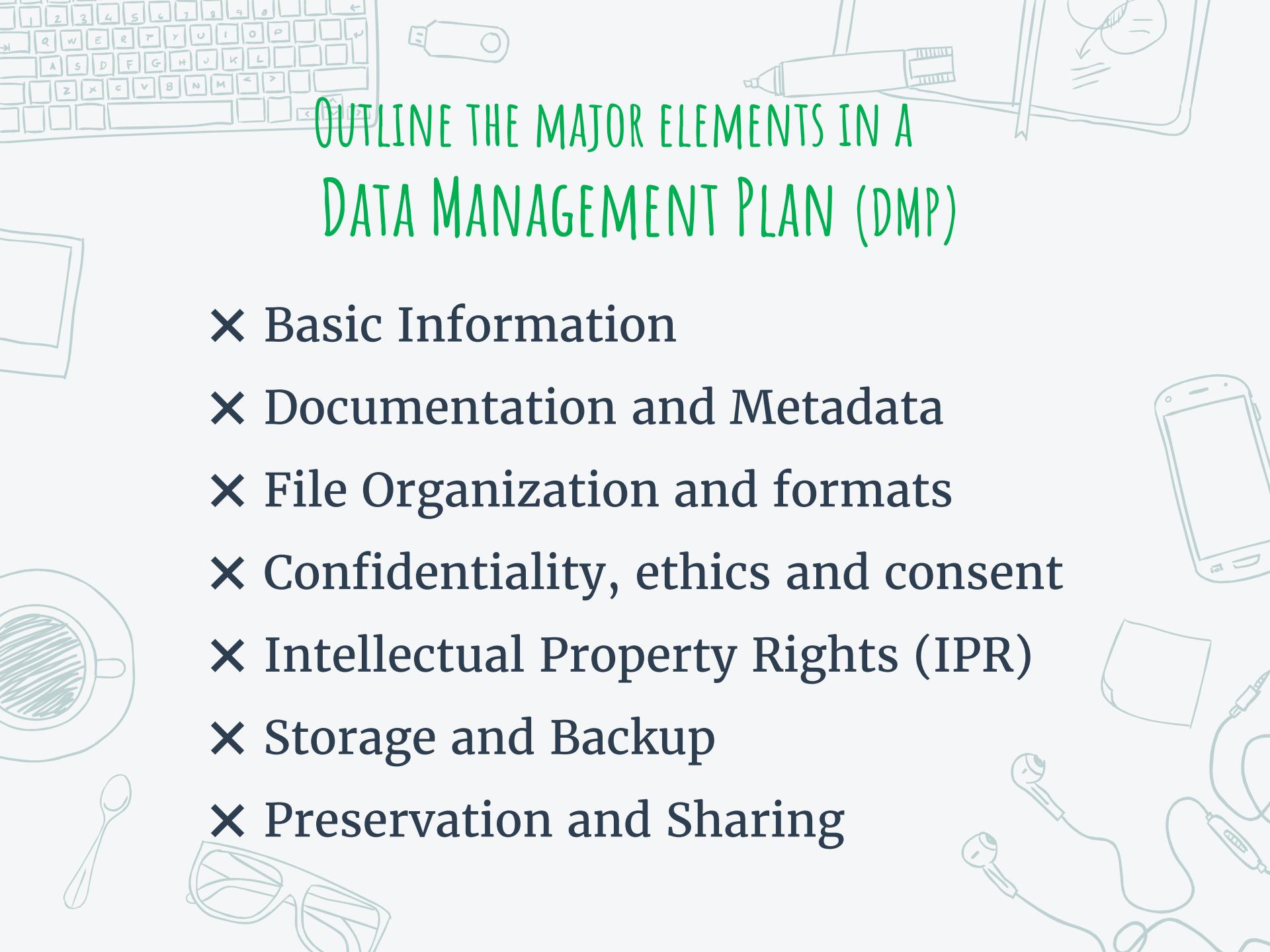


INTRODUCTION TO RESEARCH DATA MANAGEMENT (RDM) – A WORKSHOP FOR RESEARCH POSTGRADUATE STUDENTS

THROUGH THIS WORKSHOP, YOU WILL BE ABLE TO:

- × Explain the importance of Research Data Management (RDM)
- × Describe the process of RDM Planning



OUTLINE THE MAJOR ELEMENTS IN A DATA MANAGEMENT PLAN (DMP)

- ✖ Basic Information
- ✖ Documentation and Metadata
- ✖ File Organization and formats
- ✖ Confidentiality, ethics and consent
- ✖ Intellectual Property Rights (IPR)
- ✖ Storage and Backup
- ✖ Preservation and Sharing

HKUL RESEARCH DATA SERVICES

<https://lib.hku.hk/researchdata/rds.htm>

HKUL RESEARCH DATA SERVICES

RPG STUDENTS | RESEARCH STAFF | RDM | METADATA | DEPOSIT DATA | RESOURCES | HELP

WHAT IS RESEARCH DATA MANAGEMENT?

