



# RESKILLING AND UPSKILLING LIBRARIANS AND RESEARCHERS FOR OPEN SCIENCE

Presented by Dr Pamela Abbott  
Senior Lecturer  
Information School  
University of Sheffield, UK



# AGENDA

- Situating openness
- Role in LIBSENSE
- Motivation from LIS literature
- Skills Profiling in LIBSENSE

# OPENNESS IN RESEARCH

The terms **open science**, **open scholarship** and **open research** are used interchangeably to signify a movement towards open and collaborative approaches to the “doing” of science

The idea of **openness in scientific endeavour** is not new, what is new is the ready availability of technologies that can enable this to happen

Information and communication technologies (ICTs) are deemed to have affordances that enable the **transparency, reach, capacity to share, computational power** etc. that allow the tenets of openness to be realised:

- E.g. Open data – allowing for the sharing of data through open standards, shared platforms
- E.g. Open access – allowing for the sharing of published knowledge through digitization of published outputs
- E.g. Citizen science – allowing citizens to access sophisticated data gathering and reporting platforms

# LIBSENSE AND OPEN SCIENCE

LIBSENSE espouses a vision for **open science as an ideal future** for research and education in Africa

My role in LIBSENSE has been to coordinate research activities in the projects run by the initiative

In 2018-19, I led a 3-region survey in 3 REN areas, East and Southern Africa, West and Central Africa and Northern Africa (n = 323, 23% response, 61% management roles)

From the results it was clear that if open science/open research was an ideal future for African higher education, then....

- **LIS skills in African HEIs would need rethinking and reframing for this future**
- **Skills profile development workshops were undertaken**

# RESKILLING THE FUTURE LIBRARIAN IN AN AFRICAN HEI CONTEXT

Key aspects to address include:

- **Education** through the development of curricula in LIS schools and affiliated academic departments
- **Training** through CPD – capacity building through on-the-job training and development, linking to lifelong learning cycles
- An understanding of what **role the academic library will play** in the remit of HEIs in the sector
  - Training institutions?
  - Research institutions?
  - Development-oriented institutions?
  - Community engagement institutions?
  - Post-COVID institutions?
  - Combinations of all the above?

