

# Innovate and Integrate: Key Trends and Developments in Library Technical Services

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Make today matter



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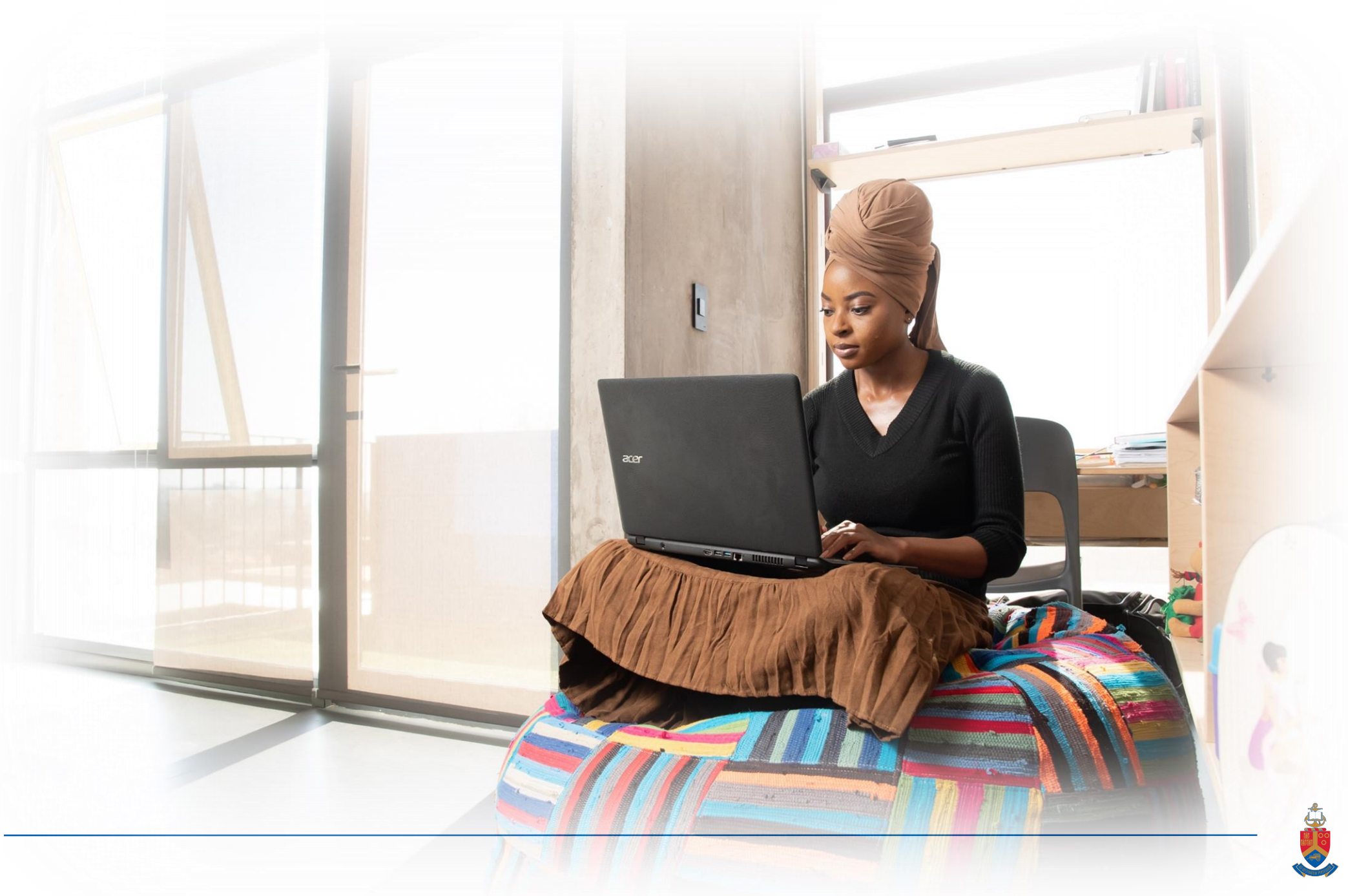


PLEASE EXCUSE  
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# Introduction



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# Agenda

- General trends in libraries
- Impact of trends on cataloguing or technical services
- Examples of current projects