RDM

THE UNIVERSITY OF HONG KONG LIBRARIES

RDM FOR RESEARCH POSTGRADUATE (RPG) STUDENTS

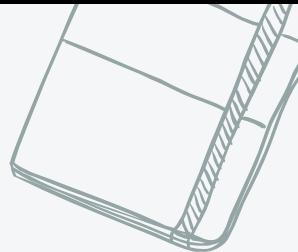
RDM FOR RPG SUPERVISORS

CONTINUE READING



A Dialogue on Research Data Management at HKU

For HKU Research Postgraduates



HKU Research Data Services: Research Data Management
<https://lib.hku.hk/researchdata/rpg.htm>

WHAT IS RESEARCH DATA



1.





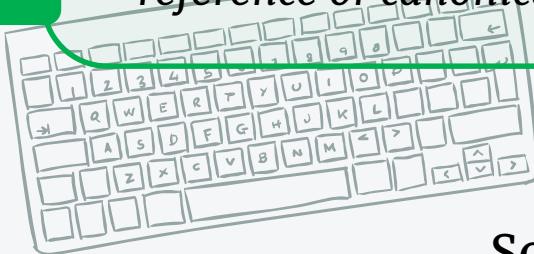
1.

WHAT IS RESEARCH DATA

All researchers work with data, but how exactly they define it depends on their field of study.

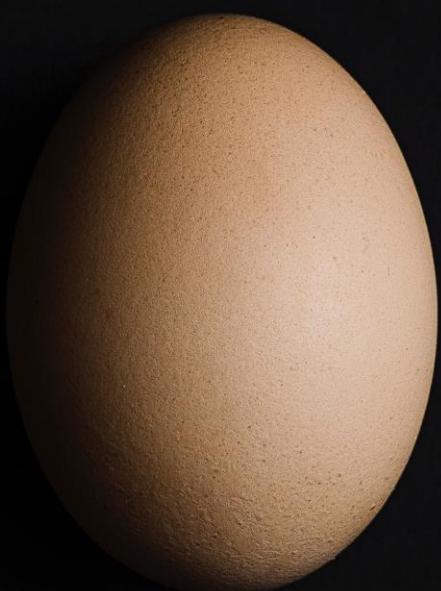
types of data

- observational
- experimental
- simulation
- derived or compiled
- reference or canonical



file formats

- text
- numbers
- multimedia
- models
- software
- field-specific
- instrument-specific



RESEARCH
DATA IS
fragile.

2.

WHAT IS RESEARCH DATA MANAGEMENT



authentic

reliable

Organized

Available
when
needed

Secure
and safe



2.

WHAT IS RESEARCH DATA MANAGEMENT

RDM is a general term covering how you organize, structure, store, and care for the information used or generated during a research project.

2.

WHAT IS RESEARCH DATA MANAGEMENT

RDM IN GENERAL INCLUDES:

- × Plan how your data will be collected, stored and cared for -- before, during, and after your research project.
- × How you deal with information on a day-to-day basis over the lifetime of a project.
- × What happens to data in the longer term - what you do with it after the project concludes.

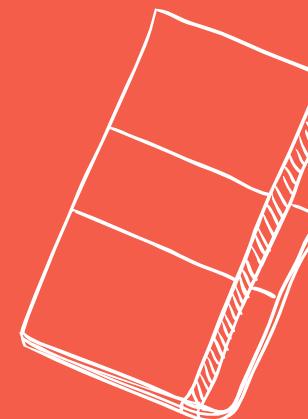
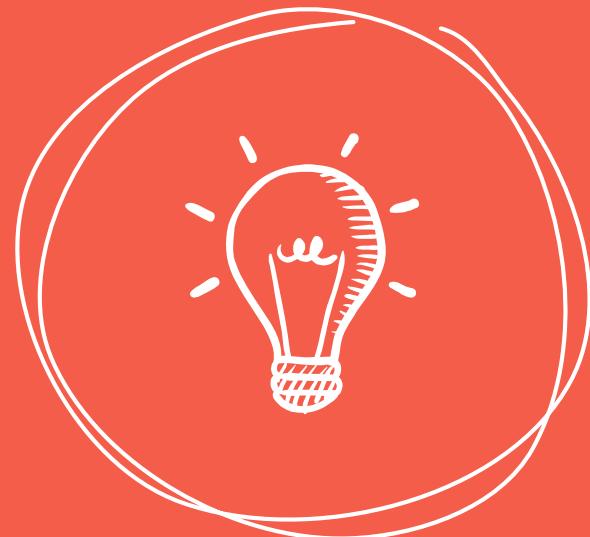


WHY RESEARCH DATA MANAGEMENT





HKU HAS A POLICY





Research Services

Support and information for HKU researchers

[Quick Links](#)[Search this site](#)

[Home](#) > [Research Integrity](#) > [Research Data and Records Management](#)

Research Data and Records Management

The management of research data and records refers to ways in which recorded information (in whatever form or medium) from research is organised, stored, maintained and accessed both during the lifespan of the research and in the long term. Effective research data and records management supports both high quality research and academic integrity.

HKU recognises the importance of good practice in research data and records management and seeks to promote the highest standards. The University's *Policy on the Management of Research Data and Records* was approved by the Senate at its meeting on May 5, 2015, along with the establishment of a **Task Force on Management of Research Data and Records** to oversee the planning of the implementation of the Policy.