# LIBRARIANS FUTURE ROLES — FROM THE LITERATURE

Existing literature reveals some key future roles for academic librarians

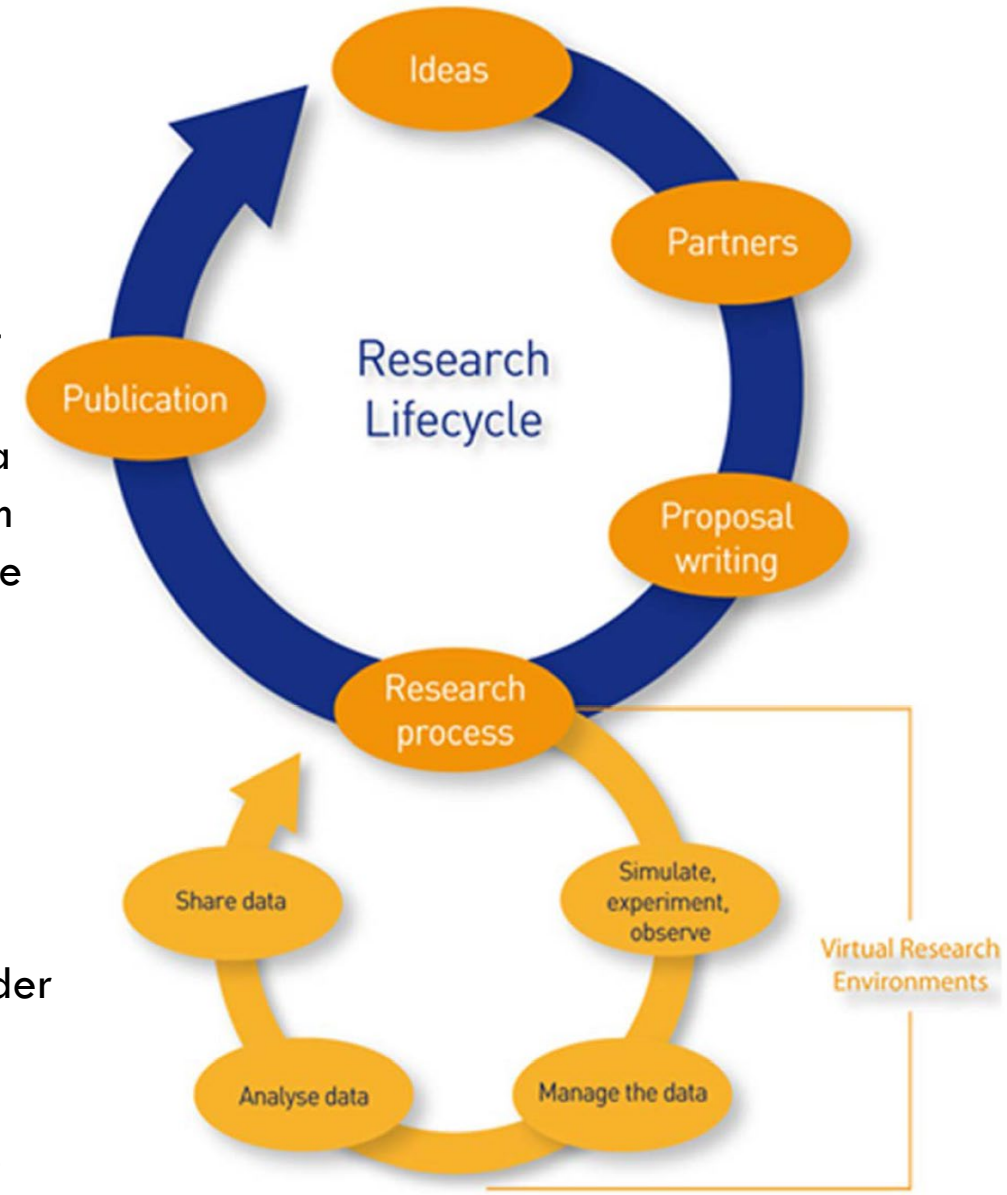
- Data-related (various forms of data management and analytics)
  - Research data management (e.g., *Schmidt et al., 2016*)
  - Data stewardship (e.g. *EOSC FAIR Data Stewardship Skills*)
  - Data scientist (e.g. *Whyte et al., 2019*)
- Research-related (supporting research teams)
  - Embedded librarians (e.g. *Shumaker, 2009*)
- Embedded roles (e.g. *Cox & Corrall, 2013*)
- Soft-skills focused (management, negotiation, communication, marketing) (e.g. *Raju, 2014*)
- Open platform/services related (supporting open access/data/science) (e.g. *Ayris & Ignat, 2018*)
- Scholarly communications and publishing (e.g. *Brown et al., 2015; Gwyer, 2015*)

