

Niklas Zimmer

Publishing digital collections of cultural heritage materials as research data by example of our use of the *Figshare for Institutions* platform (*ZivaHub*) for publishing the *Zamani Project* data collections.

1. Drivers - preservation and access for heritage data
2. Dealing with scale - open science/scholarship is the only way
3. Identifiers for everything - for machines and humans to use
4. The Zamani Project - a segway into 'heritage data'
5. Next steps - LOD, harvesters & communities of practise

UNESCO

Concerning the Preservation of, and Access to, Documentary Heritage Including in Digital Form (2016)



28/04/2016

Ref.: CL/4155

Subject: **Recommendation concerning the Preservation of, and Access to, Documentary Heritage Including in Digital Form**

Sir/Madam,

Further to the adoption of the matter referred to in subject, I am pleased to enclose herewith a certified copy of the Recommendation, which is transmitted to you pursuant to Article 15 of the Rules of Procedure concerning recommendations to Member States and international conventions covered by the terms of Article IV, paragraph 4, of the UNESCO Constitution.

Kindly note that, in accordance with this Article of the Constitution, each of the Member States is required to submit the Recommendation to its competent authorities within a period of one year from the close of the session of the General Conference at which it was adopted. Since a recommendation, unlike a convention, does not require a ratification procedure, I would request that the utmost consideration be given to the possible integration of the enclosed Recommendation into national legislation or policies, and would appreciate receiving information or confirmation of any action taken by your authorities to that end.

Accept, Sir/Madam, the assurances of my highest consideration.

Irina Bokova
Director-General

Enc:

cc: National Commissions for UNESCO
Permanent Delegations to UNESCO

7 place de Fontenay
75352 Paris 07 SP, France
Tél. : +33 (0)1 45 68 10 00
Fax : +33 (0)1 45 68 55 55

www.unesco.org

To Ministers responsible for relations with UNESCO

'[...] documents produced and preserved over time, in all their analogue and digital forms through time and space, constitute the primary means of knowledge creation and expression, having an impact on all areas of humanity's civilization and its further progress, [...] the preservation of, and long-term accessibility to documentary heritage underpins fundamental freedoms of opinion, expression and information as human rights [...]' (p.2)

UNESCO

Concerning the Preservation of, and Access to, Documentary Heritage Including in Digital Form (2016)



United Nations
Educational, Scientific and
Cultural Organization

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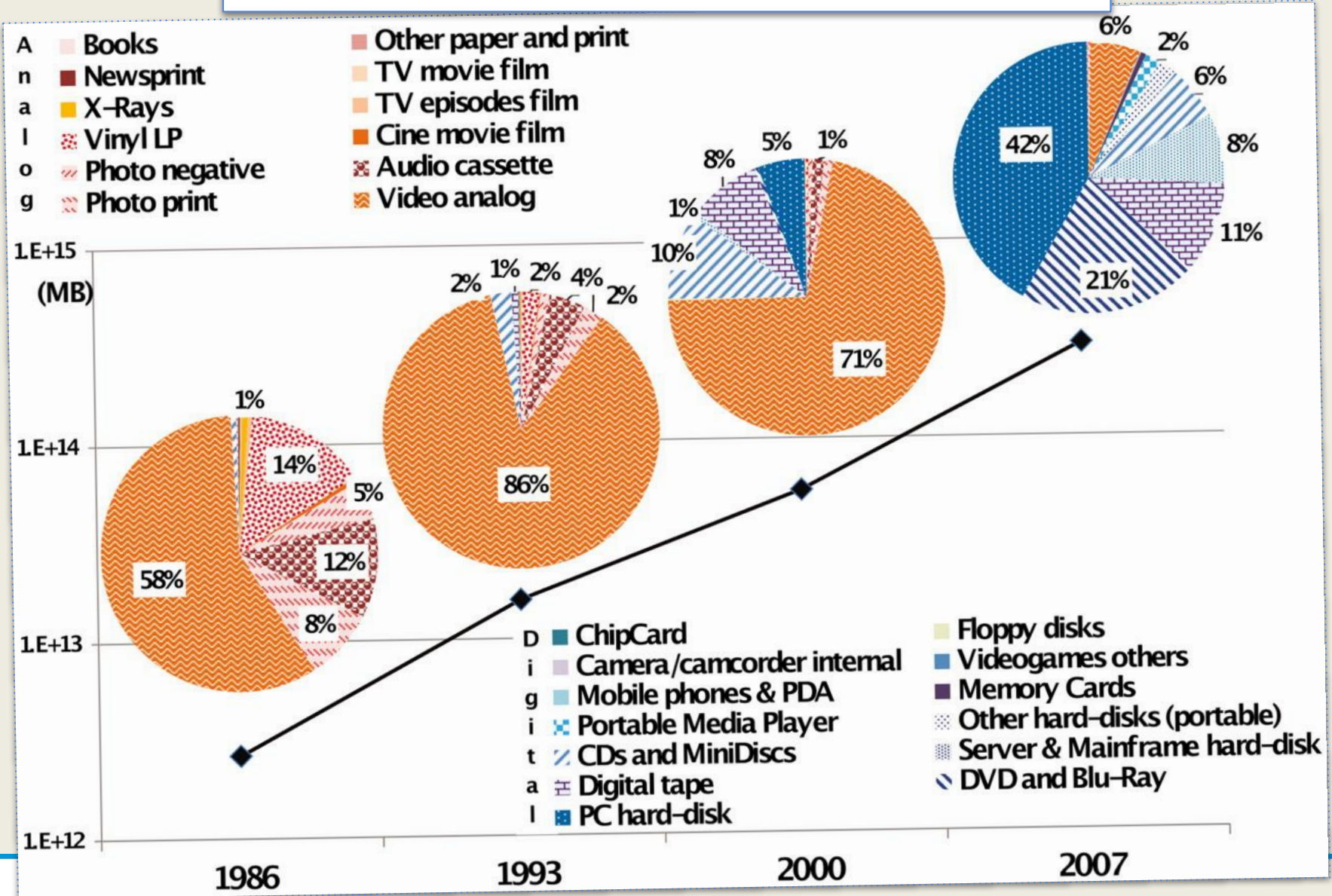
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To Ministers responsible for relations with UNESCO

