

# **Towards improved access to scientific information: The Case for Transforming Scholarly Communication Model in the African Region**

**Joseph M. Kavulya**  
**The Catholic University of Eastern Africa,**  
**Nairobi, Kenya**



# Purpose of the paper

- ❑ To examine the challenges facing scholarly communication in the African region with view to initiating dialogue towards its transformation to a model which can:
  - Bring down costs,
  - Improve access, dissemination and sharing of scientific information among researchers and other key stakeholders.



# Objectives of the Paper

- **Review current challenges** facing existing scholarly communication in the Africa region
- **Investigate how emerging practices and tools** can lead to improved access, dissemination and sharing of scientific information
- **Concretize emerging/ tools/trends in information generation**, dissemination, access into a new model of scholarly communication
- **Make recommendations on a way forward**



# Basic argument/proposal/thesis

- ❑ Adoption of emerging practices /tools such as:
  - Open access and open access publishing and archiving
  - Library consortia access to scientific information,
  - Digital library concepts
  - Virtual communities and sharing
  - Digital curation through digital knowledge repositories, Use of social media and networking
- Improve access, dissemination and sharing of scientific information among researchers and other key stakeholders.
- ❑ We need to **invest resources in implementing, promoting, supporting and encouraging these practices in our institutions**



# Outline of paper

1. Background: Key concept of scholarly communication
2. Role of scholarly communication in scholarship and research
3. Crises in scholarly communication and case for transformation
4. New model of scholarly communication:  
Tools/elements and the opportunities
5. Challenges in the transformation process
6. Conclusion and recommendations



# Background

## Scholarly communication: A Definition:

- “The system through which research and other scholarly writings are
    - Created,
    - Evaluated for quality,
    - Disseminated to the scholarly community *and other consumers*, and preserved for future use.
- (Association of College & Research Libraries, 2003)**



# Background

## Scholarly communication: A Definition

- ❑ The traditional process of scholarly communication consists of several groups of players with different roles such as:-
  - Research funding agencies
  - Researchers, specialists and practitioners
  - Research institutions & networks e.g. Universities, NRENS, and research centres
  - Publishers
  - Librarians
  - Consumers / Users



# Background: Why think about scholarly communication

- The critical role of scholarly communication centres around the fact that **scientific information is the most critical resource as well as product of in research and innovation.**
  
- i. **Setting the right agenda:**
- ii. **Further research initiatives** and generation of further knowledge and innovation
- iii. **Improved quality and transparency** in research activities
- iv. **Adoption /Application of research innovations**
- v. **Setting appropriate policies**, development programmes and their implementation
- vi. **Realization of sustainable development** and a brighter future for communities.