# Reports

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- ACRL (Association of College and Research Libraries)
- OCLC (Online Computer Library Center) Research Reports
- Ithaka S+R Research
- EDUCAUSE Center for Analysis and Research (ECAR) - Horizon Report (Teaching and learning)
- Project Information Literacy (PIL)
- Pew Research Centre
- Recent publications in core library journals (e.g., Annual Review of Information Science and Technology; Aslib; Information Research; JASIST; Journal of Documentation; Journal of Information Science; Journal of Librarianship and Information Science; Knowledge Organization; Library & Information Science Research; Library Quarterly Journal of Academic Librarianship, Library Journal)



# Space utilisation

- **Relooking physical spaces**
  - Challenges regarding balancing with capital budgets
  - Collaborative spaces vs. spaces for intensive academic work
  - More nuanced patron needs – variety of spaces with different acoustical, privacy, and technology needs according to the work undertaken
  - Layouts or space configurations aligned with current service needs and are more activity-based rather than based on type of occupant or user (flexibility)
- **Examples of new spaces:** meditation or prayer rooms, gender neutral/inclusive bathrooms, specially designed lactation rooms and family-friendly spaces, and bike desks or “activity-permissive workstations”
- **Examples of smaller changes:** providing charging stations for cell phones and iPads; private spaces for virtual job interviews or presentation practice space; and information on seating availability on library websites



# Space utilisation - Off-site storage facilities

- Space Constraints
- Collection Growth
- Preservation



# Implications for cataloguers

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- **Access and Discovery:**
  - Cataloguers must ensure that materials stored offsite are still easily discoverable and accessible through the library's catalogue, often necessitating enhanced metadata and clear location information.





# Example

## University of Pretoria Collections projects



Before



After



# Collections: Digital Transformation

- Expanding electronic resources
- Digitising collections
- Adopting new technologies to enhance access and user experience, e.g., offering e-books, online journals, and digital archives



# Collections: Collaborative collections and growth of shared print

- Collaboration between institutions around shared print as a result of changing usage, limited funding, and space constraints
- Shared print programs initially focused on journal collections, but evolved to include print monographs
- Collaboration around shared print infrastructure intended to develop standards, workflows, and tools to support collaborative efforts and embed shared print work into the lifecycle of collection development and management
- Controlled digital lending (CDL) is an emerging trend where libraries “circulate temporary digital copies of print books they own in a one-to-one ratio of ‘loaned to owned,’ removing the print copy from circulation while the digital copy is in use.”
  - argue that reasonable interpretation of copyright law should insulate libraries from legal exposure



# Implications for cataloguers

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- **Collaborative Cataloging**
  - Cataloguers need to work closely with partner institutions to ensure consistency and accuracy in bibliographic records across shared print collections.
- **Metadata Standards**
  - There is increased emphasis on adhering to shared metadata standards and best practices to facilitate resource sharing and discovery.
- **De-duplication and Record Merging**
  - Cataloguers must manage de-duplication efforts and merging records from different institutions, which requires meticulous attention to detail.



# Example:

- The Big Ten Academic Alliance (<https://btaa.org/about>)
- The University of California Libraries
- The Canadian Collective Print Strategy Working Group



# Open everything

*OA continues to be a focal point for academic librarians and administrators*

- Open access (OA) movement remains important
  - Challenges:
    - Economical - “landscape of scholarly communication is characterized by increasing costs and limited access to research output”
    - Lack of OA policies regarding OA scholarship, data, and open educational resources
    - Gray literature
- “Big Deal” cancellations
- Transformative agreements - ” which promote open access publishing by their authors BUT still allow those authors to maintain copyright”
- Role of libraries in Open Educational Resources (OER)
  - Creating platforms to host and curate OER collections
  - Collaborating with faculty to integrate OER into curricula
  - Providing guidance on copyright and licensing issues



# Implications for cataloguers

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- **OA Metadata:**
  - Cataloguers must be familiar with metadata standards specific to OA resources, ensuring proper tagging, discoverability, and accessibility of these materials.
- **Repository Management:**
  - Cataloguers often take on roles in managing institutional repositories, requiring skills in metadata creation, data curation, and digital preservation.
- **Rights Management:**
  - Understanding and cataloguing the legal aspects of OA, including licensing and copyright information, is critical for ensuring compliance and user awareness.