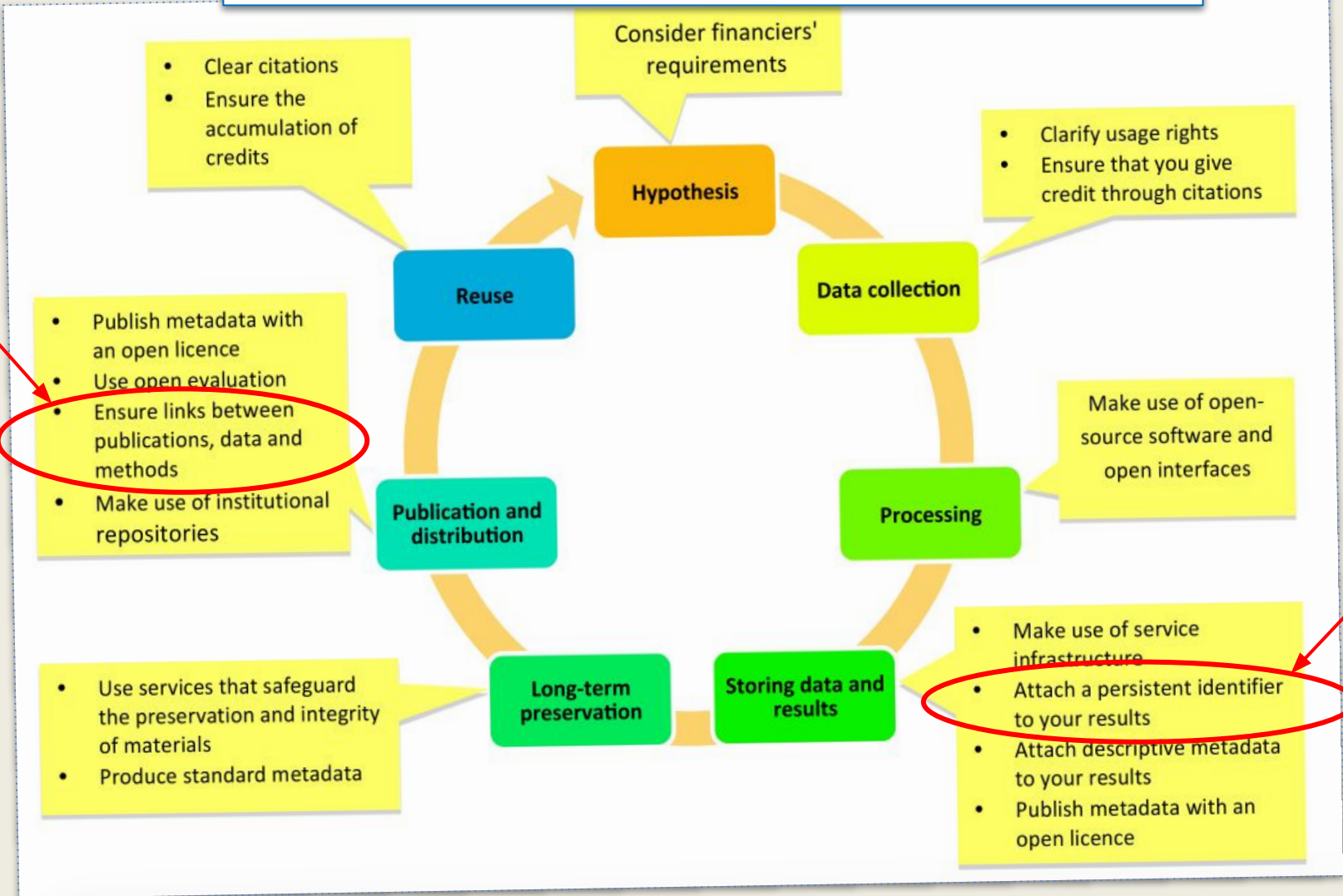
'The world's documentary heritage is of global importance and responsibility to all, and should be fully preserved and protected for all, with due respect to and recognition of cultural mores and practicalities. It should be permanently accessible and re-usable by all without hindrance. It provides the means for understanding social, political, collective as well as personal history. It can help to underpin good governance and sustainable development. For each State, its documentary heritage reflects its memory and identity, and thus contributes to determine its place in the global community.' (p.6)