[Policy on the Management of Research Data and Records](#)

1. The University of Hong Kong seeks to promote the highest standards in the management of research data and records (1) as fundamental to both high quality research and academic integrity, and acknowledges its obligations under research funders' data-related policy statements and codes of practice, where available (2), to ensure that sound systems are in place to promote best practice, including through clear policy, guidance, supervision, training and support.

2. The University recognises that accurate and retrievable research data are an essential component of any research project and necessary to verify and defend, when required, the process and outcomes of research. Research data are



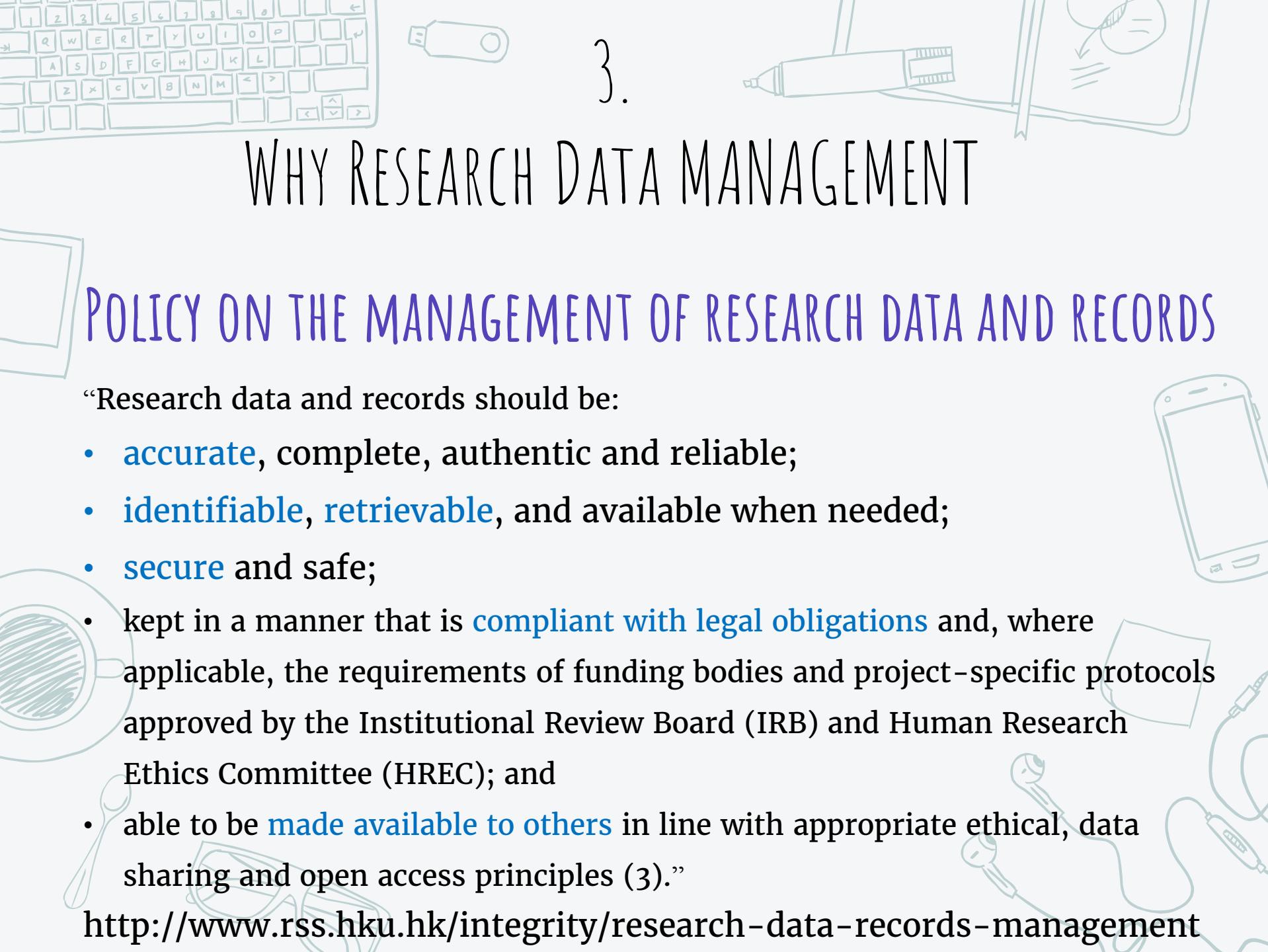
}.

WHY RESEARCH DATA MANAGEMENT

POLICY ON THE MANAGEMENT OF RESEARCH DATA AND RECORDS

To meet the need to

- **Replicate claimed research results**
when called upon to do so
- Ensure **ethical** data collection, storage, and if chosen, re-sharing of data



}.

WHY RESEARCH DATA MANAGEMENT

POLICY ON THE MANAGEMENT OF RESEARCH DATA AND RECORDS

“Research data and records should be:

- accurate, complete, authentic and reliable;
- identifiable, retrievable, and available when needed;
- secure and safe;
- kept in a manner that is compliant with legal obligations and, where applicable, the requirements of funding bodies and project-specific protocols approved by the Institutional Review Board (IRB) and Human Research Ethics Committee (HREC); and
- able to be made available to others in line with appropriate ethical, data sharing and open access principles (3).”

