away from supporting tenure and promotion exercise. (Melb) This allows library staff to prioritise projects while at the same time assisting researchers with determining their research impact.

Technology

- Apps development for learning activities outside of the library, for example, for field trips. (Melb) If implemented in NTU this will enable learning from virtually anywhere and also facilitate immediate sharing of learning content amongst participants and the teacher.

Spaces

- 24-hour learning spaces - motorised glass doors were used to close off access to the stacks from After Hours Zone after library closes. This allowed part of the library space to be made available to the students giving them more space on campus to study during all hours of the day and night. This would open up additional study space on the NTU campus. (Melb)
- Open concept service desk removes the physical barrier to the staff at the desk making it easier and less intimidating to approach the staff for help or enquiries. (Melb, ANU) (See Figure 1)
- Digital scholarship studio - services include: how to best analyse and visualise data (dedicated staff with PhD for this), digital curation services. (ANU) This helps students and researchers to better present their findings and data in their papers and presentations.
- A number of the universities we visited were repurposing (or had recently repurposed) their spaces to allow for 24/7 access and to accommodate more seats for student activities e.g. studying, discussion due to the changing needs of their students. (Monash, ANU, UNSW). This is also reflected in the results of the 2015 LibQUAL+ User Survey where "Library space that inspires study and learning" and "Quiet space for individual activities" were two of the most important aspects of the library to undergraduates. (Nanyang Technological University Libraries, 2015).

Human Resources

- There is a Senior Management Team consisting of 15 members at Sydney. They include directors, associate directors and executive officers. This Team looks at quality and compliance, and processes to streamline. This allows processes to be analysed and improved not only from the beginning to the end but also across different levels of responsibilities.
- One Year Graduate Posting (Graduate Librarian) gives opportunity to graduates who are interested in pursuing a career in the libraries. (Sydney) Such a position can help OIKLS identify and recruit high quality candidates for entry-level positions.
- As part of successful staff development activity, staff learned about other areas of work by engaging in activities in each other's workplaces for an hour each. This activity enabled staff to develop an understanding of the variety of positions and work areas in the library and to observe the contributions of their colleagues. It also provided them with knowledge of library services, practices, and processes outside of their own areas. (Monash)
- There is a Research and Learning Team, which is a dedicated team that operates the Research and Learning Point handling drop in sessions. In-depth queries are directed to Subject Librarians. Data collected from the Research and Learning Point, e.g. number of students who had queries on a particular assignment, is used to collaborate with faculty. This data provides information that can be used to enhance information literacy learning and other areas (Monash).

Appendix B shows selected samples of library spaces, services, systems and facilities that may be considered and applied to NTU Libraries.

Appendix C shows selected organisation charts.

Appendix D shows a list of our key contacts and areas in which we were interested to learn more.

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APPENDIX A: RESEARCH SKILL DEVELOPMENT FRAMEWORK (WILLISON, 2007)

Research Skill Development Framework

For educators to facilitate the explicit, coherent, incremental and cyclic development of the skills associated with researching, problem solving, critical thinking and clinical reasoning.

Students' Autonomy when Researching

	Prescribed Researching	Bounded Researching	Scaffolded Researching	Open-ended Researching	Unbounded Researching
<p>www.rsd.edu.au john.willison@adelaide.edu.au</p> <p>Students develop a research mindset through engagement with content and increasing awareness of ethical, cultural, social and team (ECST) aspects, when they...</p>	<p>Highly structured directions and modelling from educator prompt researching, in which...</p>	<p>Boundaries set by and limited directions from educator channel researching, in which...</p>	<p>Scaffolds placed by educator shape independent researching, in which...</p>	<p>Students initiate research and this is guided by the educator...</p>	<p>Students determined guidelines for researching that are in accord with discipline or context...</p>
<p>Curious</p> <p>Embark & Clarify <i>What is our purpose?</i> Students respond to or initiate research & clarify what knowledge is required, considering ECST issues.</p>	<p>Students respond to questions/tasks arising explicitly from a closed inquiry. Use a provided structured approach to clarify questions, terms, requirements, expectations & ECST issues.</p>	<p>Students respond to questions/tasks generated from a closed inquiry. Choose from a range of provided structures or approaches to clarify questions, requirements, expectations & ECST issues.</p>	<p>Students respond to questions/tasks generated from a closed inquiry. Choose from a range of provided structures or approaches to clarify questions, requirements, expectations & ECST issues.</p>	<p><i>Students generate questions/aims/hypotheses based on experience, expertise and literature.</i> Delve into and prepare for ECST issues.</p>	<p><i>Students generate questions/aims/hypotheses based on experience, expertise and literature.</i> Delve into and prepare for ECST issues.</p>
<p>Determined</p> <p>Find & Generate <i>What do we need?</i> Students find & generate needed information/data using appropriate methodology.</p>	<p>Students collect & record information/data using a prescribed methodology from a prescribed source in which the information/data is evident.</p>	<p>Students collect & record appropriate information/data from self-selected sources using one of several provided methodologies.</p>	<p>Students collect & record appropriate information/data from self-selected sources using one of several provided methodologies.</p>	<p>Students collect & record self-determined information/data choosing an appropriate methodology based on parameters set.</p>	<p>Students collect and record information/data from self-selected sources, choosing or devising an appropriate methodology with self-structured guidelines.</p>
<p>Discerning</p> <p>Evaluate & Reflect <i>What do we trust?</i> Students determine the credibility of sources, information & data, & make own research processes visible.</p>	<p>Students evaluate sources/information/data using simple prescribed criteria to specify credibility & to reflect on the research process.</p>	<p>Students evaluate sources/information/data & inquiry process using criteria related to the aims of the inquiry. Reflect insightfully to improve own processes used.</p>	<p>Students evaluate sources/information/data & inquiry process using criteria related to the aims of the inquiry. Reflect insightfully to improve own processes used.</p>	<p>Students evaluate information/data & the inquiry process using self-determined criteria developed within parameters given. Reflects to refine others' processes.</p>	<p>Students evaluate information/data and inquiry process rigorously using self-generated criteria based on experience, expertise and the literature. Reflect insightfully to renew others' processes.</p>
<p>Harmonising</p> <p>Organise & Manage <i>How do we arrange?</i> Students organise information & data to reveal patterns/themes, managing teams & processes.</p>	<p>Students organise information/data using prescribed structure. Manage linear process provided (with pre-specified team roles).</p>	<p>Students organise information/data using a choice of given structures. Manage a process which has alternative possible pathways (& specify team roles).</p>	<p>Students organise information/data using recommended structures. Manage self-determined processes (including teams) with multiple possible pathways.</p>	<p>Students organise information/data using self-determined structures, & manage the processes (including team function) within the parameters set.</p>	<p>Students organise information/data using self-determined structures and management of processes (including team function).</p>
<p>Creative</p> <p>Analyse & Synthesise <i>What does it mean?</i> Students analyse information/data critically & synthesise new knowledge to produce coherent individual/team understandings.</p>	<p>Students interpret given information/data & synthesize knowledge into prescribed formats. *Ask emergent, relevant & researchable questions.*</p>	<p>Students interpret several sources of information/data & synthesize to integrate knowledge into standard formats. *Ask emergent, relevant & researchable questions.*</p>	<p>Students analyse trends in information/data & synthesize to fully integrate component parts in structures appropriate to task. *Ask rigorous, researchable questions based on new understandings.*</p>	<p>Students analyses information/data & synthesizes to fully integrate components, consistent with parameters set. Fill knowledge gaps that are stated by others.</p>	<p>Students analyse and synthesise information/data to generalise or abstract knowledge that addresses self-or-group-identified gaps in understanding.</p>
<p>Constructive</p> <p>Communicate & Apply <i>How will we relate?</i> Students discuss, listen, write, respond to feedback & perform the processes, understandings & applications of the research, & applications of the research, hearing ECST issues and needs of audiences.</p>	<p>Students use prescribed genre to develop & demonstrate understanding to a pre-specified audience. Apply the knowledge developed to a similar context & follow prompts on ECST issues.</p>	<p>Students use prescribed genre to develop & demonstrate understanding to a pre-specified audience. Apply the knowledge developed to a similar context & follow prompts on ECST issues.</p>	<p>Students use some discipline-specific language & prescribed genre to demonstrate understanding from a stated perspective & for a specified audience. Apply to several similar contexts the knowledge developed & specify ECST issues.</p>	<p>Students use discipline-specific language & genres to demonstrate scholarly understanding for a specified audience. They apply the knowledge developed to diverse contexts and specify ECST issues in communicating.</p>	<p>Students use appropriate language and genre to extend the knowledge of a range of audiences. Apply innovatively the knowledge developed to multiple contexts. Probe and specify ECST issues that emerge broadly.</p>
<p>What characterises the move from 'search' to 'research'? Gathering more information and generating more data is merely a 'bigsearch'. Research is when students engage in all the above facets, time and again.</p>	<p>Research Skill Development (RSD) is a conceptual framework for Primary School to PhD. Developed by John Willison and Kerry O'Brien, with much trailing by Eleanor Peirce and Maria Ricci. October 2006, revised March 2015. Facets based on ANZIL (2004) Sueddecks & Bloor's et al. (1995) Taxonomy. Extent of Synthesis informed by SOLO taxonomy (Biggs & Collis, 1982). *Forming researchable questions often requires a high degree of guidance and modelling for students, resulting from their synthesis (Red, Green and Blue). The six facets are often used directly with students as a 'learning routine' (Ritchhart & Perkins 2008). The pre-punctuated four facets reflects dispositions towards research. Framework, resources and references available at www.rsd.edu.au. Information: john.willison@adelaide.edu.au</p>	<p>Research Skill Development (RSD) is a conceptual framework for Primary School to PhD. Developed by John Willison and Kerry O'Brien, with much trailing by Eleanor Peirce and Maria Ricci. October 2006, revised March 2015. Facets based on ANZIL (2004) Sueddecks & Bloor's et al. (1995) Taxonomy. Extent of Synthesis informed by SOLO taxonomy (Biggs & Collis, 1982). *Forming researchable questions often requires a high degree of guidance and modelling for students, resulting from their synthesis (Red, Green and Blue). The six facets are often used directly with students as a 'learning routine' (Ritchhart & Perkins 2008). The pre-punctuated four facets reflects dispositions towards research. Framework, resources and references available at www.rsd.edu.au. Information: john.willison@adelaide.edu.au</p>	<p>Research Skill Development (RSD) is a conceptual framework for Primary School to PhD. Developed by John Willison and Kerry O'Brien, with much trailing by Eleanor Peirce and Maria Ricci. October 2006, revised March 2015. Facets based on ANZIL (2004) Sueddecks & Bloor's et al. (1995) Taxonomy. Extent of Synthesis informed by SOLO taxonomy (Biggs & Collis, 1982). *Forming researchable questions often requires a high degree of guidance and modelling for students, resulting from their synthesis (Red, Green and Blue). The six facets are often used directly with students as a 'learning routine' (Ritchhart & Perkins 2008). The pre-punctuated four facets reflects dispositions towards research. Framework, resources and references available at www.rsd.edu.au. Information: john.willison@adelaide.edu.au</p>	<p>Research Skill Development (RSD) is a conceptual framework for Primary School to PhD. Developed by John Willison and Kerry O'Brien, with much trailing by Eleanor Peirce and Maria Ricci. October 2006, revised March 2015. Facets based on ANZIL (2004) Sueddecks & Bloor's et al. (1995) Taxonomy. Extent of Synthesis informed by SOLO taxonomy (Biggs & Collis, 1982). *Forming researchable questions often requires a high degree of guidance and modelling for students, resulting from their synthesis (Red, Green and Blue). The six facets are often used directly with students as a 'learning routine' (Ritchhart & Perkins 2008). The pre-punctuated four facets reflects dispositions towards research. Framework, resources and references available at www.rsd.edu.au. Information: john.willison@adelaide.edu.au</p>	<p>Research Skill Development (RSD) is a conceptual framework for Primary School to PhD. Developed by John Willison and Kerry O'Brien, with much trailing by Eleanor Peirce and Maria Ricci. October 2006, revised March 2015. Facets based on ANZIL (2004) Sueddecks & Bloor's et al. (1995) Taxonomy. Extent of Synthesis informed by SOLO taxonomy (Biggs & Collis, 1982). *Forming researchable questions often requires a high degree of guidance and modelling for students, resulting from their synthesis (Red, Green and Blue). The six facets are often used directly with students as a 'learning routine' (Ritchhart & Perkins 2008). The pre-punctuated four facets reflects dispositions towards research. Framework, resources and references available at www.rsd.edu.au. Information: john.willison@adelaide.edu.au</p>

F a c e t s o f R e s e a r c h

APPENDIX B. SELECTED SAMPLES OF LIBRARY SPACES, SERVICES, SYSTEMS AND FACILITIES



Figure 1. Open concept service desks at University of Melbourne and Australian National University. The concept and design makes it less intimidating to approach library staff.



Figure 2. A ticketing system and a designated waiting area were introduced to direct the flow of movement of users approaching the service desk. This insures that users will get the help that they need while allowing for privacy and space at the service desk and reduces the surprises staff get from users approaching them from behind.