Information in the age of massive digitalisation



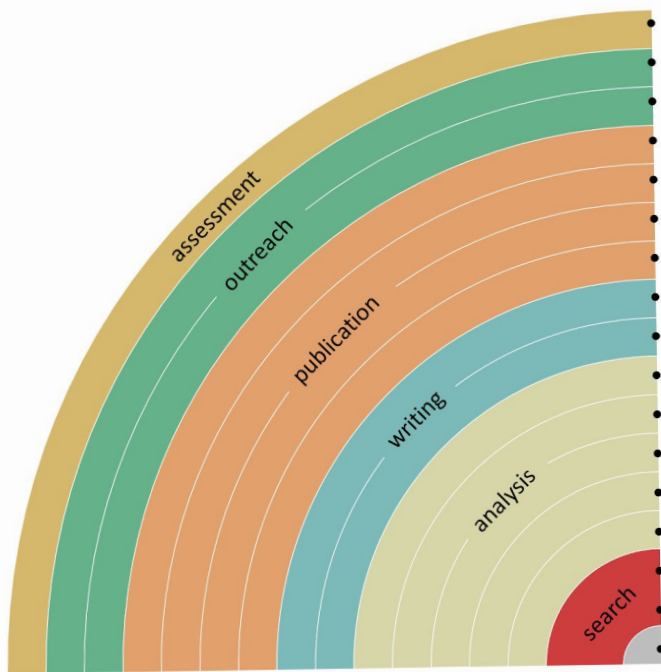
The Open Science research management life cycle



Source: Foster Open Science: *What is Open Science?* Available: <https://www.fosteropenscience.eu/content/what-open-science-introduction>

Open science workflows & tools

You can make your workflow more open by ...



- adding alternative evaluation, e.g. with altmetrics
- communicating through social media, e.g. Twitter
- sharing posters & presentations, e.g. at FigShare
- using open licenses, e.g. CC0 or CC-BY
- publishing open access, 'green' or 'gold'
- using open peer review, e.g. at journals or PubPeer
- sharing preprints, e.g. at OSF, arXiv or bioRxiv
- using actionable formats, e.g. with Jupyter or CoCalc
- open XML-drafting, e.g. at Overleaf or Authorea
- sharing protocols & workfl., e.g. at Protocols.io
- sharing notebooks, e.g. at OpenNotebookScience
- sharing code, e.g. at GitHub with GNU/MIT license
- sharing data, e.g. at Dryad, Zenodo or Dataverse
- pre-registering, e.g. at OSF or AsPredicted
- commenting openly, e.g. with Hypothes.is
- using shared reference libraries, e.g. with Zotero
- sharing (grant) proposals, e.g. at RIO

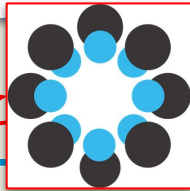


DOI: 10.5281/zenodo.1147025

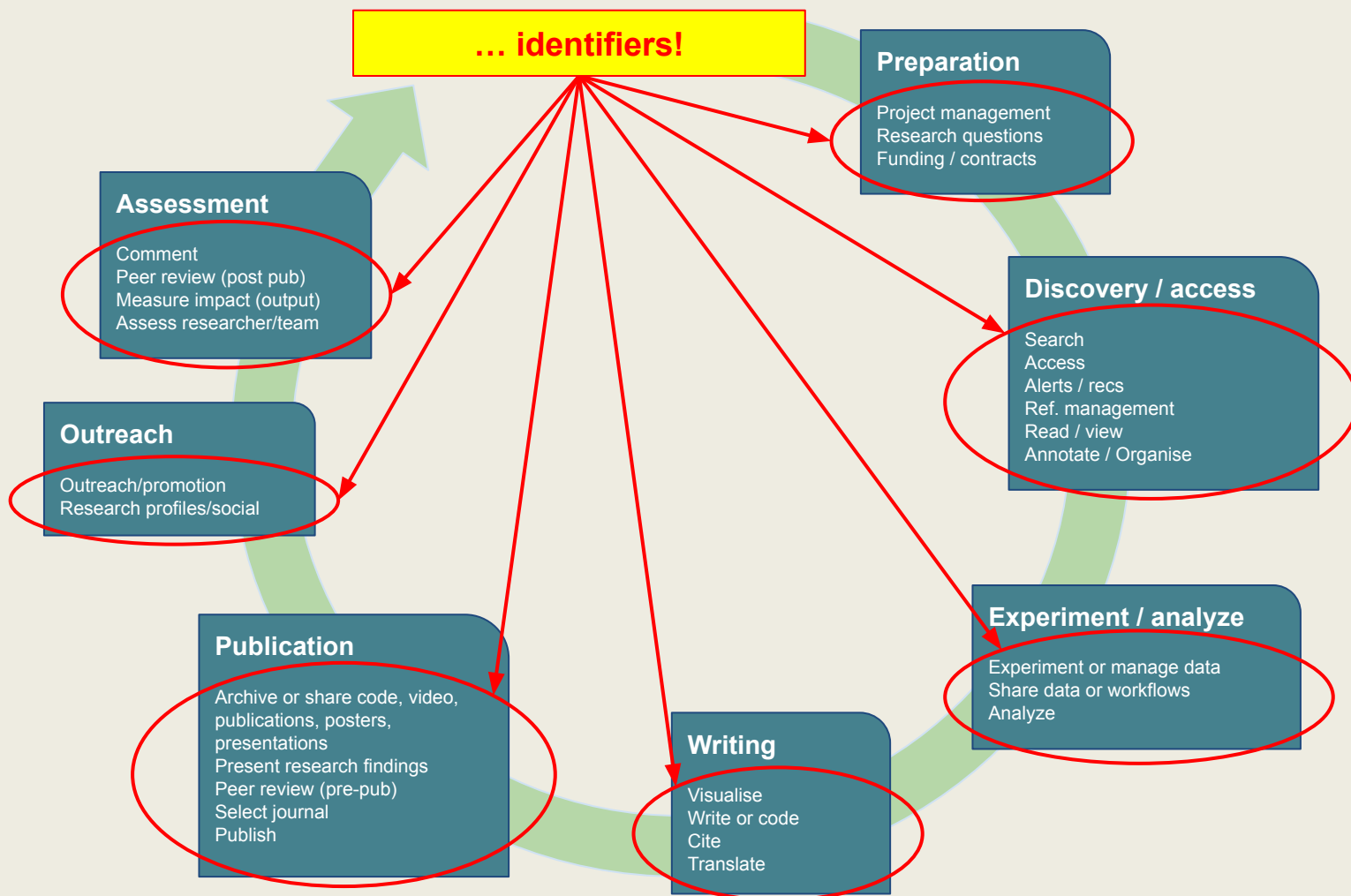
 Bianca Kramer & Jeroen Bosman <https://101innovations.wordpress.com>