}.

WHY RESEARCH DATA MANAGEMENT

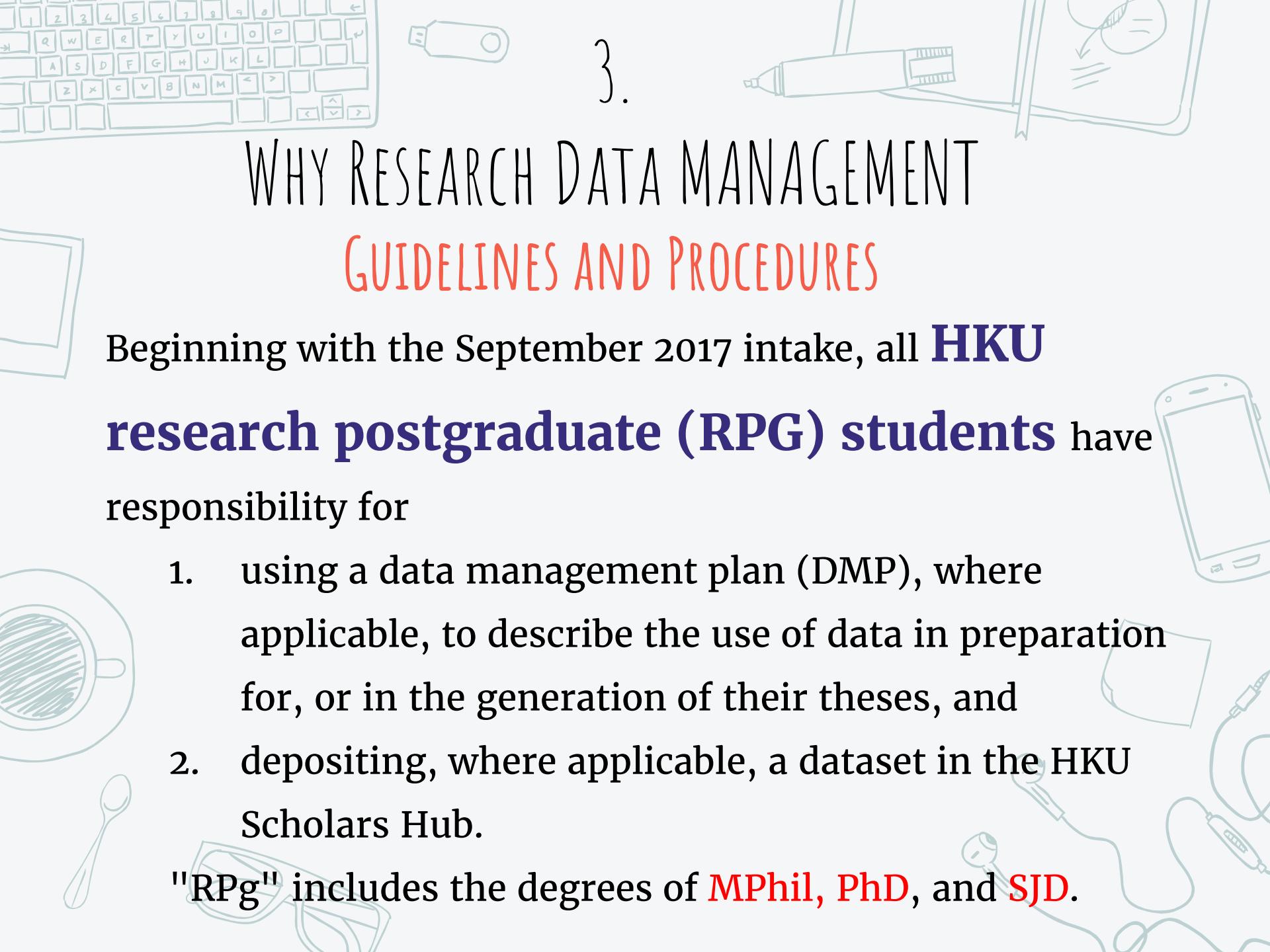
POLICY ON THE MANAGEMENT OF RESEARCH DATA AND RECORDS

“Research data and records should be retained for as long as they are of continuing value to the researcher and the wider research community, and as long as specified by research funder, patent law, legislative and other regulatory requirements. **The minimum retention period for research data and records is three years after publication or public release of the work of the research.**”