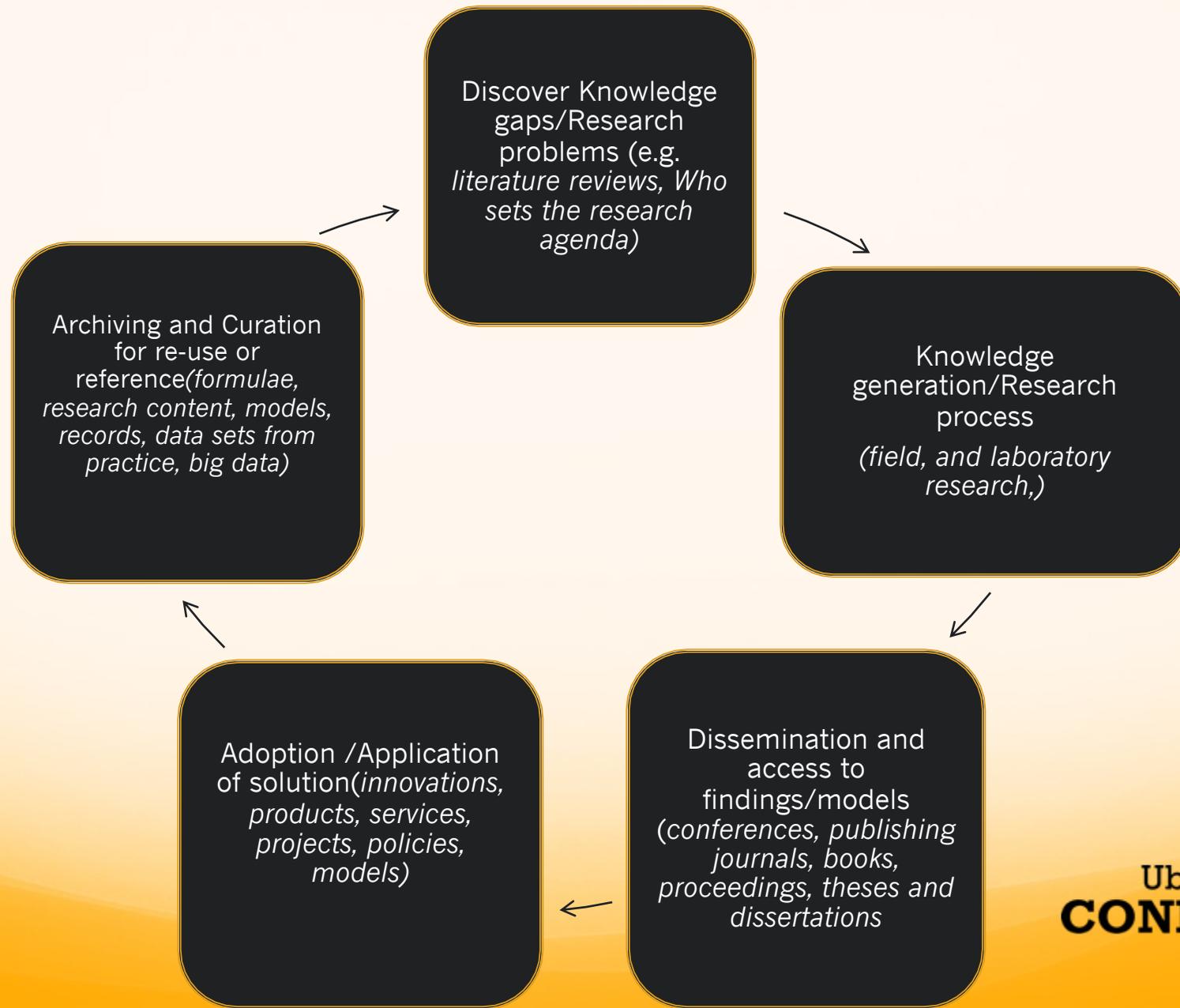
## Background: Why think about scholarly communication

□ Therefore an efficient scholarly communication which is key to:

- **Setting the right agenda:** Relevance of research to local communities
- **Further research initiatives** and generation of further knowledge and innovation
- **Improved quality and transparency** in research activities
- **Adoption of research innovations** towards improvements in areas such as business, health, agriculture, education and training.
- **Setting appropriate sectoral and national policies,** development programmes and their implementation
- **Realization of sustainable development** and a brighter future for communities.



# The problem: Scholarly communication Processes



# The Problem Characteristics of existing scholarly communication

- Foreign sources & control of research agenda
- Traditional Print publishing (print journals, books, proceedings)
- Institutional/personal subscriptions/purchase to scientific information
- Lack of application of ICT tools in research
- Poor non-existent curation of data
- Face-to face conferencing



# The problem: Crises in scholarly communication and in Africa

- ❑ Evidence indicates that scientists, research institutions and communities in many parts of the developing countries including the African region have limited access to this vital commodity
- ❑ The overarching problem are model of scholarly communication in Africa today that engender:-
  - Inadequate funding for research
  - Low publishing levels among scholars and researchers
  - High cost of publishing,
  - Low intra-Africa collaboration and information exchange among key stakeholders,
  - Low impact of research in solving local problems, national policy and development.



# Crisis of scholarly communication in Africa: Fact sheet

- ❑ There are signs that the research output by African researchers is increasing the current statistics are unacceptable by any standard: In 2012:
  - The number of research papers published in scientific journals with at least one African author (52,000).
  - Sub-Saharan Africa's contribution to global research output was 0.72% in 2012
  - Research in the physical sciences, technology, engineering and mathematics accounted for only 29% of all research in Sub-Saharan Africa excluding South Africa”.