# Technology: Spaces and access

- **Maker Spaces** with merging technologies such as 3D printers, virtual reality tools, and robotics – encourage creativity, experimentation, and interdisciplinary collaboration
- Digital media labs
- **Accessibility Technologies** ensuring that library resources and services are inclusive and accessible to all
  - Examples:
    - screen readers
    - captioning systems
    - text-to-speech software
    - adaptive devices





# Technology: Artificial intelligence (AI)

- Examples of AI that facilitates search and discovery:
  - Pattern recognition
  - AI-powered text recognition
  - Transcription
  - Content recommendations
  - Searching of historical documents
- Adoption of AI in virtual reference services (e.g., AI-powered chatbots)
- Adoption of AI in subscription databases and information resources (e.g., Scopus AI)
- AI algorithms to assist in data analysis
- Attempts to automate standard library operations, such as cataloging, through expert systems have focused on simpler tasks like descriptive cataloging



# Implications for cataloguers

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- **Automated Descriptive Cataloguing**
- **Metadata Generation**
  - AI can automatically generate metadata for new acquisitions, reducing the manual effort required for descriptive cataloguing.
- **Dewey Decimal Classification**
  - AI can assist in assigning Dewey Decimal numbers or other classification codes to resources, ensuring consistency and accuracy.



# Example of AI in LTS:

## National Library of Norway

- The National Library of Norway uses AI methods to automatically group articles and assign Dewey Decimal numbers. This AI-driven approach streamlines the cataloging process and ensures that materials are categorised efficiently and accurately.



# Technology: Other

- **Virtual and Augmented Reality (VR/AR)**
  - Examples:
    - Virtual tours of library spaces, historical sites, and archives
    - Overlaying digital information onto physical objects and spaces
- **Internet of Things (IoT)**
  - Examples:
    - Smart shelves with embedded sensors that provide real-time inventory management
    - Automated check-in/check-out systems
    - Location tracking for misplaced items
    - IoT-enabled environmental monitoring systems to assist in maintaining optimal conditions for preserving delicate materials



# Example of Virtual and Augmented Reality (VR/AR):

XR Toybox at the Health Sciences Library, University of Pretoria



# Technology: Other

- **Mobile Applications**
  - Provide users with easy access to library resources and services
  - Processes and workflows
- **Technologies for digital preservation and archiving** to safeguard digital collections for long-term access
  - Examples:
    - implementing robust storage systems
    - metadata management tools
    - digital asset management systems
- **Cloud Computing and Infrastructure** offers scalability, cost-effectiveness, and remote accessibility, allowing libraries to expand their digital collections and services without significant infrastructure investments



# Example of Mobile Application

Digby App – OCLC WorldShare Management Services (WMS)



# Data

- Increased challenges with the surging interest in big data (e.g., training skilled employees, increase repository capacity, assign and clarify responsibilities)
- Research data management services in libraries and alignment of skill development programs
- Data mining - linked to the Internet of Things (IoT)
- Knowledge discovery in databases are paving the way to make data increasingly more meaningful
- Data analytic methods constantly changing with the ever-increasing volume of data generated
- Cloud based AI activities - greater capacity “to store data in a cost-effective manner and glean more actionable insight from IoT data”
- Data curation remains an overarching role for the library - active curation
- Growing interest in data science education and data librarianship to strengthen practices to support preservation and access, and broaden their professional horizons by gaining a greater awareness with multidimensional problems of working with data
- Growing prominence of data visualization – also in terms libraries seeking to tell their own story, including assessment, value of the library, collection analysis, and internal capacity building
- Linked data