WHY RESEARCH DATA MANAGEMENT

GUIDELINES AND PROCEDURES FOR RPG



}. WHY RESEARCH DATA MANAGEMENT GUIDELINES AND PROCEDURES

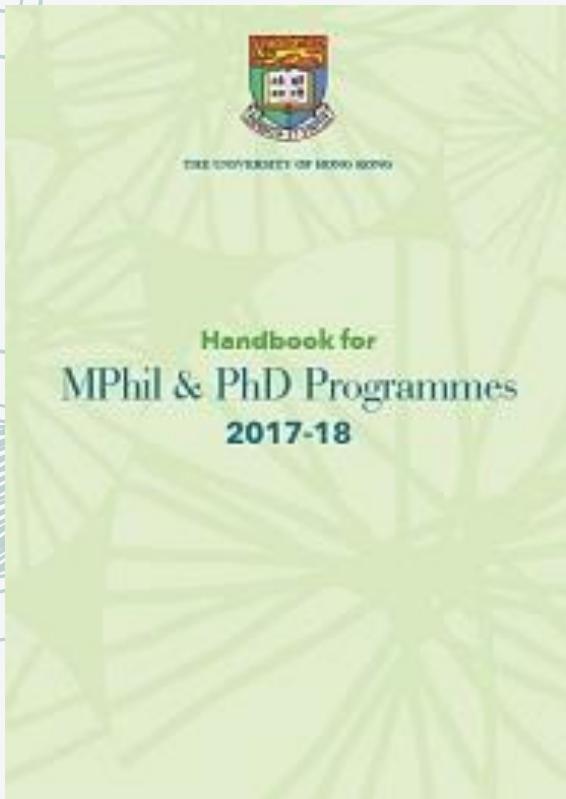
Beginning with the September 2017 intake, all **HKU research postgraduate (RPG) students** have responsibility for

1. using a data management plan (DMP), where applicable, to describe the use of data in preparation for, or in the generation of their theses, and
2. depositing, where applicable, a dataset in the HKU Scholars Hub.

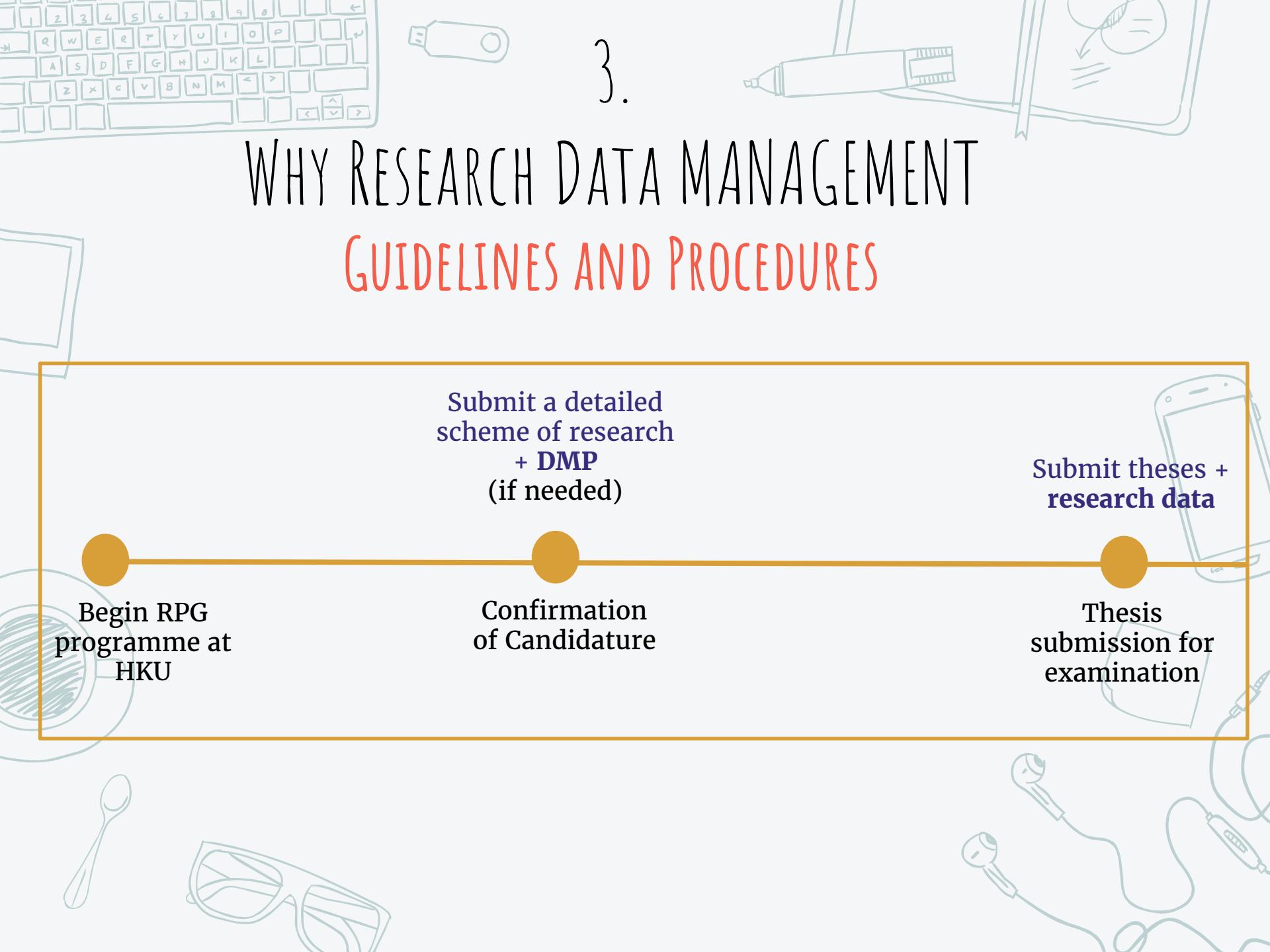
"RPG" includes the degrees of **MPhil**, **PhD**, and **SJD**.