# Crisis of scholarly communication in Africa: Fact sheet

- The quality of STEM research, as measured by relative citation impact, was 32% below the global average.
- 79% of all research in East Africa and 70% in Southern Africa outside South Africa was produced through international collaboration.
- Sub-Saharan Africa where there are about 80 researchers per million in the population while the global average stands at 1,081 researchers per million people. Most of these are not active



## Methodology: Addressing the problem

- ❑ This paper is based on literature review undertaken to achieve the stated objectives.
- ❑ A meta-review search in relevant web portals and databases was carried to retrieve literature on relevant thematic areas
  - ❖ Challenge existing scholarly communication models in the Africa region
  - ❖ Emerging practices and tools in scholarly communication and the opportunities they present to the research community
- ❑ An analytical literature review which included identification of categories, groups, parts and types of relationships....These give rise to the various categorized presented in this paper



# The solution : The New Model of scholarly communication: Key elements

- ❑ This problem of poor access is attributable largely to the problems facing scholarly communication.
- ❑ This new model will involve adoption of emerging practices such as:
  - Open access and open access publishing and archiving
  - Information sharing through Library consortia access to scientific information,
  - Digital library concepts
  - Virtual communities and sharing
  - Digital curation through digital knowledge repositories, Use of social media and networking



# Information access through consortia access to scientific information (Benefits)

## ❑ Economies of Scale

- The volume of purchasing demand amalgamated by a consortium provides more resources for individual members.

## ❑ Economies of Process

- Shared negotiations/acquisition /contracting avoids redundancy & leads to reduced of transaction costs



# Open access publishing on scholarly communication

- ❑ Reduces the costs of article purchase or journal subscription for institutions.
- ❑ More access to results of scholarly research
- ❑ New ideas can be dispersed more rapidly and widely, which serves as an impetus for new research studies
- ❑ Researchers and institutions have broad access to the most recent scientific ideas.



# Digital curation through institutional knowledge repositories, multimedia content preservation)

- ❑ Considerable amounts of funds spent in research in the region
- ❑ Yet the research data resulting from this considerable investment is lost by the end of research projects or visible as they might be.
- ❑ For full benefit of the research data that is produced, institutions must establish data curation/archiving processes to safeguard/preserve data for future use.



# Digital curation through digital knowledge repositories, multimedia content creation)

- ❑ Allows continued access to data despite short-term funding or institutional changes
- ❑ Encouraging re-use of data
- ❑ Facilitate sharing to maximize the impact of research
- ❑ Leads more transparency and accountability which inspires confidence among the research funding bodies
- ❑ Reduces duplication of effort in research data creation by enhances the long-term value of existing data & making it available for further high quality research.



# Benefits of Social media and networking scholarly communication

- ❑ Allows users to easily review, exchange views, experiences and comments more easily
- ❑ Ensures better flow and dissemination of information
- ❑ Users are able to get tailored information to fit personal needs, interests and preferences
- ❑ Supports collaboration across space and time