# Implications of linked data for cataloguers

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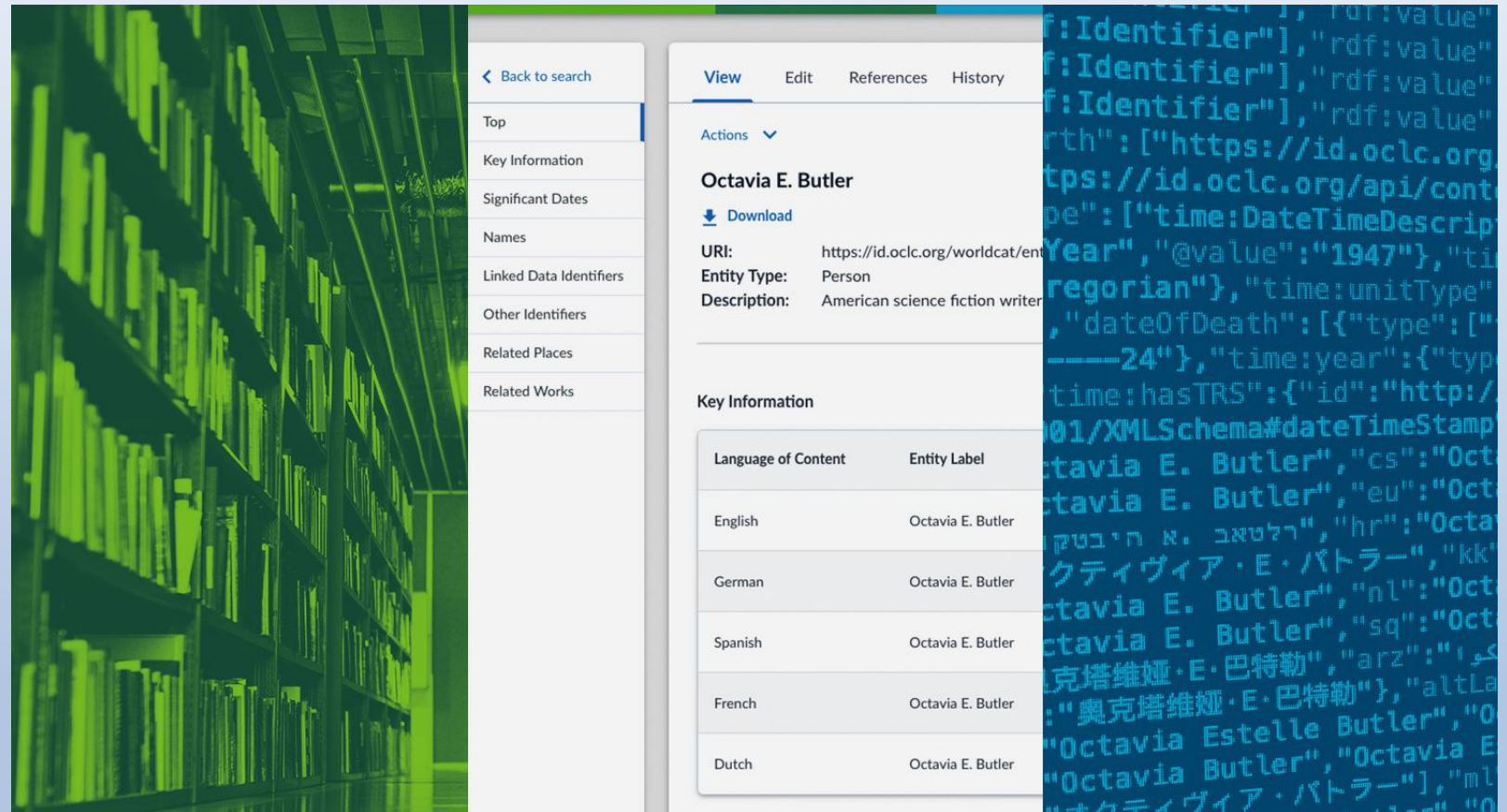
- **Transitioning from traditional MARC records to linked data formats, e.g., BIBFRAME**
  - Developed by the Library of Congress, BIBFRAME replaces the MARC format to better support linked data. Libraries implementing BIBFRAME can connect their records with other linked data resources on the web, providing richer context and improved search capabilities.



# Example Linked Data:

## OCLC Meridian

OCLC Meridian® is an intuitive web application and set of APIs that allows libraries to create, curate, and connect linked data entities. Enrich your metadata by creating connections to existing values in MARC records and other datasets across the global information ecosystem.



The screenshot displays the OCLC Meridian interface for the entity Octavia E. Butler. On the left, a sidebar menu includes options like 'Back to search', 'Top', 'Key Information', 'Significant Dates', 'Names', 'Linked Data Identifiers', 'Other Identifiers', 'Related Places', and 'Related Works'. The main content area shows the entity's name, a 'Download' button, and metadata such as 'URI: https://id.oclc.org/worldcat/entities/...', 'Entity Type: Person', and 'Description: American science fiction writer'. Below this is a 'Key Information' table listing the entity label in various languages.

Language of Content	Entity Label
English	Octavia E. Butler
German	Octavia E. Butler
Spanish	Octavia E. Butler
French	Octavia E. Butler
Dutch	Octavia E. Butler



# Critical librarianship

- An approach to librarianship that focuses on critically examining and challenging traditional library practices, structures, and systems in order to promote social justice and equity. It seeks to address the ways in which libraries can reinforce or perpetuate existing power imbalances and inequalities.