WHY RESEARCH DATA MANAGEMENT

GUIDELINES AND PROCEDURES



- MPH5 & PHD5 **Probation and Confirmation of Candidature** – for description of a data management plan (DMP)
- MPH7 & PHD7 **Period of Study** – for describing when in the period of study, **a dataset, where applicable, is to be submitted**
- MPH14 & PHD14 **Submission of Thesis for Examination** – for description of **dataset submission**
- MPH15 & PHD15 **Thesis Examination** – for consideration of **DMP Entry results and dataset** if applicable, and if desired by the examiners



}. WHY RESEARCH DATA MANAGEMENT GUIDELINES AND PROCEDURES

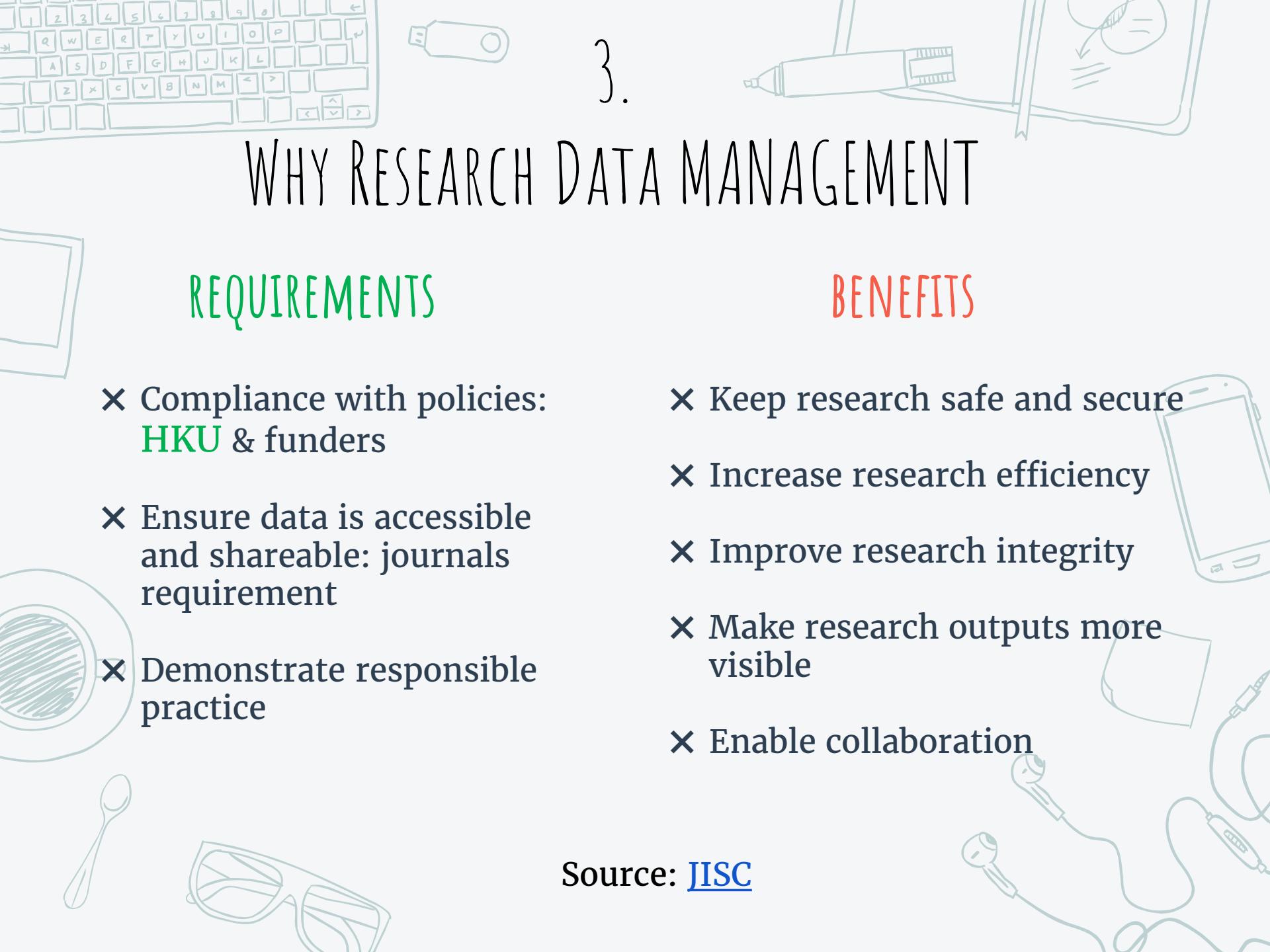
Submit a detailed
scheme of research
+ DMP
(if needed)