Source: Foundations for Open Scholarship Development. <https://open-scholarship-strategy.github.io/site/>

examples of systems actively supported at UCT



All along the research life cycle ...



Adapted from: The Scholarly Kitchen: Lettie Y. Conrad: *Mapping Open Science Tools*. <https://scholarlykitchen.sspnet.org/2018/08/30/mapping-open-science-tools/?informz=1>

Persistent identifiers (PIDs)

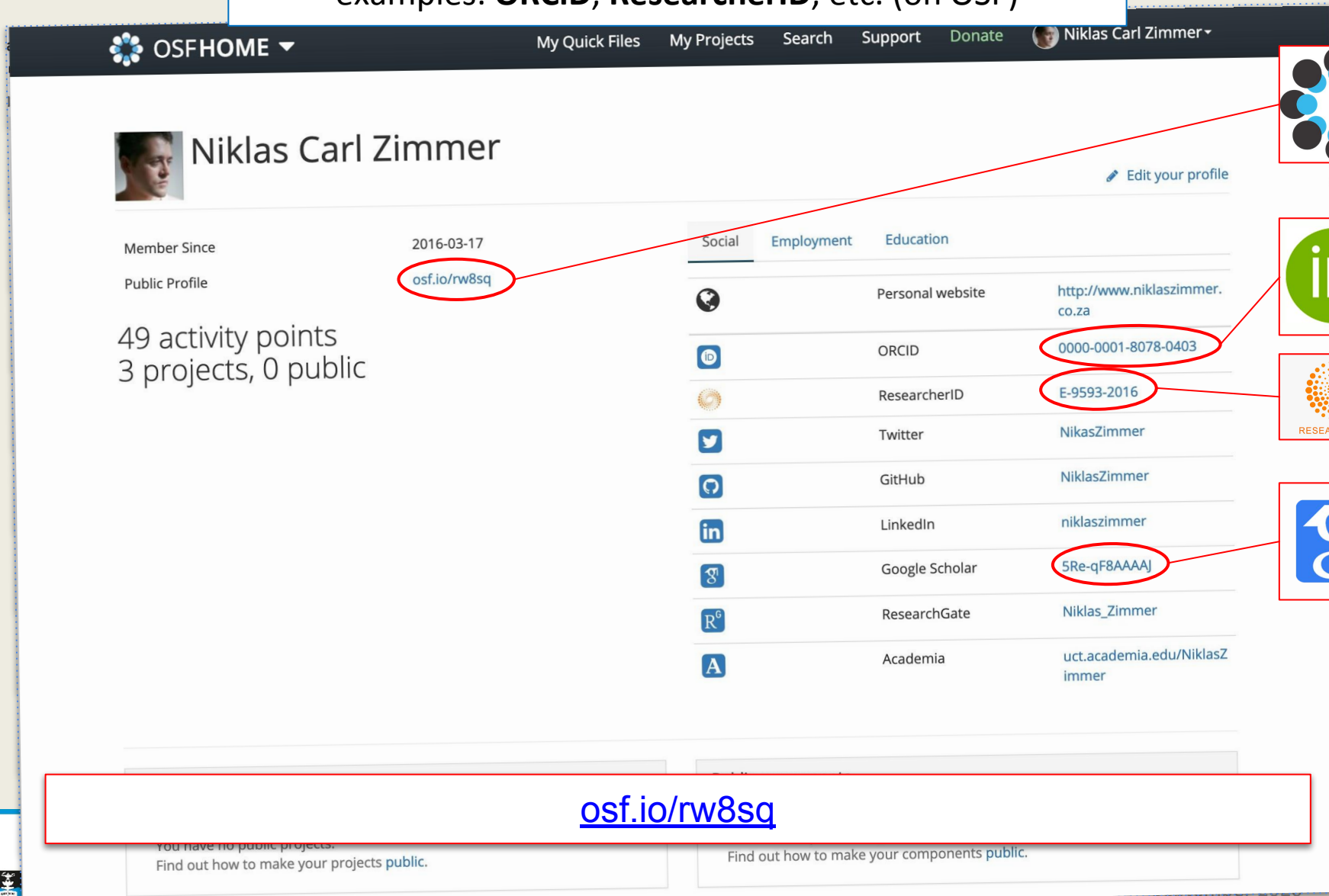
... are *long-lasting references to digital resources* (unique, persistent and standardised) and enable systems to *assert, ensure and monitor*:

- accessibility; discoverability; findability
- authenticity; authentication; accuracy
- **FAIR**ness (see: [FORCE11](#)); interoperability
- geo-location; time-stamping
- non-ambiguity; originality; deduplication
- provenance; history; reporting; auditing
- reproducibility; replicability; reusability