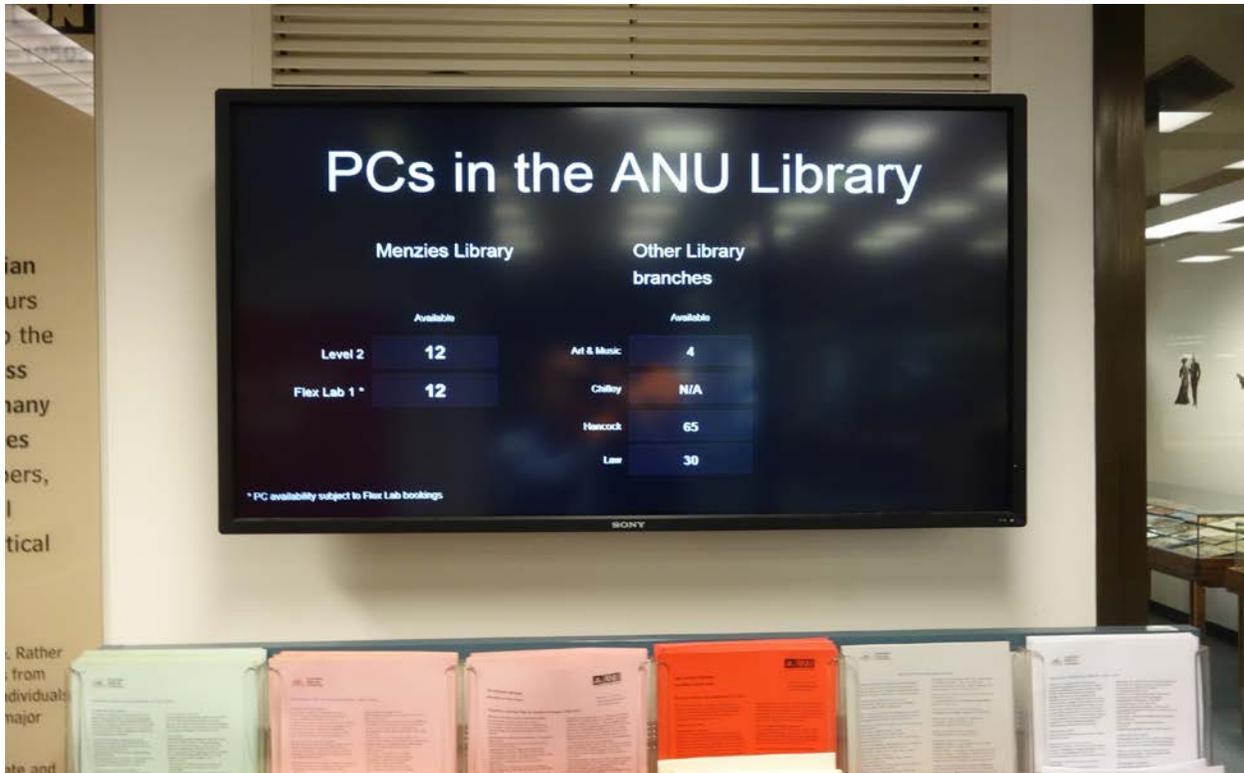
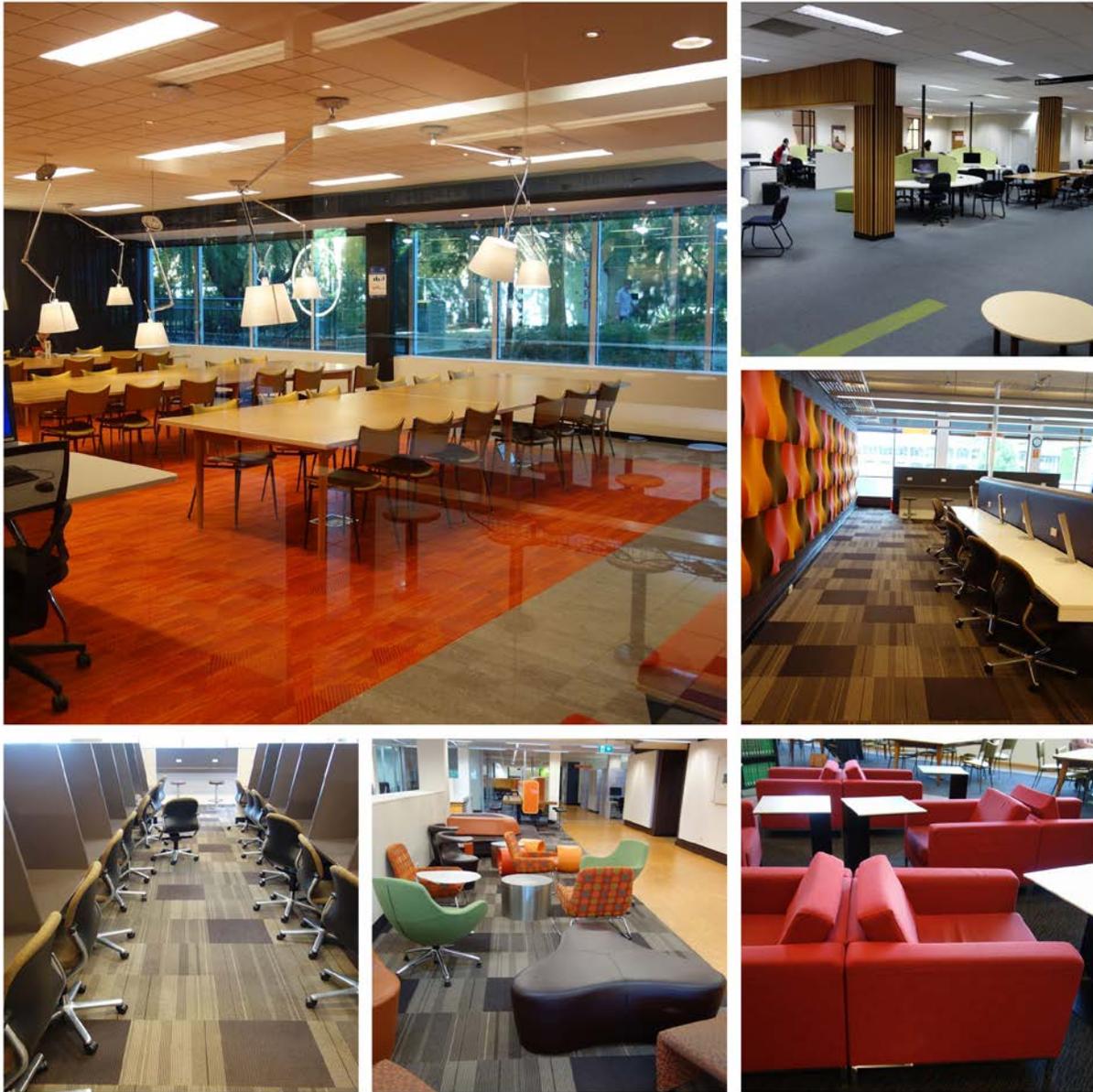


Figure 3. Available PCs at a glance at Australian National University. Helps user quickly locate a free PC.



Figure 4. Emergency phones at Monash University and University of New South Wales offer a direct and single point of contact from the library to the campus warden in the event of emergencies. This is especially helpful after office hours in 24/7 study areas.



1. University of Melbourne
2. Australian National University
3. University of New South Wales
4. University of New South Wales
5. University of New South Wales
6. University of Melbourne

Figure 5. Different kinds of study area to cater to the different needs of the students.



Figure 6. Consultation rooms at University of Melbourne and University of New South Wales offer well-equipped and conducive environment for librarians to meet with users.

APPENDIX C: ORGANISATION CHARTS

University of New South Wales Organisation Chart

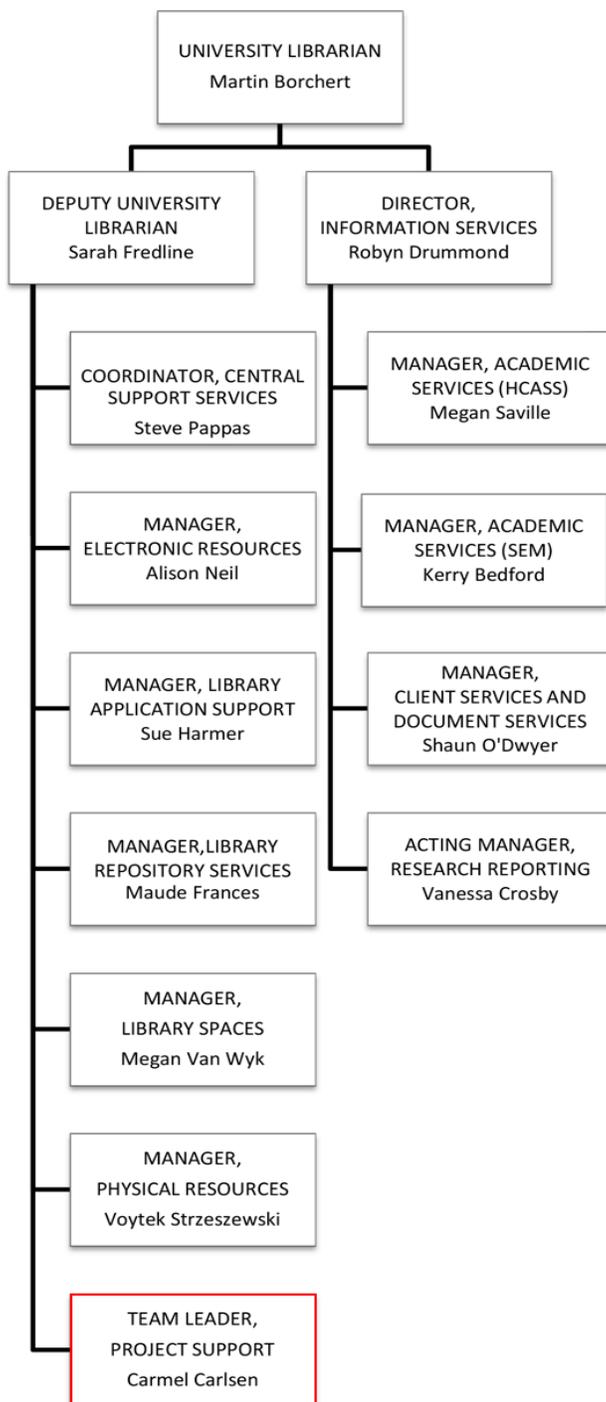


Figure 7. Library Senior Management (University of New South Wales Library, 2017) includes a Project Support team to help manage projects in the library.

APPENDIX D: KEY CONTACTS

University of Melbourne	
Contact / Role	Remarks
Philip Kent University Librarian & Executive Director, Collection pgkent@unimelb.edu.au	
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UNITED KINGDOM STUDY VISIT REPORT

Introduction

The purpose of this study visit is to learn best practices and innovative ideas from academic libraries in the UK for our future planning and directions for the Office of Information, Knowledge and Library Services (OIKLS) established at the end of 2016 under the leadership of Professor Schubert Foo, Deputy Associate Provost (Information and Knowledge). The study trip took place from 4 February – 11 February 2017 (inclusive of travel time).

In the following report, the team has put together key recommendations that are forward looking to address the needs of a global generation of information users, researchers and learners.

Abbreviations used in the report:

- CU - Coventry University
- HWU - Heriot-Watt University
- ICL - Imperial College London
- OXON - Oxford University
- UOS - University of Sheffield

Key Recommendations

R1. Build a “library anywhere model” that is flexible and responsive to serve a global university community

- The library will enhance its resource licensing and acquisitions model for books, journals and online multimedia content with vendors. This is to serve the needs of a growing global learning community who are in multiple campuses, stationed overseas at partner universities or institutions on attachments in the course of their studies or work. An example is HWU which has campuses locally and overseas.
- Partner with university stakeholders to develop a mobile portal that will serve students, faculty, researchers, staff and alumni throughout their NTU journey. The Library aims to be part of the one portal with participating departments such as IT, SAO, OAFA and TLPD to provide 24x7 seamless access to a comprehensive suite of digital resources and personalised information via a mobile application. For example, ICL has a mobile app for students to access information about the institution and services on-the-go (ICL, n.d.)
- Collaborate and provide expertise to organise the online resources available on NTU's technology enhanced learning platform. OIKLS's role would be to provide rich metadata to facilitate searching and personalised access to the variety of digital resources, course readings, video lectures, interactive and self-paced courses for students, PaCE students, distance learning exchange and part time students anywhere as long as they have internet access.

R2. Repurpose, refresh and introduce new innovative spaces to meet current evolving needs, trends and aspirations of library stakeholders, including students, faculty, researchers, administrators, alumni and industry partners

- Consolidate and centralise all physical books and resources in a storage facility and provide an end to end service to manage and deliver books to users on demand. This would free up the existing book shelving spaces to provide, for example, common spaces for researchers and students to discuss and do project work. Provide a variety of 24x7 spaces and zones that caters to the different learning and research needs of students. For example, spaces in ICL, CU and UOS are zoned into quiet (and silent), discussion or group learning areas.
- Collaborate with university stakeholders and industry partners to provide a variety of thematic spaces that are interactive, team-based and collaborative to support new and innovative teaching, learning and research activities. They could equip the spaces with specialised software, hardware and provide training for areas such as data visualisation and multimedia content creation for multidisciplinary research and coursework projects. For example, UOS Library co-owns a building called 'The Diamond' with floors of spaces ranging from study spaces to central reference services with library and IT staff, creative media rooms, engineering laboratories and lecture theatres (See Appendix A).

R3. Partner with faculty and educational developers in NTU to develop resources, lesson plans and innovative approaches to learning, teaching and research

- Work with faculty to develop new approaches and resources (toolkits, guides and teaching materials) for their classes. These could cover information and digital literacy, research methodologies and collaborating on inter-disciplinary projects, learning beyond the classroom and residential education initiatives. Adopt a key role in packaging training and instructional programmes on specific research areas, such as sustainability. An example would be the 10 billion Project by UOS, which is an interdisciplinary project, answering the key question of "how will we live together in a world of 10 billion?" (Chilton, 2016). The Library will also deliver resources via online platforms in support of NTU direction for technology-enhanced learning.
- The upcoming Research Commons at Lee Wee Nam Library will provide a conducive environment to execute a variety of programmes and thematic events. The space will be flexible enough and equipped with a myriad of tools, toys and technologies required to support the experimentation of new approaches in teaching, learning and research. An example would be the Disruptive Media Learning Lab (DMLL) at the CU. It is a digital-heavy experimental unit that lead in developing new approaches in teaching and learning (CU, n.d.). DMLL provides thematic spaces with team learning materials in the form of game cards, Lego blocks, beacon technology for mobile learning, etc. to encourage group interactivity, stimulate discussion and develop creativity in learning and learning on-the-go (See Appendix B).
- Establish a team of expert subject librarians to collaborate with faculty and partner in their teaching and student learning activities. For example, the ICL has teams of librarians specialising in different subject areas to liaise, provide research services, facilitate and co-teach students during lectures/tutorials on the appropriate resources and research skills for their assignments and projects. Subject librarians at DMLL work alongside with faculty, learning technologists, educational developers and researchers to bring experiment new

technologies and approaches bring them to the classroom across different disciplines (See Appendix C)

- Build librarian-faculty partnership for opportunities on projects and research activities. For example, OXON Libraries has just established a Centre for Digital Scholarship to collaborate with research centres, faculty and researchers on digital projects that could potentially lead to publications in well-established journals.