Confirmation
of Candidature

Begin RPG
programme at
HKU

Submit theses +
research data

Thesis
submission for
examination



}. WHY RESEARCH DATA MANAGEMENT

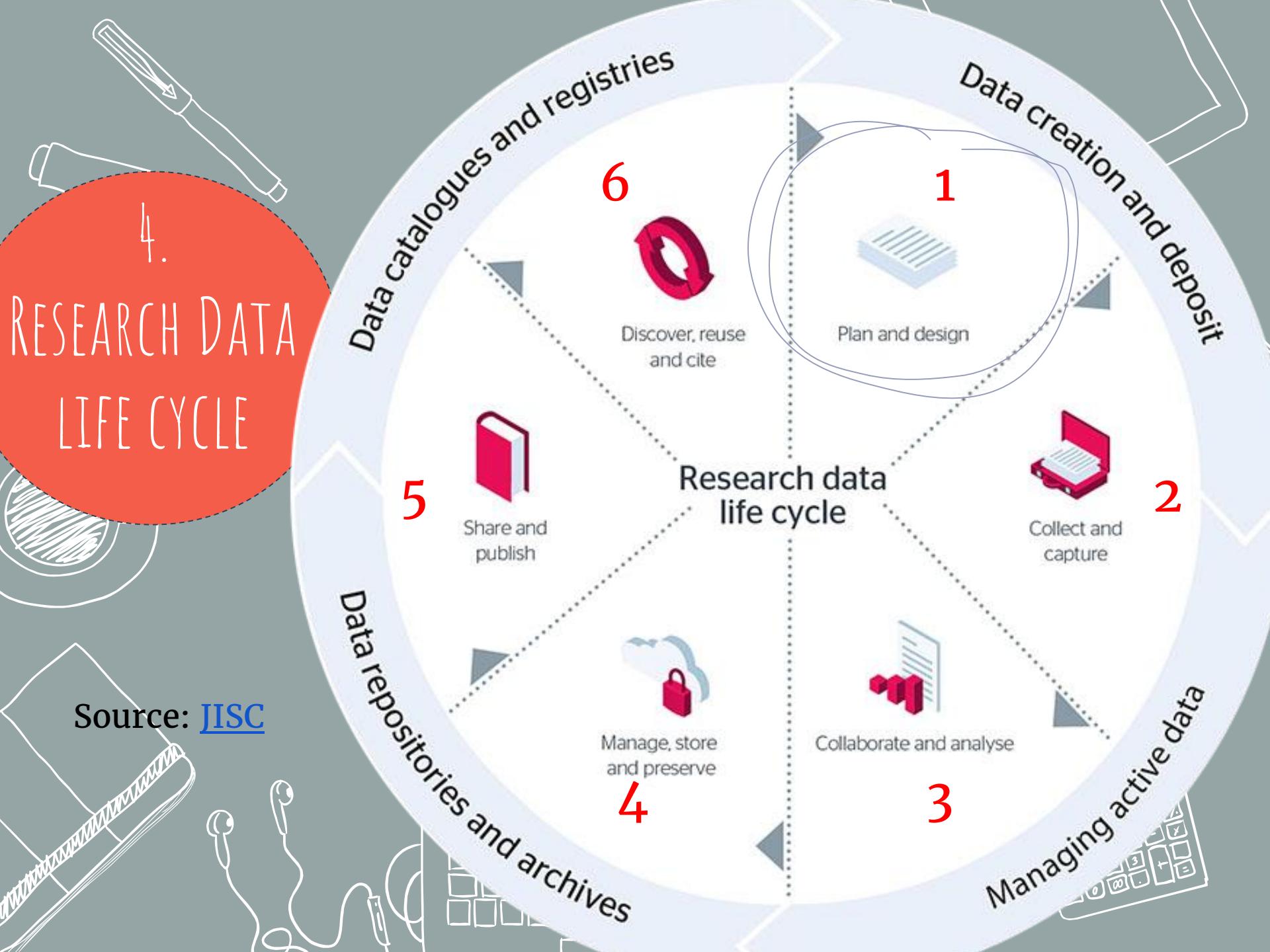
REQUIREMENTS

- ✗ Compliance with policies:
HKU & funders
- ✗ Ensure data is accessible
and shareable: journals
requirement
- ✗ Demonstrate responsible
practice

BENEFITS

- ✗ Keep research safe and secure
- ✗ Increase research efficiency
- ✗ Improve research integrity
- ✗ Make research outputs more
visible
- ✗ Enable collaboration

Source: [JISC](#)



STEP 1: PLAN AND DESIGN

BEFORE PROJECT START

- ✗ Get familiar with RDM requirements and procedures specific to RPg.
- ✗ Check if there are copyright, ethical, or institutional review board (IRB) considerations for your data.
- ✗ Write and implement a Data Management Plan (DMP)