# Virtual communities and exchange/conferencing: Benefits

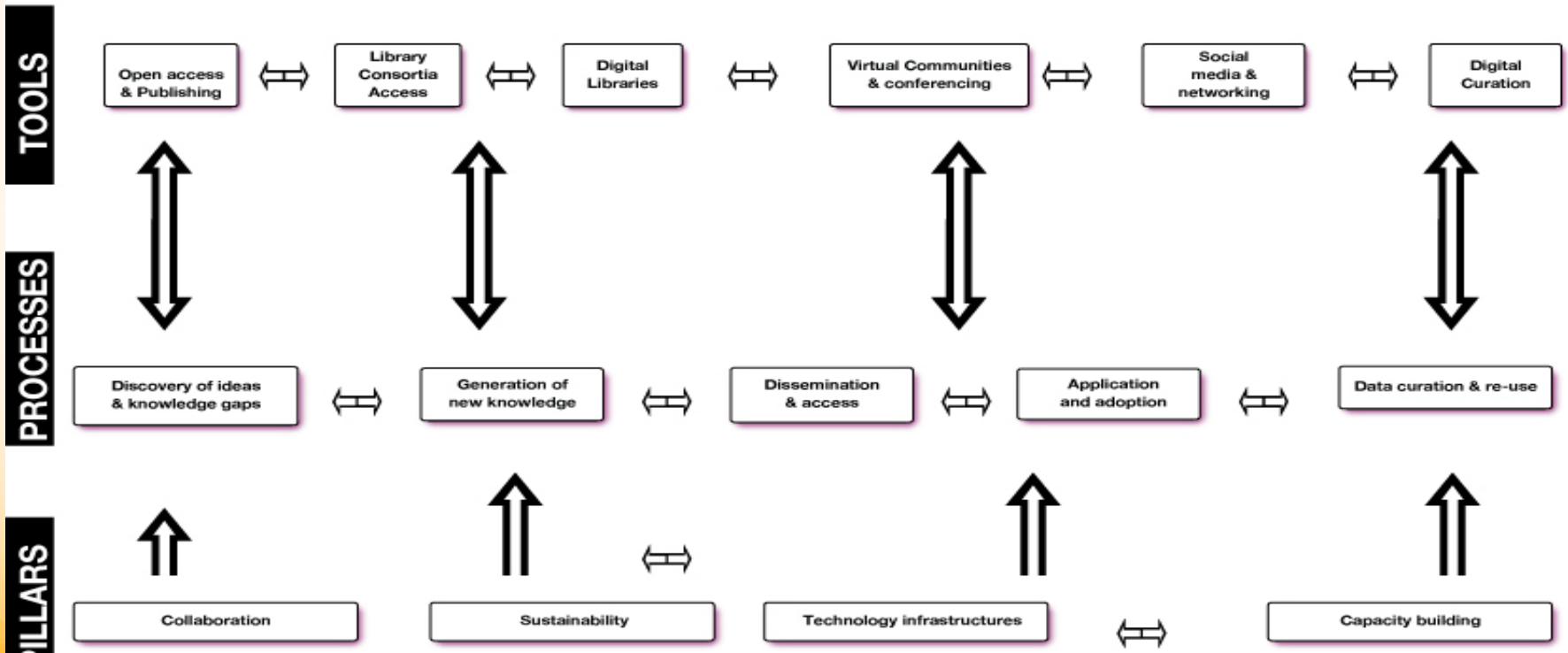
## ❑ **Definition:**

- ✓ Individuals whose members are dispersed geographically yet function as a unit thro use of cyberinfrastructures
- ✓ More timely sharing/dissemination and access to information
- ✓ Incorporate more researchers and other stakeholders
- ✓ Improved collaboration among researchers