Learning Points

Unique services provided currently not provided at NTU Libraries (Initials in the brackets indicate which library or libraries offered these services)

a. Technology

- Self-service kiosk for loan of laptops or iPads (ICL, CU)
- Automated card access gates. (ICL, UOS, CU)
- Assistive technology equipment and facilities (ICL, UOS)
- Database of research expertise, for example, to support match-making (OXON)

b. Spaces

- 24x7 silent, quiet and discussion zones (ICL, HWU, UOS)
- Sponsored Library spaces for example, Samsung Room (OXON)
- Donation of reading seats in library spaces by Alumni (OXON)
- Offsite or centralised storage for physical materials (OXON, UOS)

c. Teaching and Learning

- Integrated service desk / reference service with a dedicated team of IT and Library staff (UOS, HWU)
- Embedded subject librarians (involved in department/school meetings, provide on-site consultation services and briefings. (ICL)
- Manage reading lists to support courses in learning management systems (ICL)
- Staff with legal background for copyright consultation services (OXON, UOS)

d. Archives

- Exhibitions of archives and interactive software for users to learn about the displays (CU)
- Digital archives and preservation initiatives (OXON)

e. Publishing

- Publishing arm for Library (OXON)

Refreshing service models

a. Technology

- Every student has a blog site for their projects (CU)
- Library has a part in the University campus mobile project (ICL)
- Virtual Learning Manager to look at developing online materials and podcasts (HWU)
 - Video /Lecture capture
 - Online Learning
 - Distance learning models
 - Offsite resource access
 - Reading lists management

b. Teaching and Learning

- Directory of librarian expertise (CU)
- Team based subject librarians with each member championing specific areas such as data management, reading list management, digital scholarship. (ICL, CU)
- Lunch time workshops on practical topics (e.g. writing skills, using productivity tools, Latex) (ICL)
- Pop up booth for reference or consultation (CU, UOS)
- Collaborate on interdisciplinary programmes with faculty (e.g. 10bn project at UOS) The program will incorporate elements of digital literacy and explore subjects beyond their classroom, contributing to developing a well-rounded graduate
- Elements of the program:
 - How will this impact society on a whole?
 - What are the consequences of having this many people on the planet?
 - What is the impact in the environment, society, communication and relationship?
 - How will we as part of the 10 billion people impact live, work, play and learn?
 - The library will collaborate with external partners, like environmental groups and companies to enrich the content.
 - Create content using the equipment in the library bring people in to discuss these topics
 - Produce content and the present these content to the university on a whole, maybe even placing the material online for an international discussion.
 - Go beyond just the current students it's a continuing conversation after graduation invite graduates back to talk about the project after they graduate
 - Use this for job interviews and resumes positioning themselves away from other graduates
 - Narrative booth – Students go into the booth to record their thought on the 10bn project
- **Learning through Play (CU):**
 - Academics teach using Lego in their classes
 - Use of Beacons to push information to mobile.
 - Card games to teach information literacy
 - Explore funding for Librarians to conduct and develop tools and programs
 - An undergraduate blog for each and every student to use as their portfolio

c. Others

- Security personnel stationed after office hours or full time at the entrance. Users can send text to provide feedback, e.g. a user making too much noise in the silent zone) (ICL, OXON)
- Collaborate with other libraries on projects, for example, User Experience studies (ICL, OXON)
- Payment scheme for open access publications in repository (HWU)

Spaces

- Integrated and innovative facilities and services by key stakeholders (Library, Schools, Facilities, IT) are provided in one building, for example – Diamond Building in UOS
 - Integration of stakeholders spaces, example lab, mini lecture theatre
 - Variety of reading spaces
 - Media studio
- Library spaces design and concept led by and conceptualised by non-librarians. Integrated with learning activities (CU)
- Variety of study spaces on different floors (e.g. Silent, quiet, noisy, collaborative, thematic) (All libraries)
- Interactive TV or simple white boards for users to share / pen their thoughts. Interesting ideas are taken note of by library staff to post on the blog (UOS, CU)
- Mac pcs in the library spaces (CU)

Human Resources

- Library, IT, learning and facilities under the purview of Director of Information Services.
- Integrated services and no wrong door policy. (HWU)
- Dedicated IT personnel in Library (ICL, HWU, UOS, CU)
- Online staff bulletin to keep all library staff informed on what is happening and what new developments are happening in other divisions in the library. (ICL)
- Structured staff development model. Online system for tracking staff training and development needs. Staff can also indicate their strengths to offer training to others. Regular reviews with every division in the library to gather new training requirements (e.g. engaging an actor to train subject librarians on voice projection) (ICL)
- Professional Development - Professional librarian consortium in the UK (CILIP) identified 25 skill sets that every librarian should have (ICL)

Appendix D shows selected organisation charts. Appendices E and F shows a list of our key contacts and areas in which we were interested to learn more.

Prepared by:

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Hedren Sum
March 2017

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ICL. (n.d.). *Imperial Mobile*. Retrieved 20 March, 2017, from ICL Website:

<https://www.imperial.ac.uk/students/online-services/mobile>

Chilton, M. C. (2016). *10bn: How will we live together in a world of 10 billion?* Sheffield: University of Sheffield. Retrieved 20 March, 2017 from <http://10bn.sheffield.ac.uk/magazine>

CU. (n.d.). *About DMLL*. Retrieved 20 March, 2017, from DMLL Website: <http://dml.org.uk/about/>

APPENDIX A: SELECTED EXAMPLES OF LIBRARY SPACES

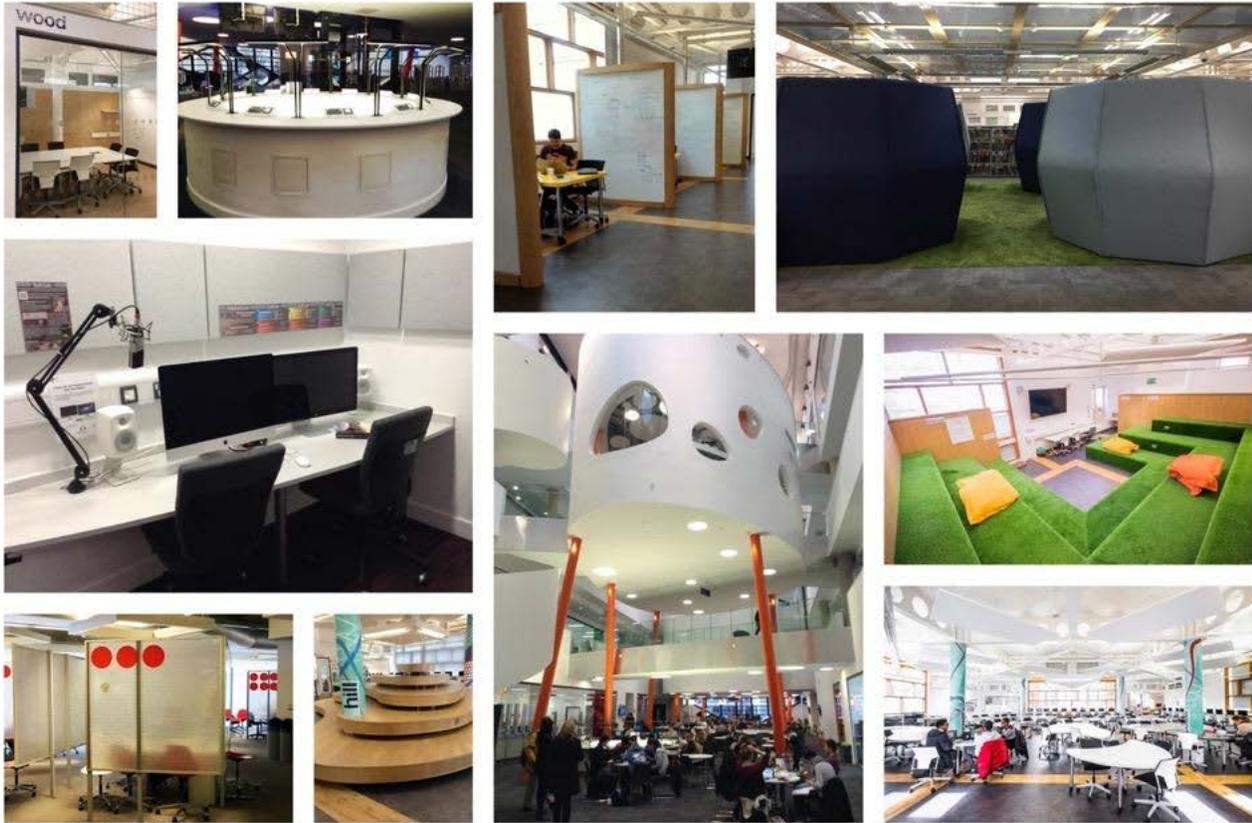


Figure 1. Various images of library spaces

1	2	3	4
5	8		9
6	7	10	

1. Themed project room for 6 to 10 people, DMLL at CU
2. Circular standing desks for individual study, UOS
3. Open small group discussion area, DMLL at CU
4. Insulated sound proof pods for group discussion, CU
5. Media development room, UOS
6. Semi-open discussion area with partitions, ICL
7. The Hill, easy-seating social space for 30 people, DMLL at CU
8. Collaborative spaces and school laboratories in the Diamond, UOS
9. The Grass, open amphitheatre for 50 people, DMLL at CU (*Image from Robothams Responsive Architecture*)
10. The Open Café, open spaces with movable furniture, DMLL at CU (*Image from Robothams Responsive Architecture*)

APPENDIX B: BROCHURES

University of University of Sheffield Library Infographics

Infographics are designed specifically for every School to communicate how the library is serving their community and provide interesting statistics to support.

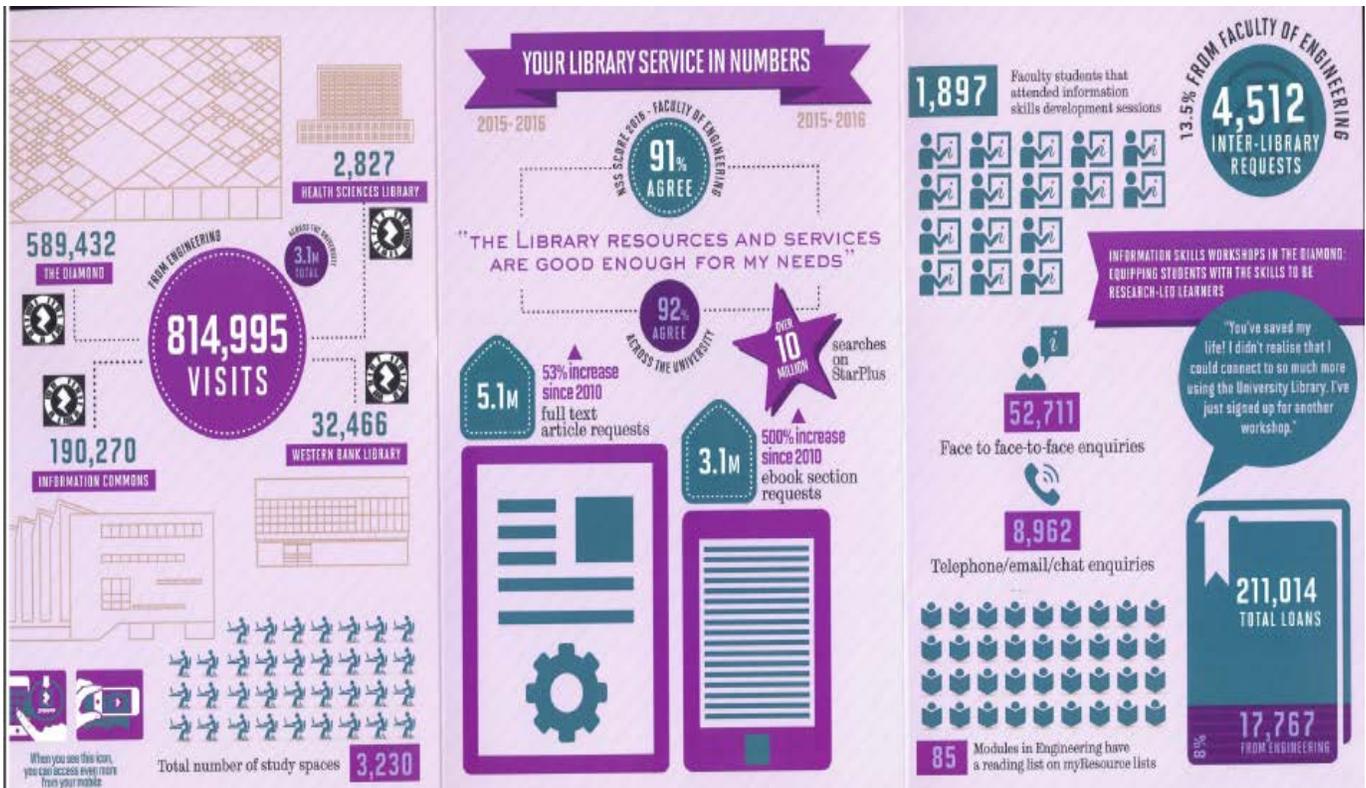


Figure 2. "Your library service in numbers" infographic for the faculty of engineering (297mm x 210mm)

Learning through Deck of Cards by DMLL at CU

Thematic questions in the form of cards can be used in the learning rooms to encourage creative learning and group discussion. Below are two examples by the DMLL at CU.



Figure 3. Selected cards from Photomediations Creative Jam Cards

The Creative Jam Cards is a set of creative challenge cards, which can be used as a tool in classes to stimulate thinking and explore different open creative practices. There are four categories of cards: question, licence, challenge and duration. The rules of play requires to first consider the question, pick an open licence and find images, respond to the challenge and create a new work within the selected duration.

For more details, visit <http://photomediations.disruptivemedia.org.uk/creative-jam-cards>.



Figure 4. Selected cards from the L•E•A•R•N framework card deck

The L•E•A•R•N framework card deck was developed by DMLL as part their “Beyond Flipped” learning methods. It is a set of 35 cards separated in five stages of learning: Locate, Evaluate, Articulate, Re-evaluate and Naturalise. The cards allow users to tackle a relevant topic with different approaches across the different stages.

For more details: visit <http://flipped.coventry.ac.uk/learn>

APPENDIX C: SELECTED EXAMPLES OF SERVICES



Figure 1. Various images of library services

2	1
3	4

1. Themed project room for 6 to 10 people, DMLL at CU
2. Open-door office for subject research assistance, ICL
3. Librarian's hot desk in library spaces, CU
4. 24-hour loan and request pick-up, ICL
5. Self-service loan of laptops and poster, ICL and CU

APPENDIX D: ORGANISATION CHARTS

Disruptive Media Learning Lab Team Directory

The team at DMLL has a flat organisation structure and is project-oriented. It comprises of subject librarians working alongside with learning technologists, pedagogy experts, researchers, project managers to provide a myriad of learning approaches across different disciplines in the CU community. They include flipped classrooms, games science, open courses and new models of online-learning.



Figure 2. The team at DMLL

Top Row (Left to Right)

- **Johnathon Shaw**, Director
- **Alex Masters**, Learning technologist
- **Sylvester Arnab**, Reader in Games Science and Senior Research Fellow
- **Gill Evans**, Subject Librarian
- **Sharon Davison**, Library Assistant
- **Sue White**, Subject Librarian
- **Sally Patalong**, Subject Librarian
- **Chris Bark**, Subject Librarian
- **Phil Jones**, Academic Liaison Manager

Second Row (Left to Right)

- **Daniel Villar-Onrubia**, Principal Project Lead
- **Katherine Wimpenny**, Reader in Arts Related Research and Pedagogy / Senior Research Fellow
- **Debra James**, Project and Community Development Officer
- **Alison Rowland**, Senior Project Manager
- **Sue Marshall**, Subject Librarian
- **Kristy Kift**, Academic Liaison Manager
- **Olivia Llewellyn**, Subject Librarian
- **Lisa Lawrence**, Subject Librarian
- **Holly Singleton**, Subject Librarian

HWU Information Services

There is a director to oversee library, IT and facilities to ensure a seamless delivery of end to end services to the university community.