# RESEARCH LIFECYCLES & THE LIBRARIANS' ROLES

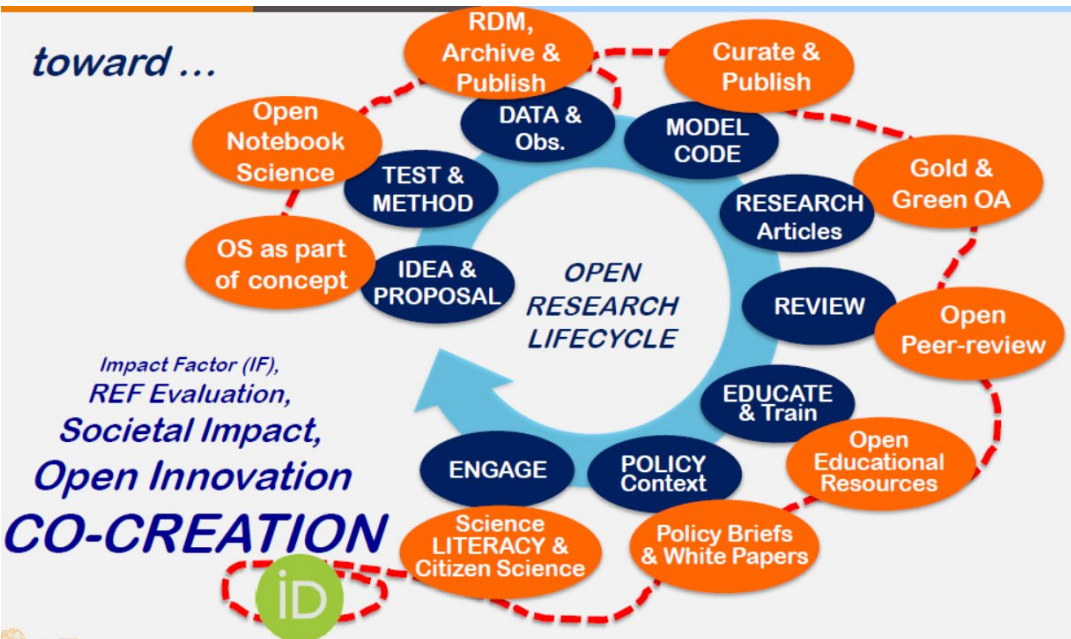
Librarians will be expected to support all aspects of the research lifecycle and increasingly those aspects that are 'online', 'digital', 'virtual' or 'open'.

There is also an increasing emphasis on the 'data' aspect of these support services that cover a range of needs from 'management' at one end to 'analytics' at the other.

This opens up the librarians' competencies and capabilities to a wider range of skills and knowledge as captured by various scholars in the literature.