# Proposed Model of Emerging Scholarly Communication in Africa

## Model of Emerging Scholarly Communication

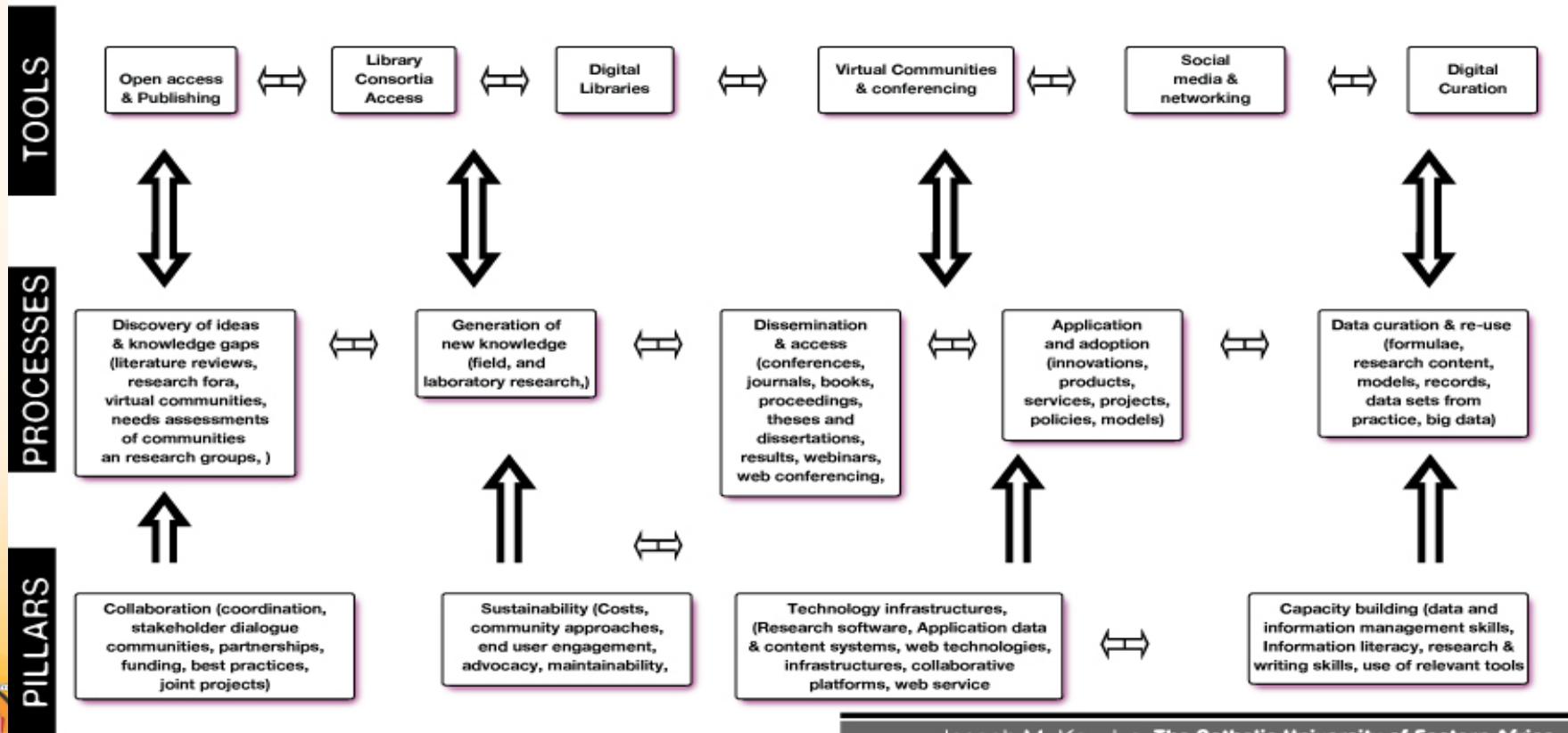


Joseph M. Kavulya, The Catholic University of Eastern Africa



# Model of Emerging Scholarly Communication in Africa

## Model of Emerging Scholarly Communication



Joseph M. Kavulya, The Catholic University of Eastern Africa

# Challenges in transformation of scholarly communication

## ❑ Financial requirements

- Costs of processes such as publishing ICTs, relevant manpower & capacity building to implement new models (librarians, ICT, publishing, media specialists)

## ❑ Sustainability

- Whether open access models can sustainably support the research publication infrastructure in the long term remains to be seen.

## ❑ Change management issues

- It will take effort to convince various of the benefits of the new mode

## ❑ Limited research funding in the region

- More research output required to justify establishment of more local journals



# Challenges of new scholarly communication model

## ❑ Risk of lowered quality control

- Models such open access may discourage journals from publish more articles.
- Revenue comes from publication fees, journals may be encouraged to publish more articles, with a negative impact on overall quality.

## ❑ Copyright /Intellectual Property Rights Issues

- As we shift from print to electronic form, the legal framework for their use changes from copyright law to contract law



# Recommendations

- ❑ **Collaboration and pulling of resources together** among research institutions in the scholarly communication value chain: establish digital libraries, digital curation, strengthen library consortia, implement local Open access publishing efforts,
- ❑ **Need for continuous capacity building among key players:** ICT personnel, researchers, librarians, and end users, etc.
- ❑ **Advocacy efforts required for new model: digital curation, open access,**





36

**Thank you so much for  
listening!**