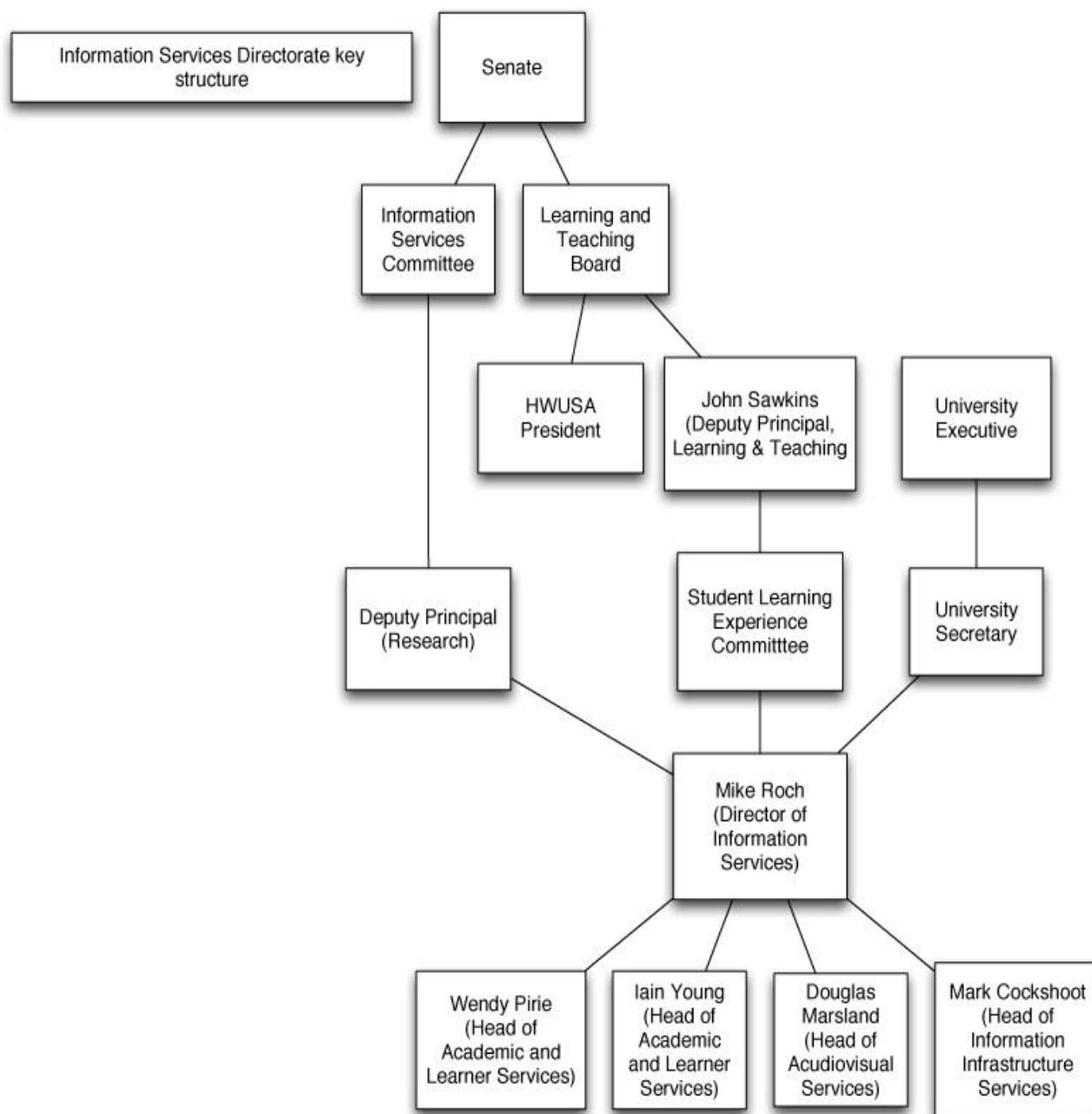


Figure 3. Organisation chart of HWU Information Services

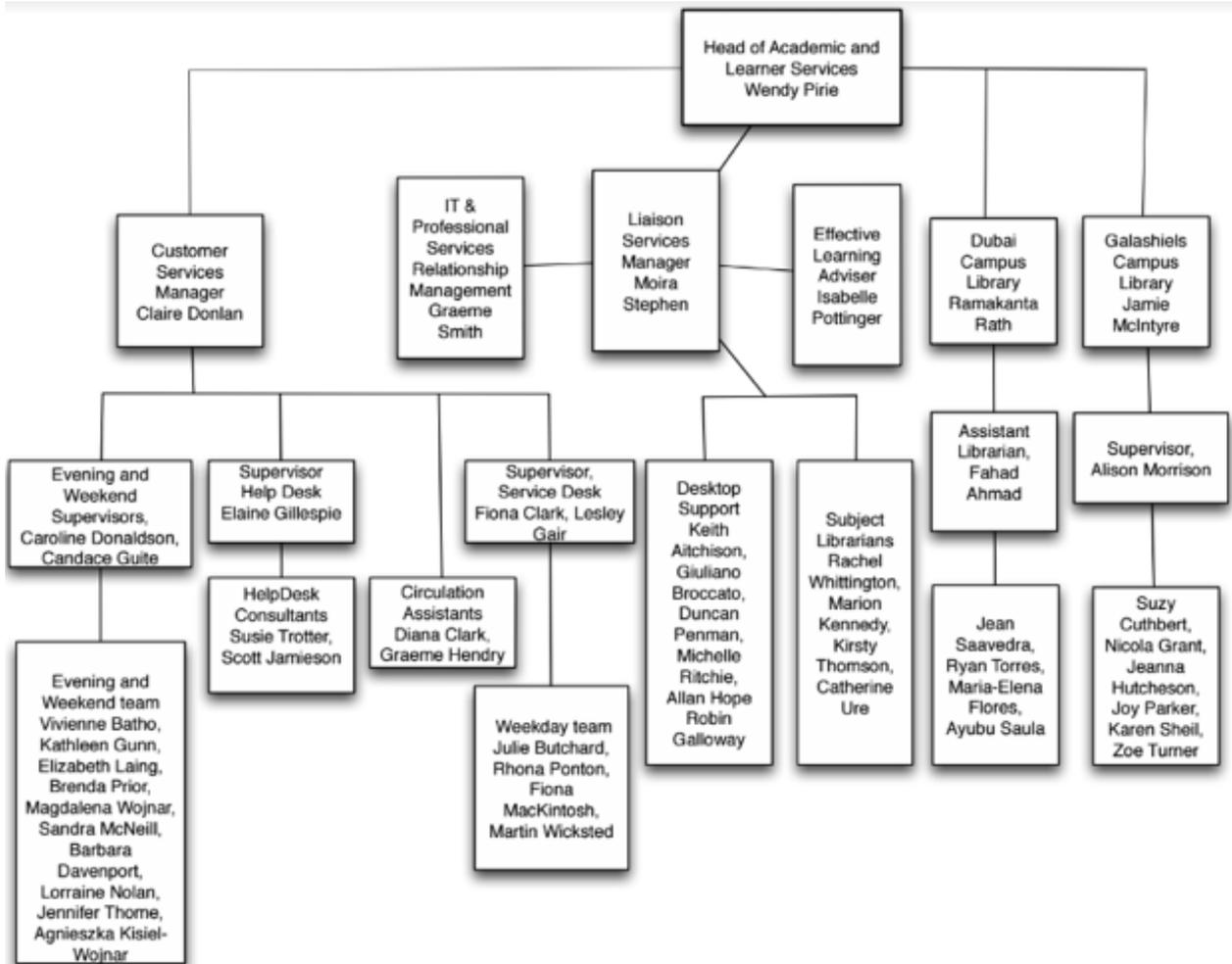


Figure 4. Organisation chart for Academic and Learner Services at HWU Information Services

APPENDIX E: AREAS OF INTERESTS

Areas of interest identified for each university

In our research for the study trip, we identified the following university libraries and the areas of strength, although other areas of interest were discussed as well during the actual visits.

Library	Areas of interest
ICL	Mapping user journeys Subject Librarian service Different user communities, transforming central library spaces
OXON	Digital scholarship, where experts advise researchers on using digital tools to support their research in ways that would not have been possible 50 years ago. This ranges from large-scale digitisation of manuscripts—such as the ongoing project to scan million pages from the Vatican’s collections and half a million from the Bodleian so that they can be viewed and searched for free online—to tailored projects that can change an entire field of research.
HWU	Information Service model Collaboration between IT, Teaching & Learning and Library
UOS	Information Commons within the University’s new Diamond Building. Details about different aspects of their information literacy program http://www.shef.ac.uk/library/infolit/index
CU	The Disruptive Media Learning Lab as part of the CU Library’s new refurbishment project Research focus part of DMLL: expertise in arts-based research (both offline and online), learning analytics, and are interested in exploring how traditional research methods can be applied in online settings. Unique atmosphere and design activities, blog http://dml.org.uk/about/

APPENDIX F: KEY CONTACTS

Contact/Role	Remarks
<p>Ruth Newton (ICL College) Staff Resource Coordinator ruth.newton@ICL.ac.uk</p>	
<p>Rosemary Rey (OXON University) Executive Assistant to Richard Ovenden, Bodley's Librarian rosemary.rey@bodleian.ox.ac.uk</p>	<p>Bodleian Libraries Clarendon Building Broad Street OXON OX1 3BG Telephone 01865 277158</p>
<p>Jane Antcliff (UOS University) Personal Assistant to Alison Little - Associate Director Learning Strategy and Student Engagement j.antcliff@sheffield.ac.uk</p>	<p>University of UOS Library Directors Office Western Bank Library UOS S10 2TN Tel: 0114 22 27283</p>
<p>Wendy Pirie (HWU University) Head of Academic and Learner Services Information Services Directorate W.Pirie@hw.ac.uk</p>	<p>+44 (0)131 451 3872</p>
<p>Philip Brabban (CU Library) University Librarian, CU Library aa2950@coventry.ac.uk</p> <p>Jonathan Shaw (DMLL) Director, Disruptive Media Learning Lab arx186@coventry.ac.uk</p>	<p>CU University Priory Street CU, United Kingdom CV1 5FB Telephone: +44 (0) 24 7765 7688</p>

USA STUDY VISIT REPORT

Introduction

The purpose of this study visit is to learn best practices and innovative ideas to inform our future planning and direction following the formation of the new Office of Information, Knowledge and Library Services (OIKLS). It was part of an initiative to review the future of library and related information and knowledge services in NTU. The team visited libraries of Massachusetts Institute of Technology (MIT), Harvard University (HU) and Duke University (DU) from 20 – 27 February 2017.

Key Recommendations

R1. Build up diverse non-library profession expertise to complement librarian expertise to strengthen OIKLS' capability to provide emerging services envisioned in the near future to NTU's faculty, researchers and students.

Such expertise include capabilities in data management, data cleaning, data analysis, data visualisation, digital preservation, app development and programming skills. We observed that services offered in the libraries are greatly enhanced and well received by the staff and students when different expertise come on board and are accepted as equals in the library team to realise a common vision together.

As we currently lack the skills to provide many technology-enhanced services, recruiting IT expertise in OIKLS will be critical for the design and support of the platforms and systems required. To provide and maintain a high standard of these new services, OIKLS should recruit non-librarian expertise and create desirable career paths for them.

R2. Establish a university archive to capture, organise and preserve institutional legacy, university records and records of research, teaching and learning, and provide discoverability and access to them.

It is timely to start a university archive now because of the rising standing of NTU and before records of great value become irretrievable. These records are critical and important for informed decision-making, administrative, finance, legal and research purposes. A central repository with good record management and retention policy is vital to increase efficiency and lower cost. With digital records being discoverable, accessible and retrievable, physical records can be promptly disposed of after digitisation, thus freeing up office space.

To facilitate the establishment of an archive, a project team should be formed to study in detail the archival programs and best practices of notable institutions, and to engage with various NTU stakeholders to prioritise and define the scope, content and structure of archival projects.

R3. Partner with university departments which have key roles in supporting research, teaching and learning, and use library space to provide holistic academic support, services and facilities not available elsewhere in campus.

To support the growing needs of interdisciplinary and team-based research and learning, OIKLS should provide an integrated hub within library space with equipment, software, facilities and consultancy support for data management, data analysis, data visualisation, user experience testing and interviews, and student academic writing, etc. By forging partnerships with other university departments, we will be able to bring the NTU community together in centralised locations, where they can collaboratively explore new ideas, experiment, innovate, design, and consult with specialists. All users will benefit from this holistic approach to information, resources and expertise access.

Other Recommendations

R4. Maximise storage space to enable relocation of low-used or e-copy-available print books from libraries.

Besides maximising existing closed stack space, we should also explore higher density shelving options together with effective fast-delivery on demand to ensure that user service quality is not compromised. Space released can be transformed into innovative, collaborative and learning spaces for the NTU community.

R5. Review and expand instructional programmes to help students understand their responsibility in information eco system and to teach skills sets.

Our programmes should include author's rights, publishing and copyright management to inform students on their options, responsibilities and rights in the world of scholarly publishing. We should also teach the tools and approaches for managing personal digital content (e.g. social media, Google Docs, DropBox, email, etc.), and related complications and privacy issues, to cultivate graduates with a sense of responsibility for their words and actions. To aid students who have difficulty in improving their skills sets, IT and technical workshops on R Programming, Python, Java, video editing, etc. can be conducted.