## *Key aspects:*

- Challenging dominant narratives
- Promoting information equity
- Advocacy and activism
- Reflecting on professional practices



# Example of involvement in Critical Librarianship:

## LIASA IGBIS

- South African Cataloguing Code of Ethics Task Team (CETT)
- Metadata for the development of local taxonomies toward Africanisation
- Other initiatives by LIASA
- Decolonising collections – Collection Development Policy



# Contributions to the Sustainable Development Goals

How libraries are contributing to the SDGs



**SUSTAINABLE  
DEVELOPMENT  
GOALS**

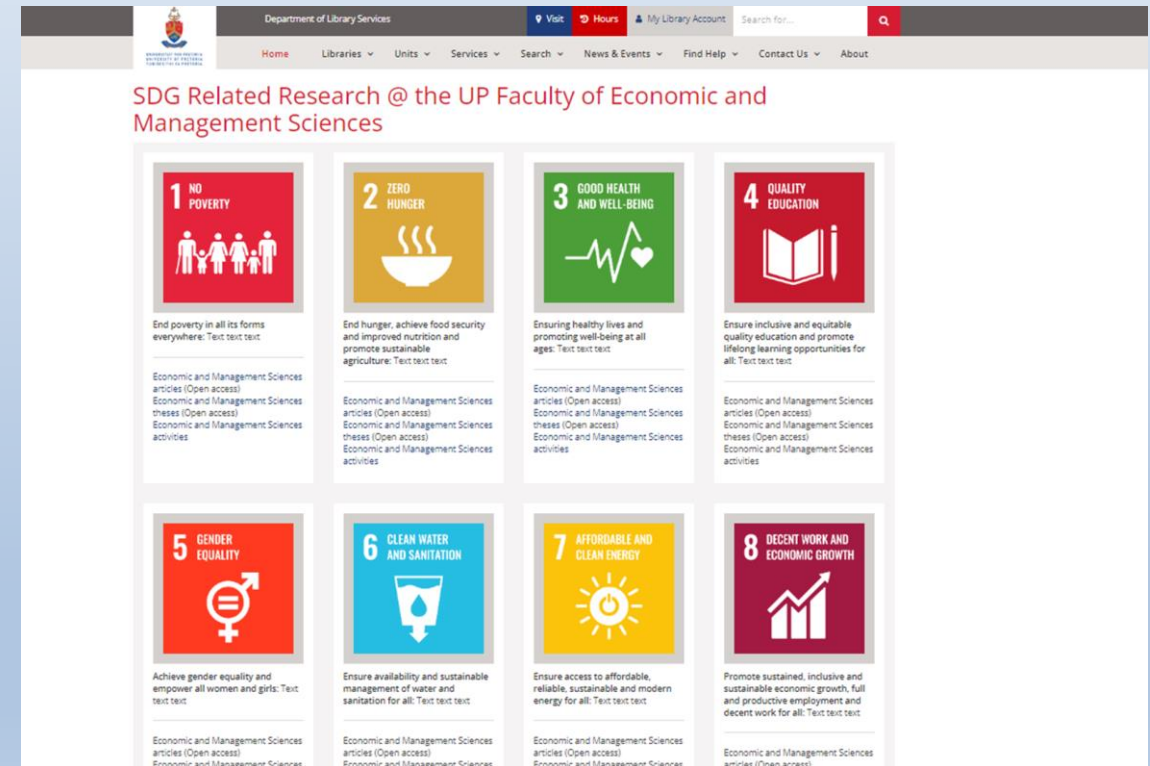
- Eliminating poverty and ending hunger (SDGs 1 and 2)
- Promoting lifelong learning (SDG 4)
- Facilitating digital inclusion (SDG 9)
- Strengthening cultural preservation (SDG 11.4)
- Supporting global cooperation (SDG 17)



# Example of how cataloguers can directly contribute to the SDGs

Nel, M.A., Makhera, P., Moreana, M.M. and Maritz, M. (2024), "Linking faculty research output and activities to sustainable development goals: opportunities for metadata specialists", *Digital Library Perspectives*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/DLP-01-2024-0015>

- Project to facilitate the discoverability and retrieval of UP's evidence on the SDGs:
  - Tagging metadata of articles, theses and activities to link to the SDGs
  - Publish the links to the items on a central platform (Subject guide)



# Conclusion



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# Thank You



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