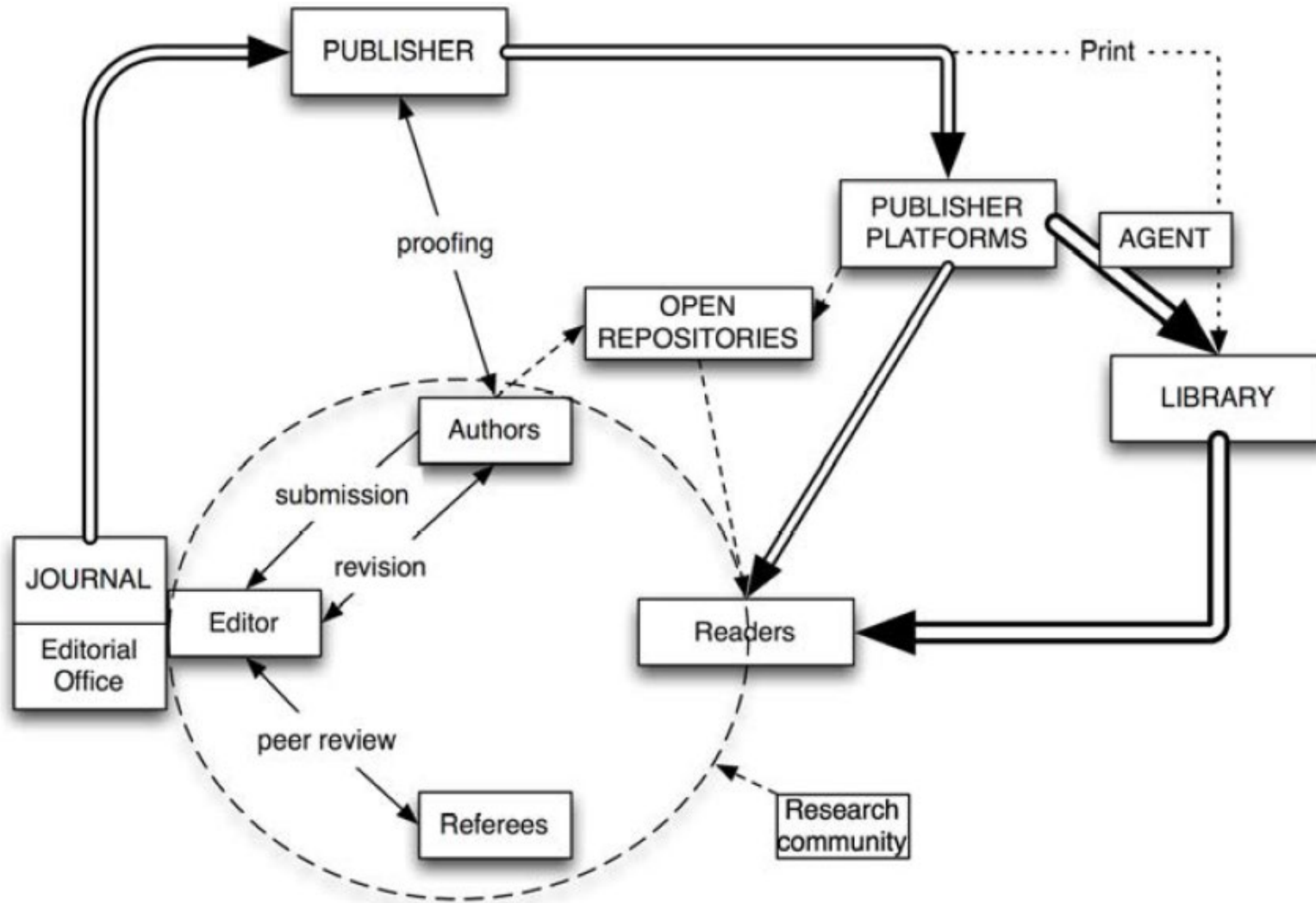


JISC Research and Data Lifecycle  
Reproduced from Tenopir et al. (2011)



Open Research Lifecycle Reproduced from  
(Grigorov et al., 2016)

# Publishing Lifecycles & the Librarians' Roles



Reproduced from the 2018 STM Report (Johnson et al., 2018)

The library's **traditional role** is that of a player in the scholarly communications system, i.e., part of the 'knowledge' supply chain. Libraries are distributors of the outputs of publishers.

The library accomplishes this through a **subscription-based business model** which depends on functioning **library consortia**.

The advent of **digital platforms** and the **open movement** is challenging this existing role. Libraries can become publishers through open platforms like OJS, acting on behalf of research institutes and universities, i.e. libraries occupy a different part of the 'knowledge' supply chain, producers of knowledge.

Libraries then engage in **a larger portion of the publishing lifecycle**, from knowledge production to knowledge discovery.



# A PLACE FOR HYBRID ROLES?

The need for practical technical skills, or not? (Read & Cox, 2020)

- Softer skills needed rather than practical technical skills
- Socio-technological competence more desirable

Cox and Corrall (2013) refer to a specialist informationist hybrid role between librarianship, scholarship, and computer science