Learning Points

Teaching & Learning

- Shifting instructional approach towards information eco system by helping students understand their responsibility in engaging with information, e.g. workshops on author's rights, publishing, ethics and eco system, copyright management, data management, data visualisation, Dropbox (complications, privacy issues, etc.) [MIT]
- More value in going beyond library orientation to teach skills sets, e.g. Java, video editing, etc. [HU]
- Undergraduate hall residents are recruited and trained to guide fellow students in doing their research assignments. Each of them has a mentor librarian. This is a very good way to connect students with library services with this peer-to-peer approach. [HU]
- Information literacy courses are made available on the learning management platform for easier access by students. [DU]

Research

- Research funding is budgeted for ongoing research in information science and scholarly communication. [MIT]
- Full suite of research data services, including data consultations, instructions, workshops, outreach, guest lecturing, dataset provision, data cleaning, data visualisation and analytics, software provision and support, was provided to the university community. Librarians also engage in research partnership with faculty and research data management. [DU]

Technology

- Web archiving system that accepts URLs of websites cited by researchers, makes a copy of the websites and generates a permanent link for perpetual access. [HU]
- Digital textbook platform for lecturers to create course materials which are shared with and adapted by other lecturers. [HU]
- Digitise and OCR-enable university-owned materials to make them available and discoverable online to promote open access. [HU]

Spaces

- High-density off-site storage with a capacity of 15 million items using a semi-automated system. Items are retrieved manually from the storage within an hour and delivered to campus libraries within 24 hours of request. The facility is also used by other universities for a fee. An alternative to this semi-automated system is a robotic automated system with operational costs estimated to be the same over the long run. [DU]
- A User Research Centre was set up within the library to coordinate user experience research in order to make evidence-based decisions for more effective programs and services. The centre provides available equipment for observing user activity, space and practical training for faculty, students and staff to conduct usability testing, interviews, space assessments, user experience methods, etc. [HU]
- The libraries involved faculty and students in the planning stage of space design to understand their requirements on the equipment, software and services required to meet their emerging research and learning needs. In Duke University, the team had conducted an envisioning workshop to discuss new visions of the library as well. [DU, HU]
- Makerspace, technology-enabled spaces for scientific experiment demonstrations and spaces for display of faculty and students work [HU]. A similar space in Duke University is collaboratively managed and supported by the Centre for Instructional Technology staff, IT staff and library staff. [DU]
- An embedded writing centre in the library where students can obtain holistic academic help, search for resources and get assignments done within the same premises. The centre is managed by a faculty member and supported by student writing consultants trained in generating good research questions (peer to peer consultation, not faculty-student consultation). [DU]
- Libraries have selected areas with 24-hours access. [DU, HU, MIT]

Collection

- 12-institution Ivy Plus collaboration works on shared collection, library technology, preservation and records management. They also share resources based on agreements with publishers. [DU, HU, MIT]

Archives

- University archives is managed by the library. [DU, HU, MIT]
- Institute Archives & Special Collections were started to mark the 100th anniversary of MIT. In addition, administrative staff wanted to know why policies/procedures were formed and how they changed over time. [MIT]
- Alignment with Treasurer Department to manage administrative, legal, financial and historical documents. [MIT]
- Digital archivists are hired to take care of records management system, record schedules, etc. [MIT]
- Harvesting system for web archiving of institutional websites, professors' websites, project websites, etc. [HU, MIT]
- Emails of selected personnel are archived. Decision was made on what to archive, whose emails should be collected and how "deep" they should be collected (e.g. all emails of top management will be archived). [HU]
- Working with peers at national/international level on born-digital collections such as web archiving and email archiving. [HU].
- The library uses digital forensic techniques to retrieve and preserve information stored on obsolete computers or in obsolete formats. The staff then analyse the information and create metadata to provide the context of the information retrieved. [HU]
- The university's learning objects, stored in a repository, are retrievable for future teaching purposes. Challenges faced are issues on format, sizes and student privacy [MIT]. Other

challenges are the difficulties in reusing them and the faculty's reluctance to provide metadata for learning objects. [DU]

Publishing

- Content produced by university press is available for open access. [MIT]
- Discoverability, usability and availability is as important as having open access. [HU, MIT]

Development

- To attract funders, library negotiates deals with publishers and vendors to include alumni packages. [DU]
- Gifts can be as little as US\$60 or a few thousand dollars over a few years, for adopt-a-book, adopt-a-digital-collection, adopt a study room, adopt a bench, etc. [DU]

Human Resource

- Libraries are reorganized by centralising certain services, e.g. access services, technical services, IT services, conservation/archival services. [HU, MIT]
- An external person was hired for phasing and managing re-org project. [MIT]
- Project groups are team-based and made up of members from different functional areas / expertise. [HU]
- Make use of learning opportunities within university, e.g. learn negotiation skills by attending MIT business courses for students, learn pedagogical skills from Centre for Teaching and Learning. [HU, MIT]
- To bridge the gaps in skills sets required for new emerging information services, recruit people outside the library sector, e.g. IT software experts, data visualisation analysts, data analysis consultants and social sciences researchers. [DU, HU]

Appendix A shows selected samples of library spaces, services, systems and facilities that may be considered and applied to NTU Libraries.

Appendix B shows samples of useful brochures and handouts produced by the libraries visited.

Appendix C shows selected organisation charts.

Appendix D shows a list of our key contacts and areas in which we were interested to learn more.

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March 2017

APPENDIX A: PHOTOGRAPHS OF LIBRARY SPACES, FACILITY AND EQUIPMENT



Figure 1. Duke: Library Service Centre (High Density Storage Facility)

Boxes of different heights and sizes are used to maximise storage of items of varying heights. The height of each shelf is adjustable to accommodate the boxes. The boxes are barcoded and the shelving system assigns their locations (row and shelf number) on a “first come first serve” basis. Items are shelved for speedy retrieval and maximum capacity. Manually operated forklifts are used to facilitate the storing and retrieving of items. A dedicated team of staff and good workflow ensure efficiency in the operation of this storage facility.



Figure 2. Duke: Edge - The Ruppert Commons for Research, Technology and Collaboration

The Edge was the product of an envisioning exercise with stakeholders (including faculty) in 2012 where librarians, faculty and students came together to discuss new visions of the library and library facilities in the future. This is a collaborative space set up for digital scholarship and research, with most areas designed for group use.



Figure 3. Duke: The Brandaleone Lab for Data and Visualisation Services

The library's data and visualisation services department manages this lab. The software (both purchased and open source) installed on the PCs are selected based on what is being taught in classes, reference enquiries received by the library, etc. Though many of the software are open source, many users still need assistance in using the software and the library's data and visualisation services fills this research needs gap.

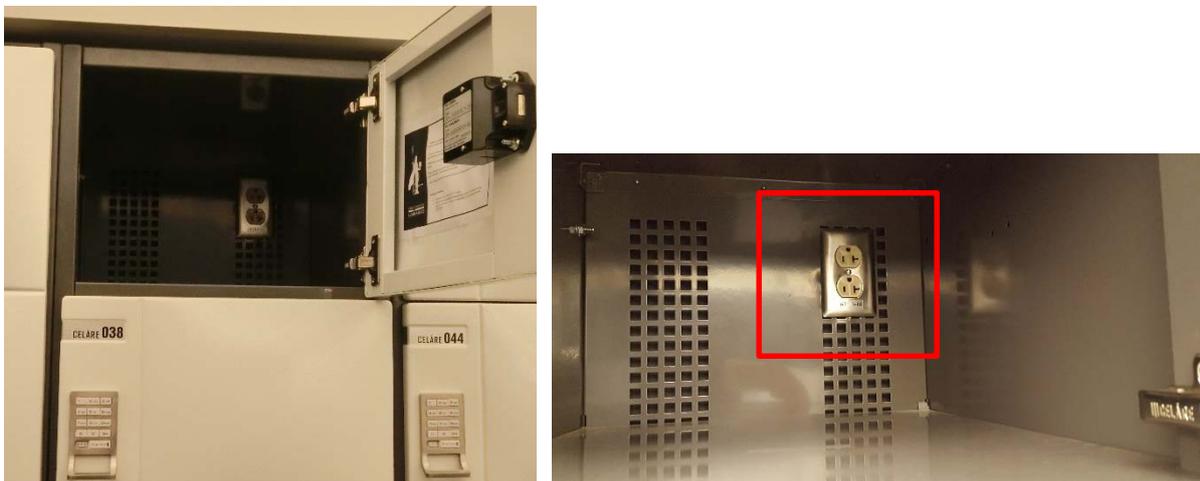


Figure 4. Duke: Electronic Rental Lockers for Students' Use

Housed in the library, the lockers have charging ports that students use to charge their mobile devices, making them very popular among students due to its great utility.

APPENDIX B: BROCHURES / HANDOUTS

HARVARD

LIBRARY

Objectives in Action 2016–2021

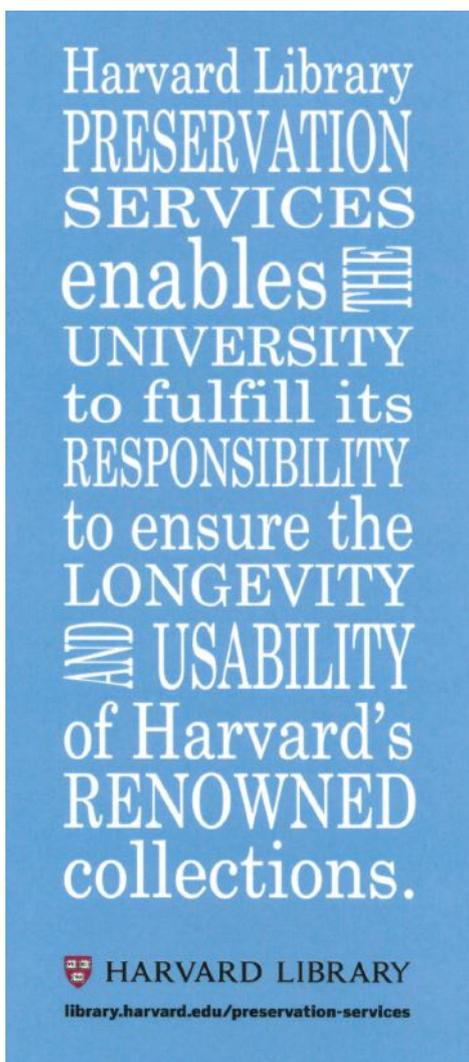
Mission: The Harvard Library advances scholarship and teaching by committing itself to the creation, application, preservation, and dissemination of knowledge.

1. Collections & Content	2. Access & Discovery	3. Research, Teaching & Learning	4. Stewardship	5. Professional Development
<p>Implement a Harvard Library collection and content development strategic plan in support of University-wide research, teaching, and learning.</p> <ul style="list-style-type: none"> • Actively build and manage general and special collections in a One Harvard framework • Partner inside and outside Harvard to provide students and scholars a broad and boundless array of materials, independent of location or ownership • Shape and implement a strategy for print and digital storage that links local capacity and collaborative opportunities • Develop strong technology to support growth of and access to digital collections 	<p>Enable effective access to knowledge and data through intuitive discovery, an advanced interface, and networks of expertise and global collaborations.</p> <ul style="list-style-type: none"> • Increase access to the world's largest academic library • Open collections through a program of coordinated digitization • Promote open access and disseminate Harvard scholarship 	<p>Deliver innovative and programmatic support for learning and research in partnership with faculty and other research and pedagogical support organizations.</p> <ul style="list-style-type: none"> • Expand the library's role as a partner in education to further develop and support adaptive, critical, and informed learning through multiple forms of engagement • Develop and implement communication strategies to convey research, teaching, and learning information to students and scholars 	<p>Steward vulnerable and critical research information in partnership with academic and administrative functions across the University and beyond.</p> <ul style="list-style-type: none"> • Develop programs, improve infrastructure, and develop policies to support the management of born-digital collections • Ensure that Harvard's library collections are secure by implementing policies and best practices • Develop and implement an effective life-cycle management plan for University records 	<p>Support a learning organization for library staff to achieve the mission of the Harvard Library.</p> <ul style="list-style-type: none"> • Adopt recruitment and retention strategies to build a diverse workforce • Create a culture of learning to ensure that staff have opportunities to become technologically skilled, adaptable to change, and adept at program management • Ensure that staff become proficient in evidence-based decision making and apply data analysis to the development of services and workflows • Provide incentives to innovate and to develop cross-organizational skills

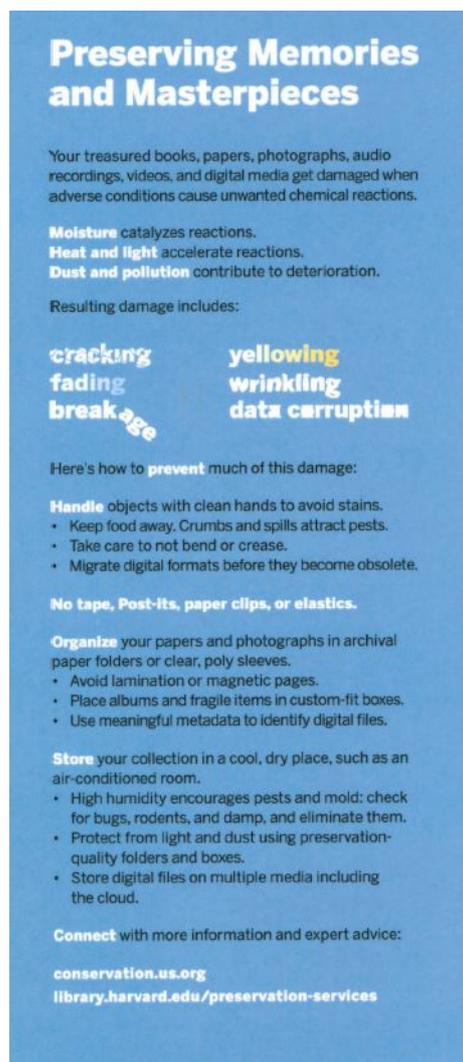
Updated March 29, 2016

Figure 5. Harvard Library – Objectives in Action 2016-2021

This handout summarised the five-year strategic plan of Harvard Library. Widely disseminated to library staff for easy reference.



Front



Back

Figure 6. Leaflet on Harvard Library Preservation Services

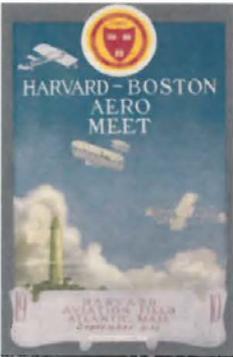
This leaflet helps to educate Harvard university communities on the best practices for handling rare/valuable items, how to preserve and store them for longevity, and how they can get help from the library. It acts as both a promotional material for library's archival and preservation services and expertise, and as an informative introductory guide to the preservation of valuable items.



Watercolor drawing of Christ Church, ca. 1781. HUJ 2181



Records Management



1910 poster. HUD 3123



Installation of Computer console in Cabot Hall, 1966. UAV 605 (AS895-25)



Detail from College Book Nº1, 1639, including a hand-drawn design for the Veritas seal. UAI 5.5



HARVARD University Archives

The Harvard University Archives is the oldest and one of the largest institutional academic archives in the United States.

The University Archives collects, organizes, preserves and provides access to a comprehensive record of more than 375 years of life at Harvard. From 17th century scientific observations to 21st century web sites, the University Archives' collections comprise approximately 60,000 feet of University records, personal and faculty archives, records of student, alumni/ae, faculty and employee organizations, dissertations, theses and prize papers, and related historical materials.

This activity is tied integrally to records management services for Harvard University staff, administrators and faculty. Records management staff in the University Archives provide guidance and resources for all stages in the records and information lifecycle, from creating records through destruction of non-permanent records or transfer of permanent records to the University Archives.