See: Todd Carpenter: Identify Everything: Role of standard identifiers in communicating science. CENDI/NFAIS/RDA/NAS conference. Nov 15, 2017. Available: <https://www.slideshare.net/BaltimoreNISO/identify-everything-role-of-standard-identifiers-in-communicating-science>

PIDs for people

examples: ORCID, ResearcherID, etc. (on OSF)



The screenshot shows the OSFHOME profile page for Niklas Carl Zimmer. The page includes a navigation bar with 'OSFHOME', 'My Quick Files', 'My Projects', 'Search', 'Support', 'Donate', and a user profile 'Niklas Carl Zimmer'. The profile section shows a profile picture, name, and 'Edit your profile' link. Below this, it lists 'Member Since' (2016-03-17) and 'Public Profile' (osf.io/rw8sq). It also displays '49 activity points' and '3 projects, 0 public'. A table of social and professional identifiers is shown, with columns for 'Social', 'Employment', and 'Education'. The table lists various identifiers such as Personal website, ORCID, ResearcherID, Twitter, GitHub, LinkedIn, Google Scholar, ResearchGate, and Academia. Red circles highlight the ORCID ID (0000-0001-8078-0403), ResearcherID (E-9593-2016), and Google Scholar ID (5Re-qF8AAAAJ). Red boxes on the right side of the image contain icons for these identifiers: a cluster of black and blue circles, a green circle with 'iD', a circular orange pattern with 'RESEARCHERID', and a blue square with a white graduation cap and 'g'.

Social	Employment	Education
	Personal website	http://www.niklaszimmer.co.za
	ORCID	0000-0001-8078-0403
	ResearcherID	E-9593-2016
	Twitter	NikasZimmer
	GitHub	NiklasZimmer
	LinkedIn	niklaszimmer
	Google Scholar	5Re-qF8AAAAJ
	ResearchGate	Niklas_Zimmer
	Academia	uct.academia.edu/NiklasZimmer

osf.io/rw8sq

You have no public projects.
Find out how to make your projects public.

Find out how to make your components public.

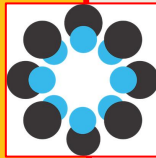


PIDs for preprints

example: **AfricArXiv** (on OSF)



A free preprint service for African scientists
Powered by OSF Preprints



FREE AND OPEN SOURCE. START

The Open Science Framework (OSF) is an open source software project that facilitates open collaboration in science research. [...] Currently partner repositories include: AgriXiv, [AfricArXiv](#), arabxiv, BITSS, Earth ArXiv, engrXiv, FocUS Archive, Frenxiv, INA-Rxiv, LawArXiv, LIS Scholarship Archive (LISSA), MarXiv, MindRxiv, NutriXiv, Paleorxiv, PsyArXiv, SocArxiv, SportRxiv, and Thesis Commons (theses and dissertations).

<https://osf.io/preprints/africarxiv/>

PIDs for institutions

example: **GRID** for University of Cape Town

University of Cape Town

grid.7836.a

Metadata:

ID grid.7836.a


Types Education

Established 1829 CE


External links:


Institute Links <http://www.uct.ac.za/>

Wikipedia <http://en.wikipedia.org/wiki/University...>

 0000 0004 1937 1151

 501100007112*, 501100001338

 670532*, 23154259

 Q951305

* Preferred ID

Alternate Labels:

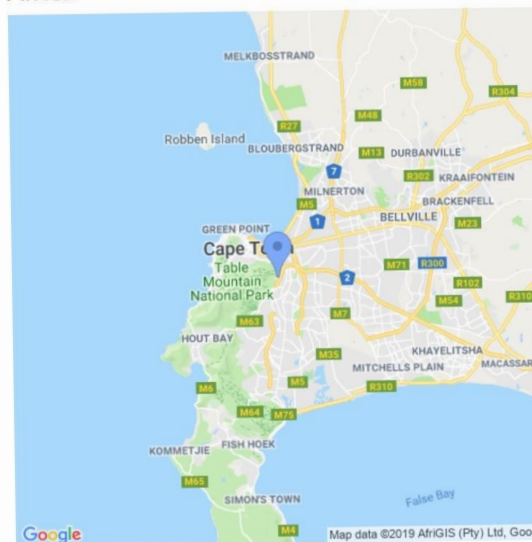
Aliases South African College

Acronyms UCT

Relationships:

Rondebosch - South Africa

REPORT AN ERROR



GeoNames



... GRID's unique collection of references to other identification systems (such as the [Open Funder Registry](#), [ISNI](#), [Orgref](#), [Wikidata](#) and more) supplies even more power to users, enabling them to easily integrate data from multiple sources in different data formats.

<https://grid.ac/institutes/grid.7836.a>

PIDs for institutions

example: ROR for University of Cape Town

[ABOUT](#)

 <https://ror.org/03p74gp79>

University of Cape Town
SOUTH AFRICAN COLLEGE, UCT

WEBSITE

<http://www.uct.ac.za/>

OTHER IDENTIFIERS

GRID [grid.7836.a](#)

ISNI [0000000419371151](#)

Crossref Funder ID [501100007112](#)

Wikidata [Q951305](#)



SOUTH AFRICA

EDUCATION

'ROR is a community-led project to develop **an open, sustainable, usable, and unique identifier for every research organization in the world.**'