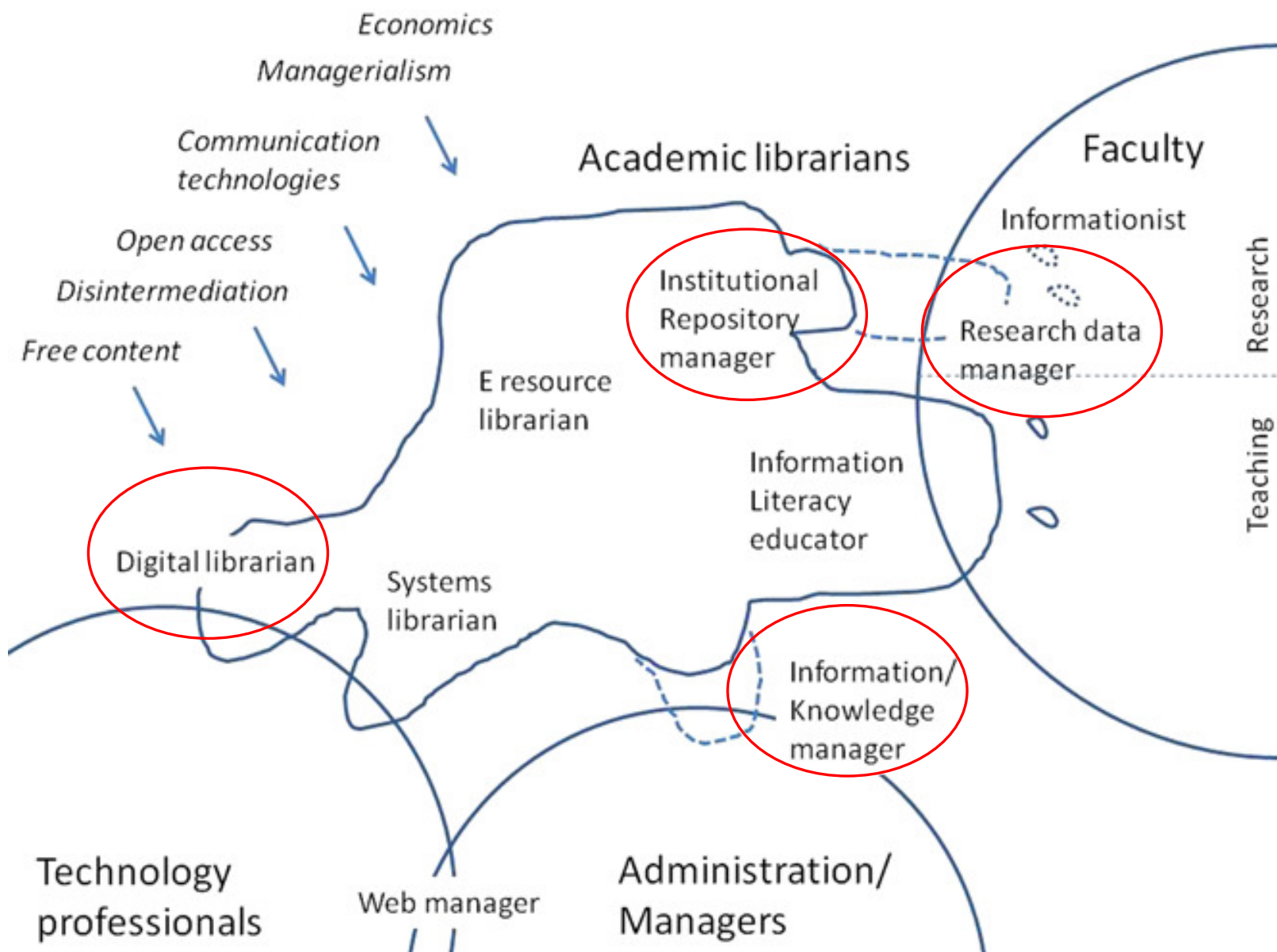
Other 'hybrid' roles examples come from training programmes in informatics and 'data science' type competencies, e.g. in iSchool programmes (Riley-Huff & Rholes, 2011)

***Open 'research' roles seem to specialise into distinct sets of skills around 3 domains***

(generic skills overlap, but specific skills are more narrow):

- OA, repositories, and RDM (Pontika, 2019)

## Evolving academic library specialties (Cox & Corral, 2013)



This map demonstrates where 'hybrid' roles may develop for evolving academic libraries.

Some key roles are identified that reflect the feedback obtained in the LIBSENSE survey and other trends in the literature.

A key question that emerges is the extent to which these 'hybrid' roles address library-specific services, tasks and activities and vs. a movement to more technical specialisms, e.g. web development, software development, network engineering, etc.