FACTS & FIGURES

SIZE OF HOLDINGS

116,000 HOLLIS records
144,000 cubic feet of materials managed by Archives staff
5 terabytes stored in digital repositories

COLLECTION FORMATS

Paper, including manuscript materials and publications // Visual materials, including most photographic formats, silkscreen posters, and hand-drawn mathematical theses // Audio materials, including analog and magnetic formats // Moving image materials, including motion picture films and magnetic media // Digital materials, including born-digital and digital copies of Archives' holdings // Three-dimensional materials, including ceramic tableware, clothing, and furniture

OLDEST DOCUMENT

A 1577 deed in the Harvard family collection. This document records John Harvard as a former owner of a tenement standing in the east side of Barbican, in the Parish of Saint Giles, "without Cripplegate of London." It is believed that the John Harvard named in this deed was an ancestor of John Harvard (1607-1638). *HUG 1447, Box 2*

OLDEST RECORD SERIES

Records of the Harvard Corporation, 1642-1992. *UAII 100, UAI 5.x, UAI 15.x, and UAI 20.x*

LARGEST COLLECTIONS

Largest series of University records - Undergraduate student records, 1890-2003 (~3,500 cu ft.). *UAIII 15.88.10*

Largest faculty collection - Papers of Arthur Casagrande, 1911-1988, Gordon McKay Professor of Soil Mechanics and Foundation Engineering (412 cu ft.) *accession # 18512*

SMALLEST COLLECTION

A receipt, "received of Mr. Judah Monis the sum of twenty four shillings for dining twelve times it being two shillings a dinner" from Timothy Green, Boston Sept. 4, 1734." *HUA 734*

Fall 2016

Pusey Library—Harvard Yard • Cambridge, MA 02138 • T 617-495-2461 • F 617-495-8011 • archives.harvard.edu

Figure 7. Harvard University Archives Handout

A good reference for the items NTU might want to collect and store in archives if a University Archives is to be established (e.g. the scope of coverage and formats)



Records Management Services

Records are one of the University's most valuable assets. Records support decision-making, demonstrate compliance, document the history of the University, and perhaps most importantly, enable us to do our jobs. Just like other University assets, records need to be properly managed in order to maximize their value and minimize their cost. By implementing good records management practices, your office can

- Control costs associated with records and information management
- Improve efficiency and access to information
- Meet compliance obligations
- Minimize the legal risks posed by inadequate records management practices
- Ensure that permanent and historical records are captured and maintained

Records Management Services (RMS) is committed to assisting all University offices and departments to control costs, improve efficiency, meet compliance obligations through high-quality records management practices, and ensure that permanent records are transferred. We provide guidance and resources for all stages in the records and information lifecycle, from creating records through destruction of non-permanent records or transfer of permanent records to other staff at the Harvard University Archives.

We provide professional guidance on the management of records, from the creation and use to storage and disposition. Our services include

PROFESSIONAL GUIDANCE

- Guidelines and best practices
- Employee training workshops and presentations
- Consultations with University offices and departments
- Records management project partners

ADVICE ON

- Retaining and disposing of records
- Managing and organizing records
- Managing electronic records and e-mail
- Off-site storage
- Reformatting and scanning



Figure 8. Harvard Records Management Services Handout

Learning points for rolling out record management services and programs. This handout highlights examples of the services and consultancy that we can provide if OIKLS aims to be the driver/leader in providing record management services to the University.

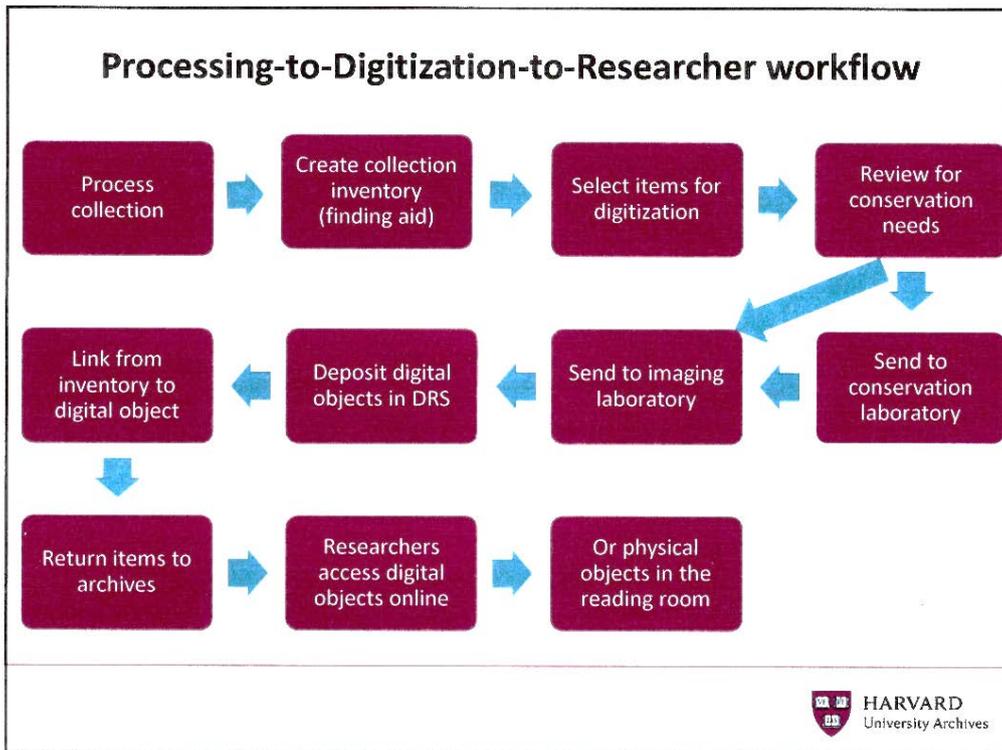


Figure 9. Harvard University Archives: Digitisation to Research Workflow

Learning points for setting up preservation service where huge amount of collections have to be conserved and digitalised. It requires various in-depth expertise (archiving and conservation), high-end digitalisation equipment, and working with various non-library professionals (e.g. curators, technicians).

Duke Libraries Visioning Workshop

Tuesday, August 21st | Fuqua Faculty Hall | 8:00am - 4:30pm



Background

With the construction of Bostock Library and the renovation of Perkins, the Duke Libraries have become a **vibrant center of intellectual life** on campus. To remain vital and vibrant as modes of research and learning evolve, these libraries must also **evolve**. On August 21 the Duke Libraries convened a diverse group of library staff, faculty and students to participate in a day-long workshop which explored emerging needs and developed a **new vision** for the next stage of library services and facilities.

Workshop

During this day-long workshop, the group went through a series of exercises in both large group sessions and small breakout sessions charged with forecasting the future of research and scholarship at Duke and the role of the Libraries as research partners. Following an afternoon "prototyping" session, the group synthesized the day's discussions and identified themes to help guide a planning process this fall.



Agenda

- 8:00 – 8:30 Breakfast & Introductions
- 8:30 – 9:50 Large Group Session – Lightning Round
Look into your crystal ball...considering interdisciplinarity, globalization, MOOCs, digital scholarship, the pace of change, etc., describe key aspects of the research and learning environment at Duke five years from now...
- 10:00 – 12:10 Small Group Sessions – Exploring Themes
- 1 – Transdisciplinary collaborations
 - 2 – The future of digital scholarship
 - 3 – Successful learning / research communities
 - 4 – Possible range of support / services / partnerships
 - 5 – "Wicked problems"
- 12:10 – 12:30 Share Small Group Findings
- 12:30 – 1:50 Lunch / Presentation / Discussion
What are we learning from others?
- 2:00 – 2:45 Small Group Session – Prototyping
Using the materials provided at each table, compose a model of an effective research / learning environment incorporating the themes / findings from the earlier exercises...
- 2:45 – 3:20 Share Prototypes
- 3:30 – 4:30 Synthesis, Priorities, Next Steps

Themes

1. Take Risks

- Provide a broad range of spaces, services and materials as catalysts for innovation
- Foster a community for experimentation through leadership and partnership
- Observe researcher behavior; identify new directions; reinforce and expand services to support them
- Utilize pilots to determine what services are needed and how to make them successful

2. Create Complementary Physical and Online Library Experiences

- Increase consistency between the Libraries' physical and online environments, making each an extension of the other
- Facilitate the serendipity of browsing and unplanned interactions both online and physically
- Pursue an additive culture rather than a replacement culture

3. Host Interdisciplinary and Transdisciplinary Collaborations

- Utilize physical and virtual library spaces for creating knowledge and connecting communities
- Make resources (space, people, equipment) more "grabable"—i.e., visible and available when needed without advance planning
- Provide reliably available space and resources for longer-term research initiatives

4. Expand Role of Library Staff as Partners, Scholars and Teachers

- Encourage simultaneous engagement with faculty and students working together to create and disseminate new knowledge
- Develop appropriate workforce with the right skills
- Create and implement plans for sustainability as programs become operationalized

5. Celebrate Intellectual Life and Discovery

- Provide a neutral social space such as a pub for informal scholarly discussions
- Recognize and honor researchers' accomplishments frequently
- Facilitate discussions, workshops, and other events that advance digital scholarship

6. Make Research Visible

- Provide physical and virtual exhibition spaces, including flatscreens and whiteboards, for researchers to display their work
- Make work of the library staff more visible
- Highlight the process, not just the end product



Participant List

Aaron Welborn	Ian Baucom	Naomi Nelson
Aisha Harvey	Jean Ferguson	Paolo Mangiafico
Amy Campbell	Jim Tuttle	Rhyné King
Ann Elsner	Joe Rondinelli	Robert Korstad
Ashley Jackson	Joel Herndon	Ron Djuren
Bob Byrd	John Little	Samhi Noone
Caroline Bruzelius	Kathy Franz	Sara DiNoto
Daniel Griffin	Laurie Patton	Sara Seten
David Bell	Liz Milewicz	Berghausen
David Pavelich	Lynne O'Brien	Tom Hadzor
Deborah Jakubs	Mallory Newton	Tom Kearns
Ed Gomes	Mary Caton Lingold	Tom Nechyba
Eric Haggstrom	Michael Finigan	Victoria Szabo
Heidi Madden	Michael Peper	
Henry Greenside	Molly Tamarin	

Next Steps

The libraries will facilitate an inclusive planning process this fall to explore the themes from this workshop in more detail.

Figure 11. Duke: Summary of Duke Libraries Visioning Workshop 21 Aug 2012

Duke Libraries Visioning Workshop was an important milestone for Duke Libraries. During this day-long workshop, a diverse group of library staff, faculty and students came together to discuss new visions of the library and library facilities in the future, forecasting the future of research and scholarship at Duke and the role of the Libraries as research partners. One main outcome of the workshop is The Edge (The Ruppert Commons for Research, Technology, and Collaboration), a space for research data services and support for faculty and students.



Data and Visualization Services Department
<http://library.duke.edu/data> <askdata@duke.edu>



DUKE UNIVERSITY LIBRARIES

Staff Expertise

-  **DATA SOURCES**
Locate and license data sources
-  **DATA MANAGEMENT**
Learn reliable data management practices
-  **DATA CLEANING**
Transform, prepare, and normalize existing data
-  **DATA ANALYSIS**
Get help using analytical and statistical software
-  **MAPPING AND GIS**
Conduct spatial analyses and create maps
-  **DATA VISUALIZATION**
Visually explore and communicate research results












DVS welcomes new staff!
 Jen, Sophia, and Mara are available to teach and consult on data management issues.
 Email askdata@duke.edu for more information!

Data and Visualization Services provides **consulting and instruction** for a wide variety of classes and research teams across campus. We are happy to consult with your team or offer instruction for your class.

Consulting Appointments

Email askdata@duke.edu with quick questions, data requests, off-campus support needs, and appointment inquiries.

Walk-in Consulting

For quick help, stop by the **Brandaleone Lab for Data and Visualization Services** (in the Edge on the 1st floor of Bostock) during our regular walk-in hours.

Walk-In Schedule: <http://library.duke.edu/data/about/schedule>

Workshops

DVS offers a series of regular workshops on the latest methods and tools for conducting data-driven research.

Sample workshops include:

- **Intro to R**
- **Advanced Tableau**
- **Web Scraping**
- **ArcGIS Online**

Workshop Schedule: <http://library.duke.edu/data/news>

Figure 12. Duke University Libraries – Data and Visualisation Services Department Brochure

A handout with concise information on Duke Library’s own data and visualisation services department that comprises of 11 staff members. The team collectively provides a full suite of data services including dataset provision, data cleaning, data visualisation and analytics, and research data management services. In addition, the team also provides data consultations, instructions, outreach, guest lecturing and research partnership with faculty. Software supported include R, Python, GIS software and Gephi.

APPENDIX C: ORGANISATION CHARTS

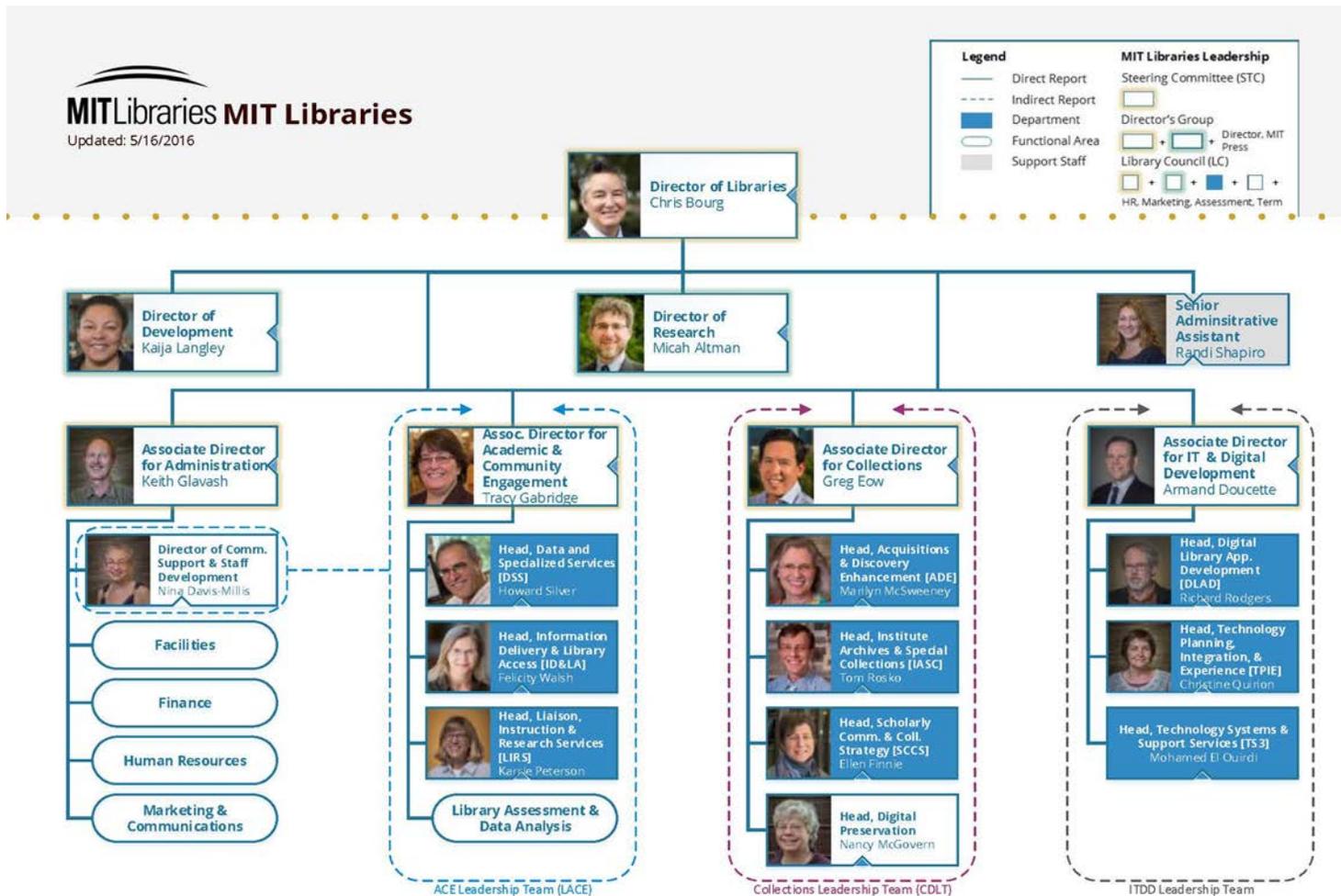


Figure 13. Organisation Chart of MIT Libraries
(Director of MIT Press reports to Director of MIT Libraries)