<https://ror.community/>



Repository details

ZivaHub

PIDs for repositories

example: re3data entry (doi) for ZivaHub

General

Name of repository	ZivaHub
Additional name(s)	University of Cape Town figshare repository UCT IDR UCT Institutional Data Repository Open Data UCT
Repository URL	https://uct.figshare.com/
Subject(s)	<div style="display: flex; flex-wrap: wrap; gap: 5px;"> <div style="background-color: #f4a460; padding: 2px;">Astrophysics and Astronomy</div> <div style="background-color: #f4a460; padding: 2px;">Biology</div> <div style="background-color: #f4a460; padding: 2px;">Chemistry</div> <div style="background-color: #f4a460; padding: 2px;">Business Administration</div> <div style="background-color: #f4a460; padding: 2px;">Engineering Sciences</div> <div style="background-color: #f4a460; padding: 2px;">Humanities and Social Sciences</div> <div style="background-color: #f4a460; padding: 2px;">Computer Science</div> <div style="background-color: #f4a460; padding: 2px;">Mathematics</div> <div style="background-color: #f4a460; padding: 2px;">Psychology</div> <div style="background-color: #f4a460; padding: 2px;">Social and Behavioural Sciences</div> <div style="background-color: #f4a460; padding: 2px;">Computer Science</div> <div style="background-color: #f4a460; padding: 2px;">Physics</div> <div style="background-color: #f4a460; padding: 2px;">Natural Sciences</div> <div style="background-color: #f4a460; padding: 2px;">Life Sciences</div> <div style="background-color: #f4a460; padding: 2px;">Economics</div> <div style="background-color: #f4a460; padding: 2px;">Computer Science, Electrical and System Engineering</div> </div>
Description	The University of Cape Town (UCT) uses Figshare for institutions for their data repository, which was launched in 2017 and is called ZivaHub: Open Data UCT. ZivaHub serves principal investigators at the University of Cape Town who are in need of a repository to store and openly disseminate the data that support their published research findings. The repository service is provided in terms of the UCT Research Data Management Policy. It provides open access to supplementary research data files and links to their respective scholarly publications (e.g. theses, dissertations, papers et al) hosted on other platforms, such as OpenUCT.
Content type(s)	<div style="display: flex; flex-wrap: wrap; gap: 5px;"> <div style="background-color: #4a90e2; padding: 2px;">Structured text</div> <div style="background-color: #4a90e2; padding: 2px;">Scientific and statistical data formats</div> <div style="background-color: #4a90e2; padding: 2px;">Structured graphics</div> <div style="background-color: #4a90e2; padding: 2px;">Databases</div> <div style="background-color: #4a90e2; padding: 2px;">Standard office documents</div> <div style="background-color: #4a90e2; padding: 2px;">Images</div> <div style="background-color: #4a90e2; padding: 2px;">Audiovisual data</div> <div style="background-color: #4a90e2; padding: 2px;">Plain text</div> <div style="background-color: #4a90e2; padding: 2px;">Software applications</div> </div>
Keyword(s)	multidisciplinary
Repository type(s)	institutional
Mission statement for designated community	https://www.news.uct.ac.za/article/-2017-11-07-introducing-zivahub-open-data-uct
Research data repository language(s)	eng
Data and/or service provider	serviceProvider dataProvider



re3data.org: ZivaHub; editing status 2018-04-12; re3data.org - Registry of Research Data Repositories.

<http://doi.org/10.17616/R36R4R> last accessed: 2019-03-01



Cite this re3data.org record:

re3data.org: ZivaHub; editing status 2018-04-12; re3data.org - Registry of Research Data Repositories. <http://doi.org/10.17616/R36R4R> last accessed: 2018-10-03

PIDs for research outputs

example: **doi**

As data-object metadata can be quite homogenous (i.e. quantitative, qualitative are extremely common), PIDs for data, like DOIs for research outputs, are becoming vital to associate specific research outputs with their data. DOIs are the most commonly used PID for data objects, many of which are minted through DataCite.

Examples of repositories that provide DOIs:

- [Zenodo](#)
- [Figshare.com](#)
- [Figshare for Institutions](#) (e.g. [ZivaHub](#))

DOI Minting services:

- [DataCite](#)
- [CNRI](#) (handle assigning)
- [International DOI Foundation](#) (IDF)

Data Registries:

- [re3data](#)



See: International DOI Foundation (IDF): [doi.org](#)

The UCT doi on ZivaHub | Open Data UCT

A doi is an alphanumeric string beginning with '10', i.e 10.25375/**uct**.7143581.v1.

To make this resolve to a digital object, it needs to be prefixed with 'https://doi.org', as per the example: <https://doi.org/10.25375/uct.7143581.v1>

https://	doi.org/	10.25375/	uct.	7143581.	v1
A secure extension of HTTP.	International DOI foundation, who ensure that DOIs stay true.	'10' is the standard doi directory code; '25375' is the registrant code for ZivaHub.	Indicates that the DOI originates from a UCT researcher or research project.	Administrative subdivision code.	Version number.

The UCT doi on ZivaHub | Open Data UCT

Cite

Download all (135.1 MB)

Share Embed + Collect ...

2 files

DataCite

Rüther, Heinz; Schröder, Ralph; Bhurtha, Roshan; Held, Christoph; McDonald, Bruce; Wessels, Stephen (2020): 3D Model File Set of the Gede ruins site, Kenya. University of Cape Town. Media.
<https://doi.org/10.25375/uct.11770272.v1>

<https://doi.org/10.25375/uct.11770272.v1>

Select your citation style and then place your mouse over the citation text to select it.

3D Model File Set of the Gede ruins site, Kenya

Media posted on 30.01.2020, 16:11 by [Heinz Rüther](#), [Ralph Schröder](#), [Roshan Bhurtha](#), [Christoph Held](#), [Bruce McDonald](#), [Stephen Wessels](#)

260
views

14
downloads

0
citations

This is a 3D Model of the Gede ruins site in Kenya. The model is untextured. Be aware that this is a very large 3D model and requires a high end graphics card to view.