# *LIBSENSE FEEDBACK ON THE EVOLVING HEI LIBRARIAN ROLE*

General aspects of the evolution of the role

These themes are the ways in which you see your role as a whole changing and evolving

Translating the *traditional role* of the librarian into a "digital" form

Playing the role of *intermediary, boundary spanner, focal point, community builder*

Adopting *leadership or influential roles* within the institution or externally

Being *technically competent* and able to train others in such competencies

Having *multiple roles or blended roles*

Strong *training and education role*

Strong *research support role*

Being *knowledgeable on open platforms and services*

Understanding the *HLL context*, the *scholarly communications process*

Having an *advocacy and promotional role*

# *LIBSENSE FEEDBACK ON THE EVOLVING HLI LIBRARIAN ROLE*

## General characteristics of the evolving HLI librarian

Adaptability and versatility

Good at collaboration

Good at communication

Continuously learning

Highly experienced

Possessing critical thinking skills

## Barriers to the evolution of the HLI librarian

Role not respected

Role not valued

Role not influential

Lack of support to develop professional skills

# LIBSENSE FEEDBACK ON THE EVOLVING HEI LIBRARIAN ROLE

- Archivist
- Curator
- Collection developer

**Specialist Traditional Roles**



- Social media expert
- Knowledge manager
- Information manager

**Information & Knowledge /Media Roles**



- Lobbyist
- Marketer
- Advocate
- Financial expert
- Procurement expert
- Mediator

**Management /Influencing /Brokering Roles**



- Digitization experts
- Open Access Expert
- Digital repository expert
- Content manager
- Metadata services librarian
- Publisher

**Digital Publishing /Knowledge Discovery Roles**




 Future roles related to specialist librarian functions.

 Future roles related to specialist technical areas.

- Trainer/educator
- Educator
- Curriculum developer
- Facilitator

**Education /End-user Engagement Roles**




- Technician
- Information platform designer

**Technical Roles**



- Digital marketer
- Blended librarian
- Embedded librarian
- Innovator
- Value-added service provider

**Blended/New Roles**



- Research Data Manager
- Researcher
- E-research librarian
- Meta researcher

**Research-related Roles**



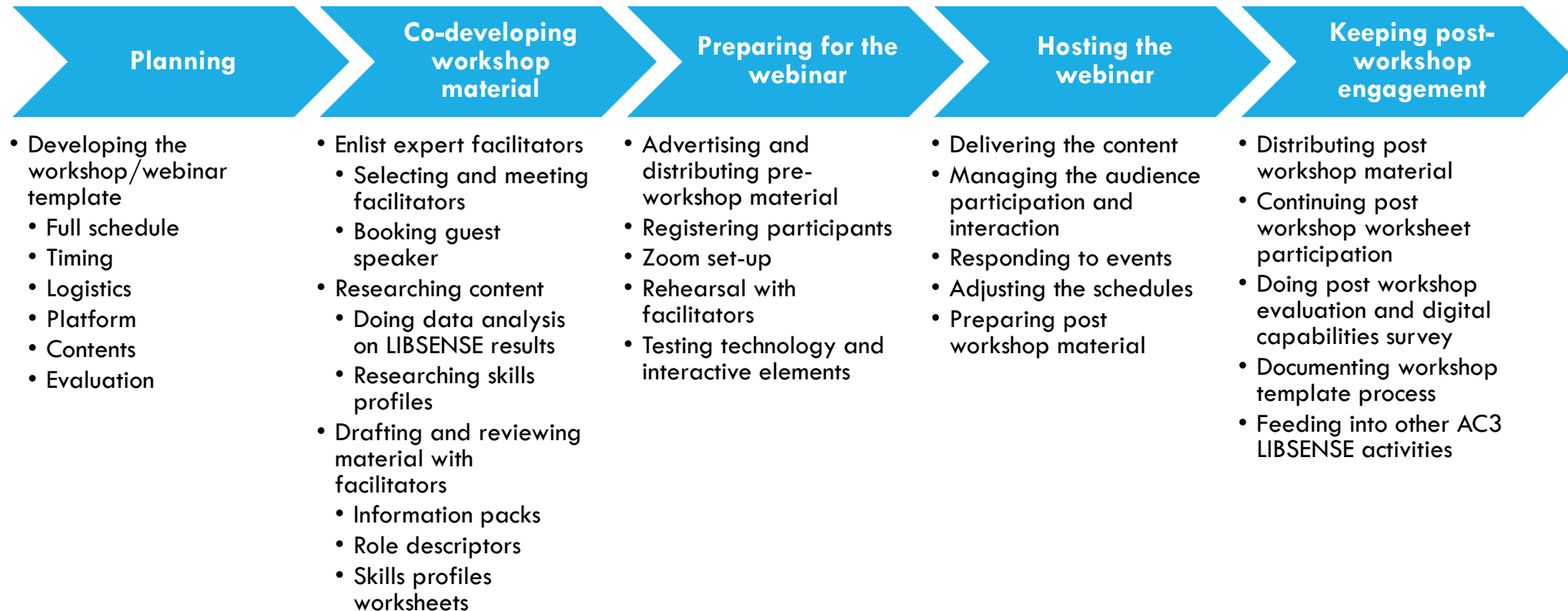
 Future roles more oriented towards 'soft' skills and non-traditional non-technical areas.