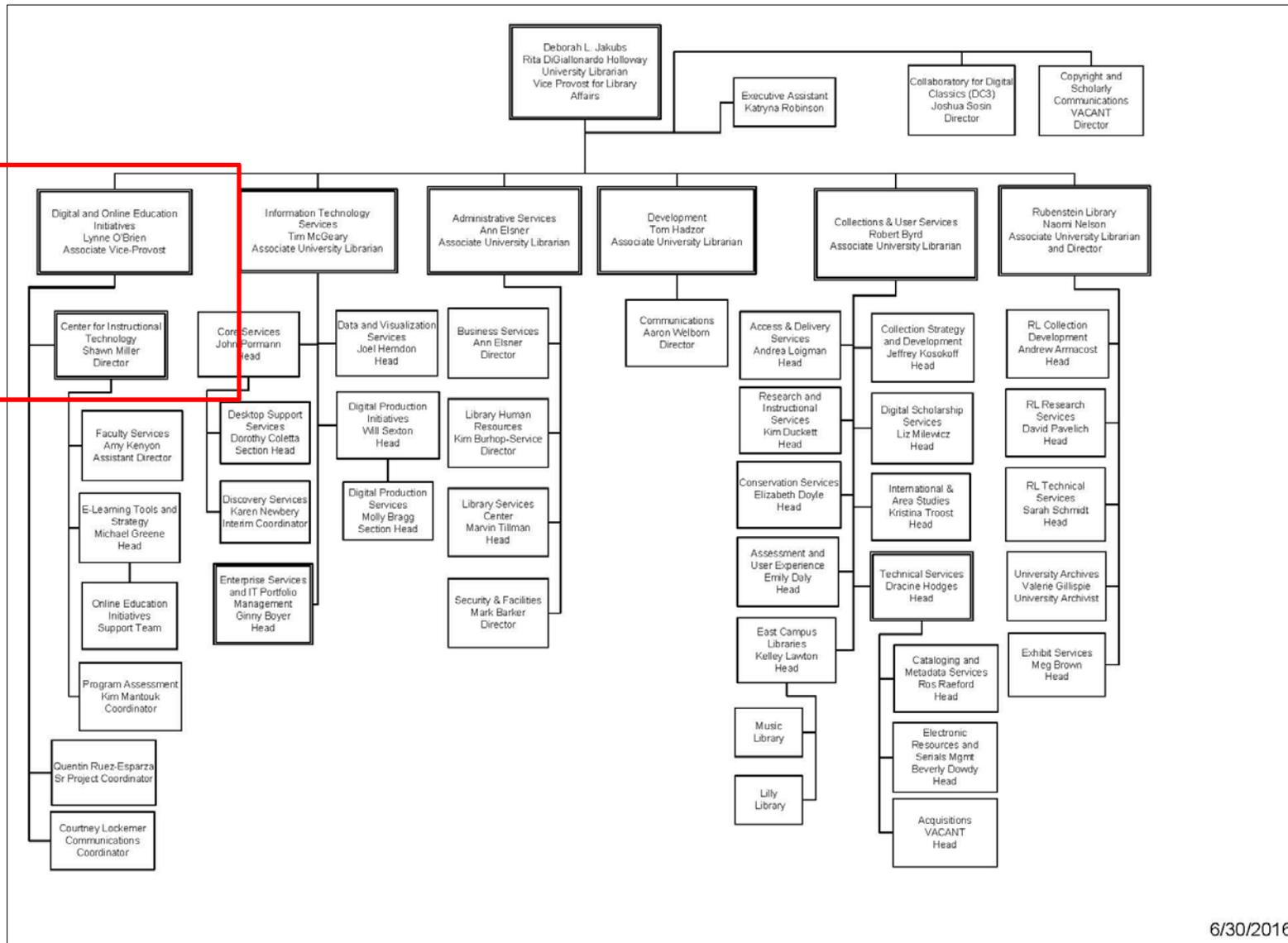


Figure 14. Organisation Chart of Duke University Libraries

Centre for Instructional Technology, the department that provides the technology and technical support for teaching and learning in Duke University, reports to the Library (under the Digital and Online Education Initiatives Department)

APPENDIX D: KEY CONTACTS

Massachusetts Institute of Technology (MIT) Libraries

<https://libraries.mit.edu>

Contact/Role	Areas of Interests
<p>Dr Chris Bourg <i>Director, MIT Libraries</i> cbourg@mit.edu</p> <p>Mr Keith Glavash <i>Associate Director for Administration, MIT Libraries</i> kglavash@mit.edu</p>	<ul style="list-style-type: none"> ▪ Future of Libraries ▪ Task Force Preliminary Report (Full) (24 Oct 2016) ▪ Task Force Preliminary Report (Executive Summary) ▪ Ideas Bank ▪ 4 themes; 10 strategic recommendations ▪ Digital collections – images, media, maps, etc. ▪ Institute archives and special collections

Harvard University Library

<http://library.harvard.edu>

Contact/Role	Areas of Interest
<p>Dr Sarah Thomas <i>Vice President for the Harvard Library and University Librarian; Roy E. Larsen Librarian for the Faculty of Arts and Sciences</i> sarah_e_thomas@harvard.edu</p> <p>Dr Franziska Frey <i>The Malloy-Rabinowitz Preservation Librarian; Associate Librarian for Preservation, Conservation and Digital Imaging Services; Chief of Staff for Harvard Library</i> franziska_frey@harvard.edu</p>	<ul style="list-style-type: none"> ▪ Harvard Library Objectives in Action 2016 – 2021 ▪ Weissman Preservation Center ▪ Preservation Program ▪ Harvard University Archives ▪ University Records Management ▪ Library Innovation Lab at Harvard Law Library

Duke University Libraries

<http://library.duke.edu>

Contact/Role	Areas of Interest
<p>Dr Deborah Jakubs <i>Rita DiGiallorardo Holloway University Librarian & Vice Provost for Library Affairs</i> deborah.jakubs@duke.edu</p>	<ul style="list-style-type: none"> ▪ Duke Link (Teaching & Learning Centre) ▪ The Edge (The Ruppert Commons for Research, Technology, and Collaboration) ▪ Data and visualisation services ▪ Library Service Center (high-density repository) ▪ Centre for Instructional Technology ▪ Thompson Writing Studio

KOREA/TAIWAN STUDY VISIT REPORT

Introduction

The Korea/Taiwan study visit took place from 26 February to 3 March 2017. The group met with library leadership and visited the libraries at five universities: Seoul National University (SNU), Yonsei University (Yonsei), National Taiwan University (NTU), National Taiwan Normal University (NTNU), and National Tsing Hua University (Tsing Hua). While our meetings and discussions explored a range of topics, there was an emphasis on the following areas: (1) Research and teaching support services provided by the libraries, (2) Special collections and university archives, (3) Library space reconfiguration, and (4) Human resource management.

Key Recommendations

R1. Lead Singapore's universities to set up off-site storage warehouse; transform library spaces for lifelong learning among students and alumni

RFID-shelving systems at Tsing Hua allows for fast retrieval of library items. The National Taiwan University Library will be employing robotics for fully-automated warehouse book retrievals. Overall, we see leading libraries take full advantage of the hardware and software available in modern logistics, in addition to using smart technologies such as cameras and sensors.

With OIKLS now serving as the Chair and Secretariat for the Council of Chief Librarians from 2017 to 2018, it is opportune for OIKLS to spearhead collaboration among Singapore's libraries, especially the university libraries.

We propose that OIKLS lead Singapore's universities to collaborate in setting up an off-site storage warehouse for shared use. This will help libraries maximise space usage in land-scarce Singapore, and open the possibility of sharing materials between libraries to minimise duplication and lower costs. The freed-up library spaces can be transformed into various types of new and novel user spaces to benefit students and alumni.

During the study trips, we learnt that many students appreciate access to specialised equipment, software and learning opportunities, such as those for digital publishing, film production, 3-D printing, or data analytics. These students may not be learning these subjects formally, and even if they do, they will not have access to the resources after their courses.

The Library can fulfil this need by using the space freed-up from moving books off-site to create a resource centre to serve students from all schools, providing facilities, hardware and software that they would otherwise find impossible to get on their own. We also learnt that setting up learning opportunities related to specific curriculum can add a lot of value for the students. For example, the Library can complement a programme on Entrepreneurship with events or activities on 3D-prototyping. The Library can complement a programme on Data Analytics with data visualisation tools and actual data for users to practice with. Such programmes and students' needs tend to be multi-disciplinary in nature, hence they will benefit the entire student population.

We also recommend that such facilities, equipment, events, activities or short courses be open to alumni to support alumni engagement and the national SkillsFuture movement. This embeds the University deeper into society, and generates more goodwill and pride amongst alumni, which could lead to donations directly for the Library, as seen in SNU and NTU's fundraising campaigns.

R2. Introduce and cultivate a new breed of researchers to support and stimulate cross-disciplinary research

In Taiwan, some of the subject libraries and librarians' headcounts are funded by individual schools. These subject librarians actively perform research alongside running library operations and providing reference services. In Korea and Taiwan, several librarians have PhD degrees, and librarians are encouraged to take MSc or PhD degrees. All these observations point to a strong and symbiotic relationship between the work of research and librarianship.

In line with one of the strategies proposed by the Committee on the Future Economy (CFE) on partnering each other to enable innovation and growth, we propose to create a new job role of *Researcher-Librarian (working title)* -- with these two professions coming together to leverage on each other's strengths. This is analogous to how NTU offers minor programmes for students, with the "minor" here for researchers as training in librarianship.

Researcher-Librarians will be trained to provide research advisory services, tapping on their expert domain knowledge. More importantly, they will learn a variety of resources from other subject areas and disciplines. As they provide services to library users (other researchers), they will be exposed to even more resources, methodologies, ideas, and different ways of thinking. This will stimulate more cross-disciplinary thinking and research in their role as researchers.

As a trial, we can create such jobs with headcount jointly funded by schools and the library. These researcher-librarians will work closely with a team of liaison librarians to serve the diverse needs among all users.

R3. Develop NTU SG's University archives and multimedia showcase

All the five universities that we visited have strong University Archives collections and showcases. Over at SNU, NTU, and Tsing Hua, the unit in charge of the University Archives is independent of the Library, who only collects the university's publications. However, all the libraries have a physical and multimedia exhibition of their University's history in the library (see Appendix A). At NTNU, the University Archives falls within the Library's purview, with a permanent exhibition just inside the entrance of the library. This excellent showcase comprises a mix of physical items and digitised content delivered through state-of-the-art multimedia technologies.

As a young and rapidly developing university who had just celebrated its silver jubilee, it is timely and useful for NTU SG to embark on building up our own historical collections. Permanent preservation and presentation of such collections will help to strengthen relationships with alumni and benefactors.

In addition, the process can benefit NTU SG in four ways. (1) It helps us to foster a stronger sense of shared identity among current students, faculty and staff. (2) It enhances record management policies and practices by encouraging administrative efficiency and economy in document creation, use, handling, control, maintenance and disposal. (3) It improves our ability

to retrieve key background information for strategic planning and decision-making. (4) It facilitates knowledge creation and circulation for leadership and marketing.

OIKLS should play the key role in collecting and providing access to the university archives, using our expertise on information organisation and management. NTU SG's University Archives can aim to collect, organise, preserve, promote, and provide access to significant documents and other materials that reflect the University's origins and development, from 1981 when NTI was established till the present.

NTU SG's University Archives will also be a permanent repository for university publications and records, historical documents, important figures' manuscripts and personal data, photographs, maps, audio/video, and websites documenting the intellectual, cultural, administrative and social life of the university. In addition to curating the University Archives, the Library can provide services that are connected or related to the University's history, such as research assistance, advisory and consultation, programmes, tours, exhibitions or talks.

Other Recommendations

R4. Implement system-allocated smart shelving (RFID) for books on-hold

As seen at Tsing Hua, books that are placed on hold will be sent to the RFID enabled shelves, and can be placed anywhere with an empty slot (See Appendix B). When a user arrives to pick up a book, he just needs to scan his library card and the system will automatically indicate the shelf where the book is housed via flashing lights. From the user's point-of-view, the experience is simple and fast. From the Library's point-of-view, the shelving system is very efficient with minimal manpower needed to use and manage the system.

R5. Adopt a Scheme of Job Rotation on a Regular Basis

Over at SNU, three IT technical staff are seconded to the Library for three years. In Taiwan, job rotation is practiced every four years, and even with rotation there is a strong sense of continuity. However, there are staff who are not rotated to sustain normal operations and to provide training for newcomers. Among the leadership there is a hand-holding period to ensure smooth transition.

Such rotation provide opportunities for staff to develop professionally, gain new skills and widen their perspective. At an organisational level, such rotation provide opportunities to review and enhance existing services or develop new initiatives. Cross-training staff on various job scopes also helps to develop resilience in coping with unforeseeable circumstances.

In addition to job rotation, it is common across all five universities to create project teams with members coming from different departments.

R6. Special collections development and utilisation

Special collections are treasured as the library's unique intellectual assets and the country's culture heritage, both in Korea and in Taiwan. The libraries we visited pay much attention to develop and promote special collections, which were collected by proactive soliciting or by donations from alumni and public.

Preserving, publishing and digitising the special collections are the principal activities for such special collections. The selection criteria for publishing or digitising are: Uniqueness, Preciousness and Relevance. The decisions are made either by librarians, or by cooperation among faculty/researchers and the librarians.

Given the context of Singapore, a small country with a short history, it is essential for academic institutions to collect and preserve Singapore-related or even region-related collections, such as famous local writers' or scholars' manuscripts, important local personalities or politicians' photos and correspondences, local historical documents, etc. By doing so, the library will not only build up rare collections with unique value, it will also help preserve the country's history and traditions.