The ruins of Gede (also Gedi), a traditional Arab-African Swahili town, are located just off Kenya's coastline, some 90km north of Mombasa. Gede was a small town built entirely from stones and rocks, and most of the original foundations are still visible today.



CATEGORIES

- [Heritage and Cultural Conservation](#)

Remaining structures of the site include coral stone buildings, mosques, houses and a

<https://doi.org/10.25375/uct.7756910.v1>

The Zamani Project on ZivaHub

ZivaHub, UCT's Figshare-powered data repository, began publishing the **Zamani Project** data in 2019. The sheer volume and complexity of the data require an ongoing process.

1. *The Zamani Project at the University of Cape Town (UCT) captures spatial information of tangible cultural heritage sites across Africa and beyond.*
2. *The Zamani Project team, in collaboration with UCT Libraries, is in the process of ingesting their processed data products to ZivaHub, the University's institutional data repository, powered by Figshare for Institutions.*
3. *Uploading their data to ZivaHub allows the Zamani Project team to securely store and share large amounts of data and provide for efficiently managed reuse.*
4. *Through the use of ZivaHub, the reach of the Zamani Project has broadened exponentially. By citing and embedding their ZivaHub data items on the project's website, the team hopes to deepen their connections with researchers from a variety of disciplines and to enable future scholarship opportunities.*

Rüther, Heinz; Schäfer, Sarah; Zimmer, Niklas (2020): The Zamani Project. figshare. Online resource.
<https://doi.org/10.6084/m9.figshare.11920281.v2>

https://zivahub.uct.ac.za/Zamani_Project



Discover research from **Zamani Project**

[+ Follow](#)

ALL CATEGORIES SEARCH

sort **Posted date** ↓

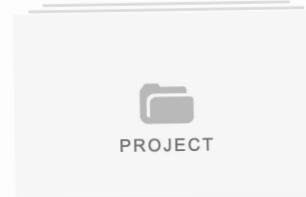
79 posts | 21,901 views | 5,997 downloads | more stats...



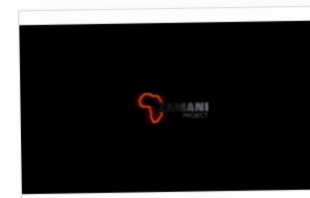
Zamani Project Media Library of the Kua Ruins
Heinz Rüther ▾ 21/02/2020



Gede Ruins Heritage Spatial Documentation Metadata Dataset
Heinz Rüther ▾ 14/02/2020



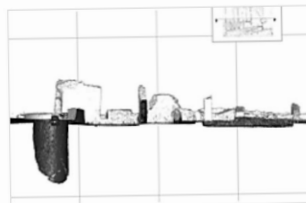
Project: Gede Ruins
Roshan Bhurtha ▾ 14/02/2020



Zamani Project Media Library of the Gede Ruins
Heinz Rüther ▾ 31/01/2020



A Panorama Tour of the Gede Ruins Archaeological Site
Heinz Rüther ▾ 31/01/2020



Sections File Set of the Small Mosque, Gede Ruins
Heinz Rüther ▾ 30/01/2020



Oblique Views File Set of the Small Mosque, Gede Ruins
Heinz Rüther ▾ 30/01/2020



Plans File Set of the Small Mosque, Gede Ruins
Heinz Rüther ▾ 30/01/2020

Niklas Zimmer

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2. Dealing with scale - open science/scholarship is the only way
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(P)IDs for properties, items, lexemes ...

Wikidata is a **collaboratively edited multilingual knowledge graph** hosted by the **Wikimedia Foundation**

'... Wikidata, on the other hand, **creates opportunities for community participation and allows for a greater diversity in the way people can be represented in data, giving people the power to shape knowledge about their own communities ...**'

<https://medium.com/freely-sharing-the-sum-of-all-knowledge/wikidata-in-collective-building-a-universal-language-for-connecting-glam-catalogs-59b14aa3214c>

Each Wikidata entity is identified by an **entity ID**, which is a number prefixed by a letter.

- **items** are prefixed with Q (e.g. [Q12345](#)),
- **properties** are prefixed by P (e.g. [P569](#)) and
- **lexemes** are prefixed by L (e.g. [L1](#)).

https://www.wikidata.org/wiki/Wikidata:Main_Page

label — **Douglas Adams** (Q42) — **item identifier**

description — English writer and humorist
 Douglas Noël Adams | Douglas Noel Adams — **aliases**
 ▶ In more languages

Statements

property — **educated at** — **value**

rank — **St John's College** — **qualifiers**

end time	1974
academic major	English literature
academic degree	Bachelor of Arts
start time	1971

statement group — **2 references** — **opened references**

stated in	Encyclopædia Britannica Online
reference URL	http://www.nndb.com/people/731/000023662/
original language of work	English
retrieved	7 December 2013
publisher	NNDB
title	Douglas Adams (English)

+ add reference

collapsed reference

Brentwood School

end time	1970
start time	1959

▶ 0 references

+ add (statement)