 Future roles more oriented towards open services /scholarship.



# SKILLS DEVELOPMENT WEBINAR PROCESS — 8-WEEK TIMELINE

A participatory co-development process





# SAMPLE MATERIALS

## Skills Profiles Development Webinar Role Description (Guide for Facilitators)

### 3. Metadata Librarian

This role involves supplying structured descriptions and metadata for resources (such as books, articles, maps, images and objects) to enable service users to find what they need.

#### Potential KSAOs<sup>1</sup>

Knowledge of:

- Cataloguing and metadata standards such as MARC21/MARCXML, AACR2, Dublin Core and RDA; controlled vocabularies.
- If necessary, a particular language or subject area
- Knowledge of metadata harvesting protocols like OAI-PMH

Ability to:

- Create and remediate metadata for open access resources striving to make open access materials findable and accessible
- Ensure and monitor metadata quality on an ongoing basis
- Train and assist librarians and researchers who are creating metadata for digital objects
- Strategizing for and implementing means by which metadata can better advance open access goals and improve tools
- In consultation with others, strategize for optimising the metadata in the institutional repository and its subsequent integration with other discovery tools
- Promote and implement persistent identifiers for researchers and resources to support search precision/recall, identification of missing content, measures of scholarly output, etc.
- Provide strategic and innovative leadership for metadata services
- Train and mentor cataloguing staff through changes in library technology

*A sample 'Role Descriptor' document for Metadata Librarian*

## Skills Profile Worksheet

Group Number: 3

Facilitators: Mr David Bukenya

Group Members <List held with facilitator>:

#### Aims:

To discuss evolving skills profiles of African HLI librarians using feedback generated from the LIBSENSE workshops in 2018/19 and to determine a set of preferred skills profiles to support ongoing digitalization (e.g. OAR development, data analytics, support for Open Science) that suit an African HLI context.

#### Key objectives:

- Stimulating discussion around the topic through content that is a mixture of LIBSENSE outputs, African scholars/librarian professionals and the workshop participants
- Providing feedback and input into capacity development areas of the LIBSENSE activities under AfricaConnect3

<b>Library Service(s):</b>	<b>Digital Collections/Institutional Repository/Research Data Management</b>
<b>Identified Role:</b>	<b>Metadata Librarian</b>

#### Role definition:

This role involves supplying structured descriptions and metadata for resources (such as books, articles, maps, images and objects) to enable service users to find what they need.

#### Potential skills areas: [10 minutes to brainstorm]

Librarian-focused Skills (Skills areas that are normally associated with library staff, are socio-technical or hybrid, or are 'soft skills')	Technical Skills (Skills areas normally associated with an IT department or an IT specialist)
<b>Analytical skills (Entity identification)</b>	<b>Computer skills (Basic, Internet use, Systems administration...)</b>
<b>Metadata standards (cataloguing, descriptive standards)</b>	<b>Metadata creation/production (Data entry, mapping)</b>
<b>Process/workflow and rules designer</b>	<b>Metadata clean up (eg. Open refine)</b>

*A sample interactive 'Skills Profile Worksheet' document for Metadata Librarian*