Some libraries, such as SNU, NTU, and NTNU have utilised their special collections to design and develop creative cultural products such as file folders, notebooks, and paper clips. These products are sold as library's souvenirs, and they are also used as corporate gifts. To help offset some of the costs involved for developing and maintaining special collections, we could set up a commercial unit to design, produce and sell cultural or heritage products and services based these collections.

R7. Implement a one-card access policy (一卡通) to library collections for Singapore university libraries

Imagine this: staff and students from NUS, NTU, SMU, SUTD, SIT, SUSS and others can now borrow books from each other's' libraries. The immediate benefits to users are obvious: (1) Access to a wider range of materials, (2) Cost-savings from purchasing books on niche subjects can be channelled to other priorities, and (3) Faster access to materials. More importantly, it leads to better cooperation amongst the Universities, and can facilitate the eventual forming of a proper consortium. In Taiwan, the system has also been observed to create a reputation for the Universities that take part as being collaborative and socially engaged.

Learning Points

Teaching and Learning

- Library takes video recordings of all the information literacy (IL) workshops, public talks or events organised by the Library (Yonsei). Upon getting permission from the speaker, the video are uploaded online for online learning.

Research

- Scholars Gateway, Academic Hub and Knowledge Hub are integrated portals to highlight researchers' expertise, publications and achievements (NTU, NTNU and Tsing Hua). Besides adding visibility for scholars, this hub helps to promote inter-disciplinary collaboration and research within the university. In the future, librarians plan to provide research trends reports based on text mining and content analysis.

Technology

- We observed the use of various smart technologies and sensors:

- Facial recognition technology for authentication, in the locking and unlocking of electronic lockers (Tsing Hua)
- Sensors to detect for human presence to check for occupancy of all rooms (Tsing Hua). Security checking and closing of the library becomes more efficient.
- Access card authentication for switching on of power and lights, like in hotel rooms (Tsing Hua). This prevents unauthorised access and saves energy when the room is unoccupied.
- Most library spaces/facilities such as seats, rooms, equipment, etc. has to be booked online or on-site (SNU, Yonsei, Tsing Hua). There is a dashboard showing the live status of usage. Users know at a glance if seats are available.

Spaces

- Commonly observed are 24-hour study area/spaces independent from libraries' collection. Most notably, these spaces require minimal manpower to manage. Users get into these spaces room via access card (student/staff card). Security personnel are stationed at the entrances after office hours (NTU, SNU, Tsing Hua).
- Makerspace for digital products/services. For example, Yonsei University Library has professional film-making equipment and facilities. Such a setup provides multi-disciplinary tools and resources unavailable elsewhere to students. Classes on how to use such equipment are outsourced to vendors; and librarians are not expected to be experts on these equipment.
- Library spaces' design and concept are led by and conceptualised by architects with requirements and inputs coming from librarians (NTU). The architects also design the furniture. The results are beautiful and novel designs that are highly popular with the user community.

Collections

- Providing linked-data from booksellers, etc. in OPAC. Examples are Wikipedia, Amazon, Taiwan online bookshop (NTNU).

Archives

- University Archives and showcase—both physical and virtual. Some libraries (SNU, NTU) have dedicated physical collections/spaces targeted at alumni to create emotional bonds with the university. Some libraries create virtual exhibitions of significant events, e.g. University anniversary, using 3D/VR technologies to permanently preserve and to showcase the real events/exhibitions online (NTNU).
- Web archiving at NTU Library. Their web archiving is not limited to websites on NTU or Taiwan. The scope goes even beyond what the National Library of Taiwan does; and beyond what any other universities do. They will archive any website that they think is significant, university websites, selected Taiwan websites, even regional or global websites that relates to Taiwan.

Publishing

- Publishing House and Cultural Creation Centre under the library's purview (NTNU). The library selectively publish books on their special collections and creates cultural products based on collections, university history, or significant events.

Outreach

- Library promotion function is part of a bigger Service & Innovation Team (Tsing Hua).
- To align with the university's mission of serving the community and society, the Library regularly organises talks that are opened to the public. Various publicity channels are used to encourage public participation (Tsing Hua).
- Various reading promotions: physical / virtual, indoor /outdoor, librarian / professor recommendations. Examples include reading clubs, exhibition on current hot topics, theme-based book exhibitions, virtual book club/forum, Reading under the Blossoms (event based on the season), online book appreciation and sharing, etc. (Yonsei, Tsing Hua).

Human Resources

- At SNU, three IT specialists are seconded to the Library for a term of three years.
- Systematic job rotation at Taiwan universities. Up to a third of staff could get rotated every four years. The job relocation is based on a combination of personal aspiration and organisation deployment; there is a hand-holding period to ensure smooth transition.
- Professional development are mainly based on on-the-job training, self-learning, attending workshops regularly organized by the local library association, study trips to other libraries, etc. (Taiwan libraries)
- Hiring of specialists, e.g. curators, programmers, designers within the library at all five universities.

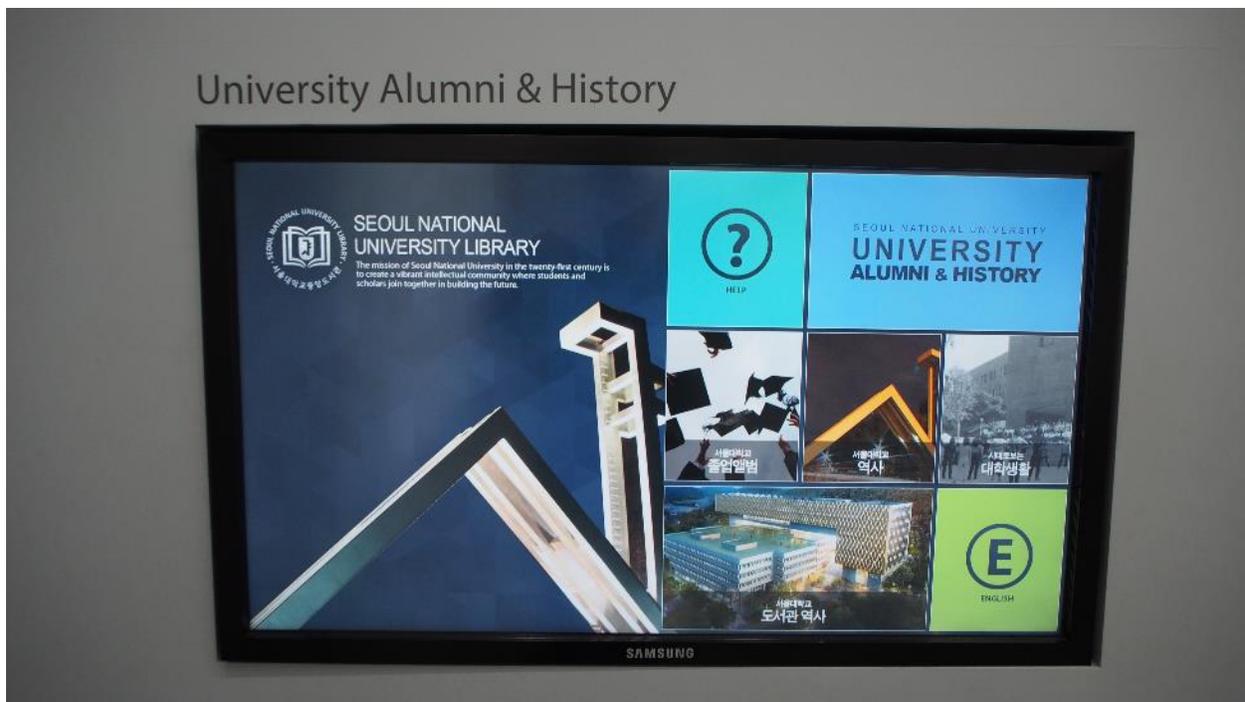
Appendix C shows a list of our key contacts and areas in which we were interested to learn more.

Prepared by:

Ruan Yang
Vincent Wong
Law Loo Shien
March 2017

APPENDIX A: UNIVERSITY ARCHIVES SHOWCASES

University History & Timeline at Seoul National University Library



Figures 1 and 2. The touch screen PC shows each school's yearbooks and alumni's records. The timeline shows different presidents, presents their biography and contributions to the university alongside audio and video contents.

NTU Collected Works at National Taiwan University Library 台大人文库



Figure 3. This collection houses all the books published by NTU's staff or alumni to showcase the university's achievements. The collection was built and developed up by the library through donations.

Exhibition on University History at National Tsing Hua University Library



Figure 4. Exhibition on Tsing Hua's History highlights the university's milestones, key figures, achievements and future directions. It is an attractive way for staff and students to appreciate the university's origin, history and glory.

University Archives Showcase at National Taiwan Normal University



Figure 5. Visitors to the Library are immediately greeted with this attractive exhibition.

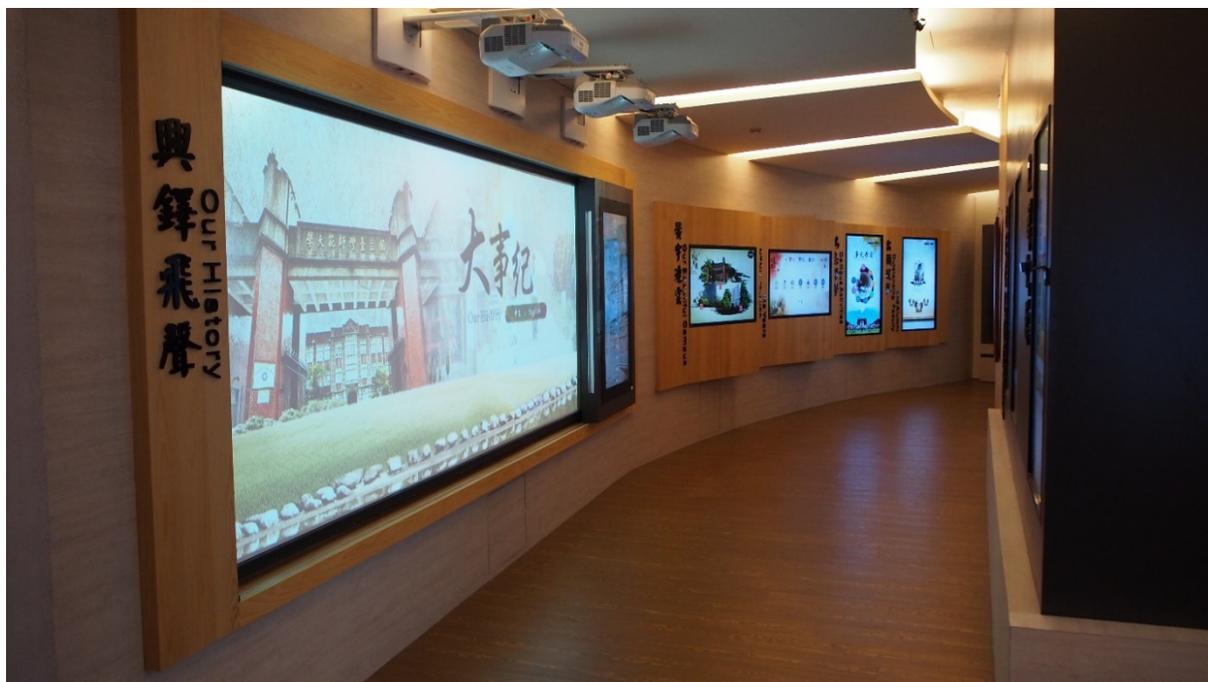


Figure 6. The exhibition uses advanced multimedia technologies to highlight the origin, significance and development of NTNU.



Figures 7 and 8. These are display cabinets with a see-through touch-screen that allows for user interaction. Users can read more content by moving virtual pages on the touch-screen, moving them around, flipping them, and zooming in-and-out with surprising ease. The see-through feature adds visual depth to the exhibits. We see how a small space can present a lot of information.

APPENDIX B: SMART SHELING SYSTEM AT NATIONAL TSING HUA UNIVERSITY



Figure 9. User scans their card, and the system automatically retrieves their hold records.



Figure 10. RFID technology will find where the book is housed, and users are directed to the correct shelf via flashing lights. In less than a minute users get their books, borrow and leave the library premises. When library staff need to put books back on the shelf, they just need to find an empty slot. There is no need to refer to any shelf label or to shelf the book in any particular order.

APPENDIX C: KEY CONTACTS

South Korea

Contact	Remarks
<p>Seoul National University Library (SNU)</p> <p>Professor Sung-Gul Hong General Director, Professor, Department of Architecture sglhong@snu.ac.kr</p> <p>Ms Chung, Goojin Office of Library Planning & Communication gijung@snu.ac.kr</p>	<p>The Friends of the SNU Library campaign launched in 2012 raised more than 100 billion KRW (~SGD125 million) for building a new facility with high-end technology.</p>
<p>Yonsei University Library (Yonsei)</p> <p>Mr Jung Woo Lee Vice President for Library / CIO Director, Centre for Work Science Professor, Graduate School of Information Yonsei University jlee@yonsei.ac.kr</p> <p>Ms Susan Beom Librarian, Public and Research Services griume@yonsei.ac.kr</p>	<p>Yonsei is embarking on building more makerspaces for students, in particular to promote entrepreneurship.</p>

Taiwan

Contact	Remarks
<p>National Taiwan University Library (NTU)</p> <p>Professor Kuang-hua Chen University Librarian, Professor, Department of Library and Information Science, President, Interlibrary Cooperation Association khchen@ntu.edu.tw</p> <p>Mr Min-chang Cheng Division Director, Library Extension Services Division meisho@ntu.edu.tw</p>	<p>NTU will use robotics technology in their new library warehouse that is setup underground in a new building on campus.</p>

<p>National Taiwan Normal University Library (NTNU)</p> <p>Prof Hao-Ren Ke University Librarian, Professor, Graduate Institute of Library & Information Studies clavenke@ntnu.edu.tw</p> <p>Chi-Huang Li, Ph.D Professor, Department of Chinese; Associate University Librarian, Director of NTNU Press alvinntnu@ntnu.edu.tw</p> <p>Ms Chih-Hwei Lu, Ph.D Director of Dept. of Reference and Extensions chlu@ntnu.edu.tw</p>	<p>Their University Archives was previously an independent department. It is now under the Library's purview. The University Press is also the Library's purview.</p>
<p>National Tsing Hua University Library</p> <p>Fu-Ren Lin, Ph. D Professor, Institute of Service Science Director, University Library Head, The Preparatory Office NTHU Museum frlin@mx.nthu.edu.tw</p> <p>Ms Chwen-Huey Yu Chief, Service and Innovation Division chyu@lib.nthu.edu.tw</p> <p>Ms Jui-Chuan Huang Chief, Administration Division rjhuang@lib.nthu.edu.tw</p>	<p>Their Services and Innovation Division aims to develop services not just for students and faculty, but also for the general public.</p>