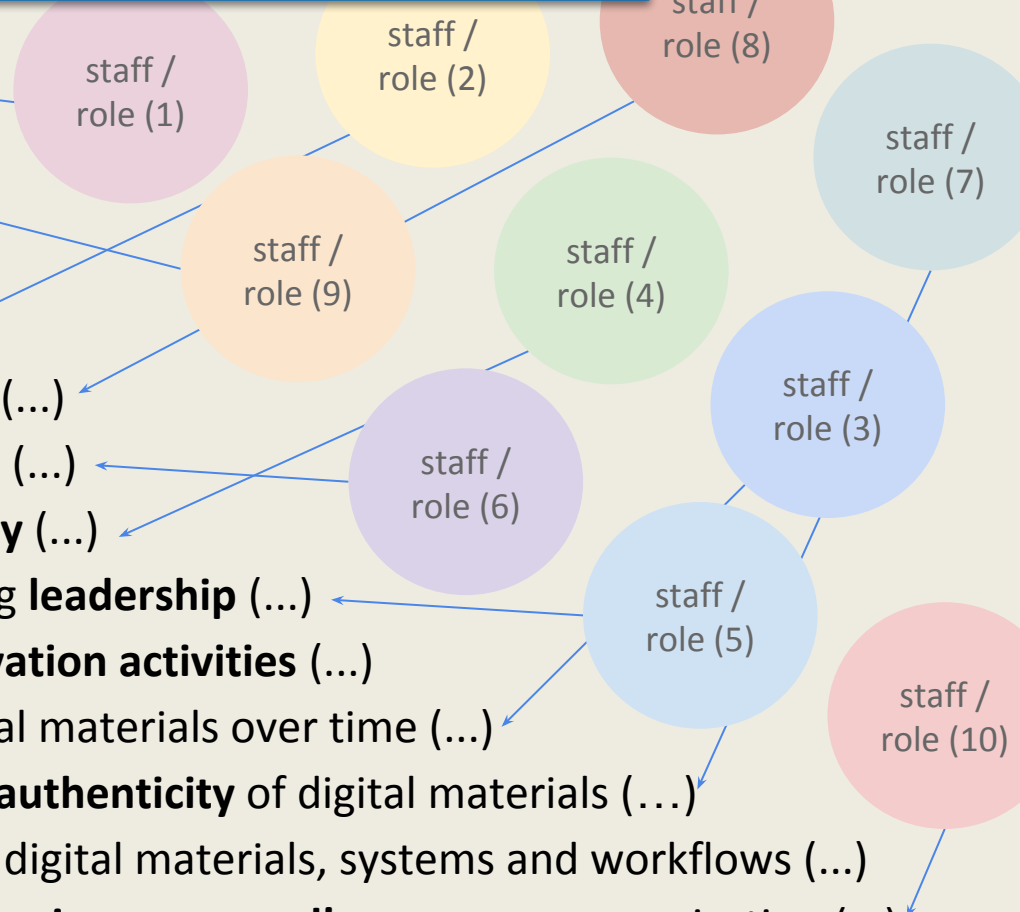
A **statement** ([Resource Description Framework \(Q54872\)](#) graph format: *Subject-Predicate-Object*) is how the information we know about an item - the data we have about it - gets recorded in Wikidata. This happens by pairing a property with at least one value; this pair is at the heart of a statement. Statements can also be expanded on, annotated, or contextualized with additional values, as well as optional qualifiers, references, and ranks. Statements also serve to connect items to each other, resulting in a linked data structure.

https://upload.wikimedia.org/wikipedia/commons/a/ae/Datamodel_in_Wikidata.svg

Digital Preservation activities (who to own?)

example: **NCOMS** (National Cultural Object Metadata Schema)

- Capture **metadata** (...)
- **Liase** with **stakeholders** (...)
- Use appropriate **standards** (...)
- Provide appropriate **access** (...)
- Carefully **appraise** and **select** (...)
- Provide supporting **documentation** (...)
- Keep up with technological **changes** (...)
- Plan and develop **strategy** and **policy** (...)
- **Work together** with strong, enabling **leadership** (...)
- Assign appropriate **levels of preservation activities** (...)
- **Add value** to an organization's digital materials over time (...)
- Ensure the continued **integrity** and **authenticity** of digital materials (...)
- Actively monitor, plan, and manage digital materials, systems and workflows (...)
- Help make digital preservation be '**business as usual**' across your organisation (...)



Adapted from: Digital Preservation Coalition: **Executive Guide on Digital Preservation for all organizations: All organisations.** (Online), Available: <https://dpconline.org/our-work/dpeg-home/dpeg-organisation-type/dpeg-all-orgs>

A new international community: The PID Forum








the **PID** Forum

all categories ▾ **Categories** Latest New (6) Unread Top

Category	Topics
General Topics that don't need a category, or don't fit into any other existing category.	2
PID Best Practices A category to bring together information (papers, guidelines etc) and ideas on PID best practices for different communities and disciplines.	3 3 new
PID News & Blogs Share interesting PID news & blogs here	1 2 new
PID-related events Category to share any PID-related events that might be of interest to the community e.g. conferences, webinars, workshops and more!	4
PIDapalooza2019 Discussion topics and practical announcements related to PIDapalooza 2019	8
User Stories User stories about PIDs used in the real world that should be	65



New Topic

Latest		
	🚩 Welcome to the PID Forum!	0 21d
	Measuring CrossRef Metadata Evolution with Participation Reports • new ■ PID News & Blogs	0 14h
	Crossref DOI display guidelines • new ■ PID Best Practices guidelines	0 16h
	CESSDA PID Policy • new ■ PID Best Practices	0 16h
	Identifiers for the 21st century - PLOS Biology paper ■ PID Best Practices best-practice, life-sciences	0 19h
	Love Data Week 2019 ■ PID-related events	0 9d
	Free Data citation webinar 31st Jan ■ PID-related events	2 16d

<https://www.pidforum.org/>

References | Reading

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