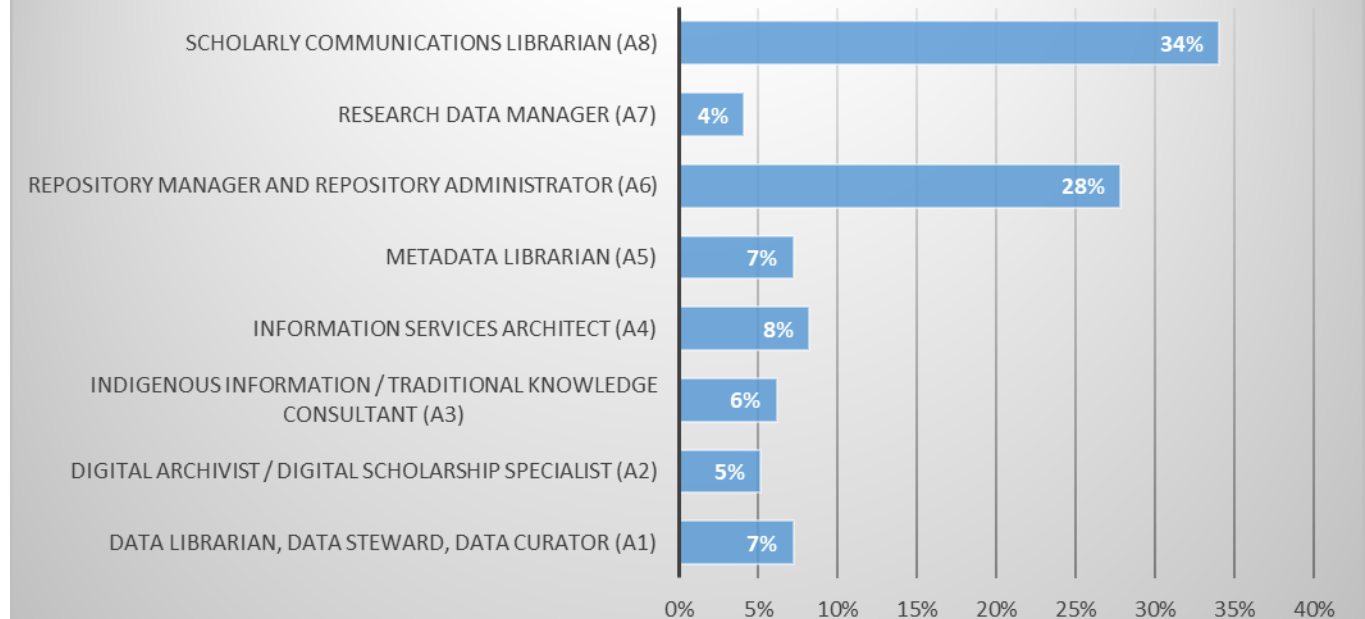
# WEBINAR SKILLS PROFILES

## 8 Role Descriptors Identified:

1. Data Librarian, Data Steward, Data Curator
2. Digital Archivist / Digital Scholarship Specialist
3. Indigenous Information / Traditional Knowledge Consultant
4. Information Services Architect
5. Metadata Librarian
6. Repository Manager and Repository Administrator
7. Research Data Manager
8. Scholarly Communications Librarian

*In consultation with the expert facilitators, this list of 8 relevant role descriptors were drawn up and discussed in the workshop.*

## Attendee Interest in Role Descriptors



*The greatest interest was in the roles 'scholarly communications librarian' and 'repository manager/administrator'.*

# SKILLS PROFILES DEVELOPMENT FRANCOPHONE WEBINAR

Representation from the following countries:

- Benin, Cameroon, Côte d'Ivoire, Senegal, Burkina Faso, Mali

Reports on the following:

- Ongoing projects related to developing digital skills for open access/open science
- Deficiencies/existing problems hampering progress
- Suggestions for planned actions to address these

Main issues identified lie around:

- Infrastructure, capacity-building and policy
- Lack of institutional supports

Plan:

- To use the reports to frame Francophone-focused skills development webinars in consultation with key facilitators from the above-named countries

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