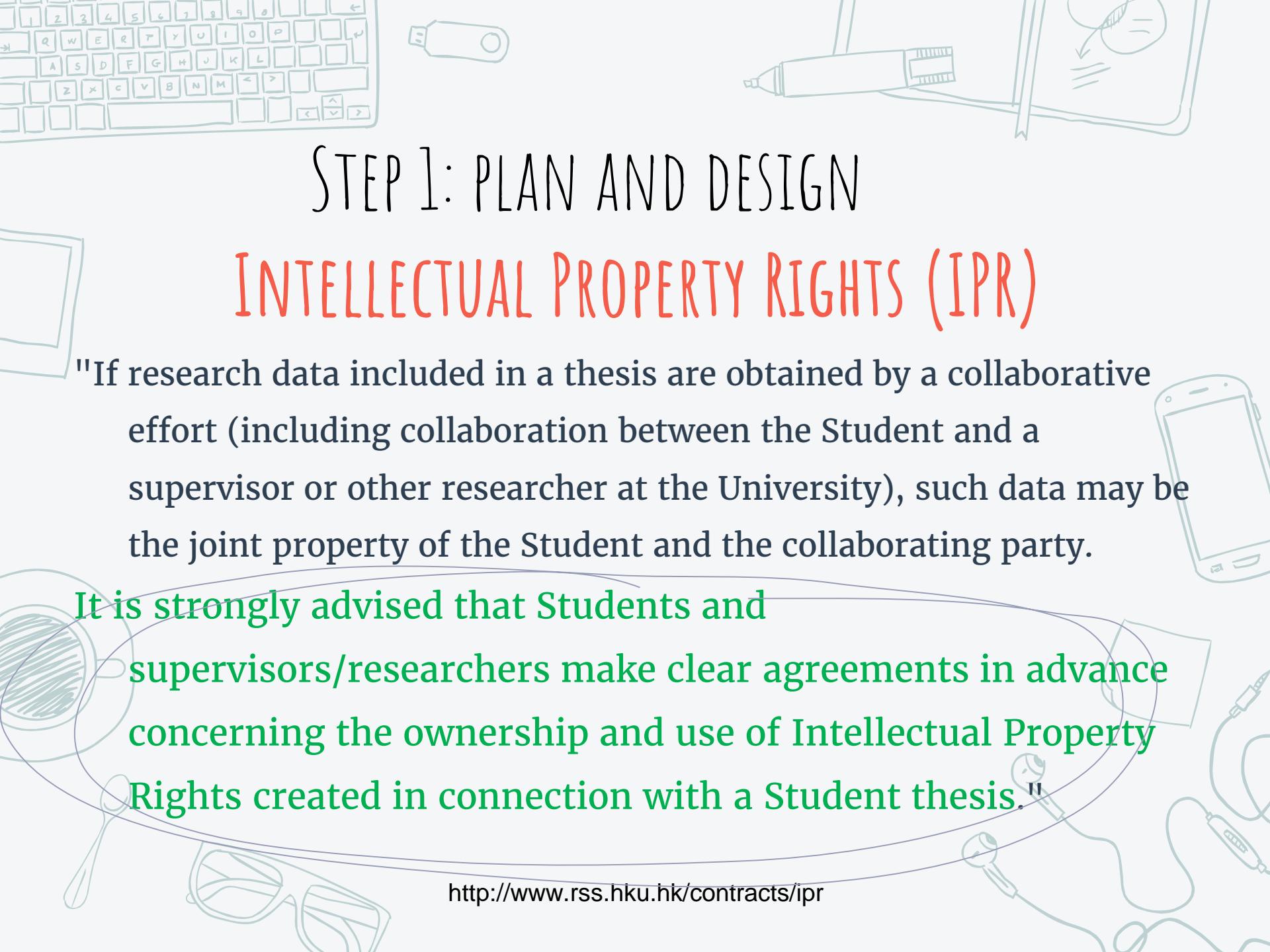


STEP 1: PLAN AND DESIGN

INTELLECTUAL PROPERTY RIGHTS (IPR)

- × Intellectual property rights (IPR) include copyright, patents, trademarks and design rights.
- × The HKU Intellectual Property Rights Policy sets out ownership of intellectual property rights of staff and students and explains the University position on both copyright and patents.

<http://www.rss.hku.hk/contracts/ipr>

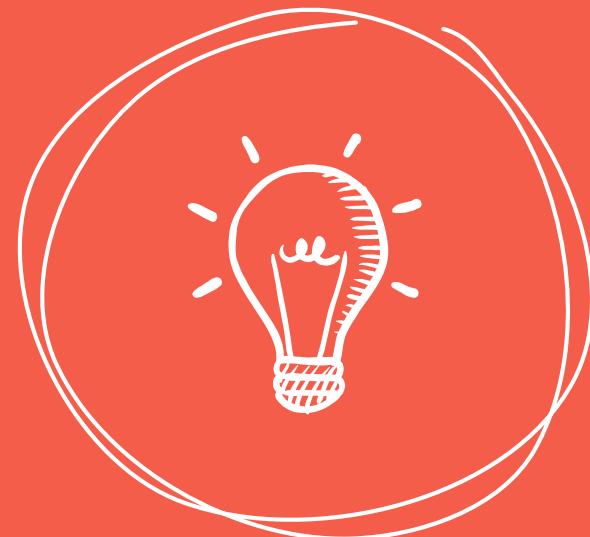


STEP 1: PLAN AND DESIGN

INTELLECTUAL PROPERTY RIGHTS (IPR)

"If research data included in a thesis are obtained by a collaborative effort (including collaboration between the Student and a supervisor or other researcher at the University), such data may be the joint property of the Student and the collaborating party.

It is strongly advised that Students and supervisors/researchers make clear agreements in advance concerning the ownership and use of Intellectual Property Rights created in connection with a Student thesis."



5. DATA MANAGEMENT PLAN (DMP)



DATA MANAGEMENT PLAN (DMP)

A digital document in which you describe

what data you will collect during your research project, **FORMAT, TYPES, VOLUME, OWNERSHIP...**

how you are going to store and manage the data during the project, **FILE ORGANIZATION, METADATA, ACCESS...**

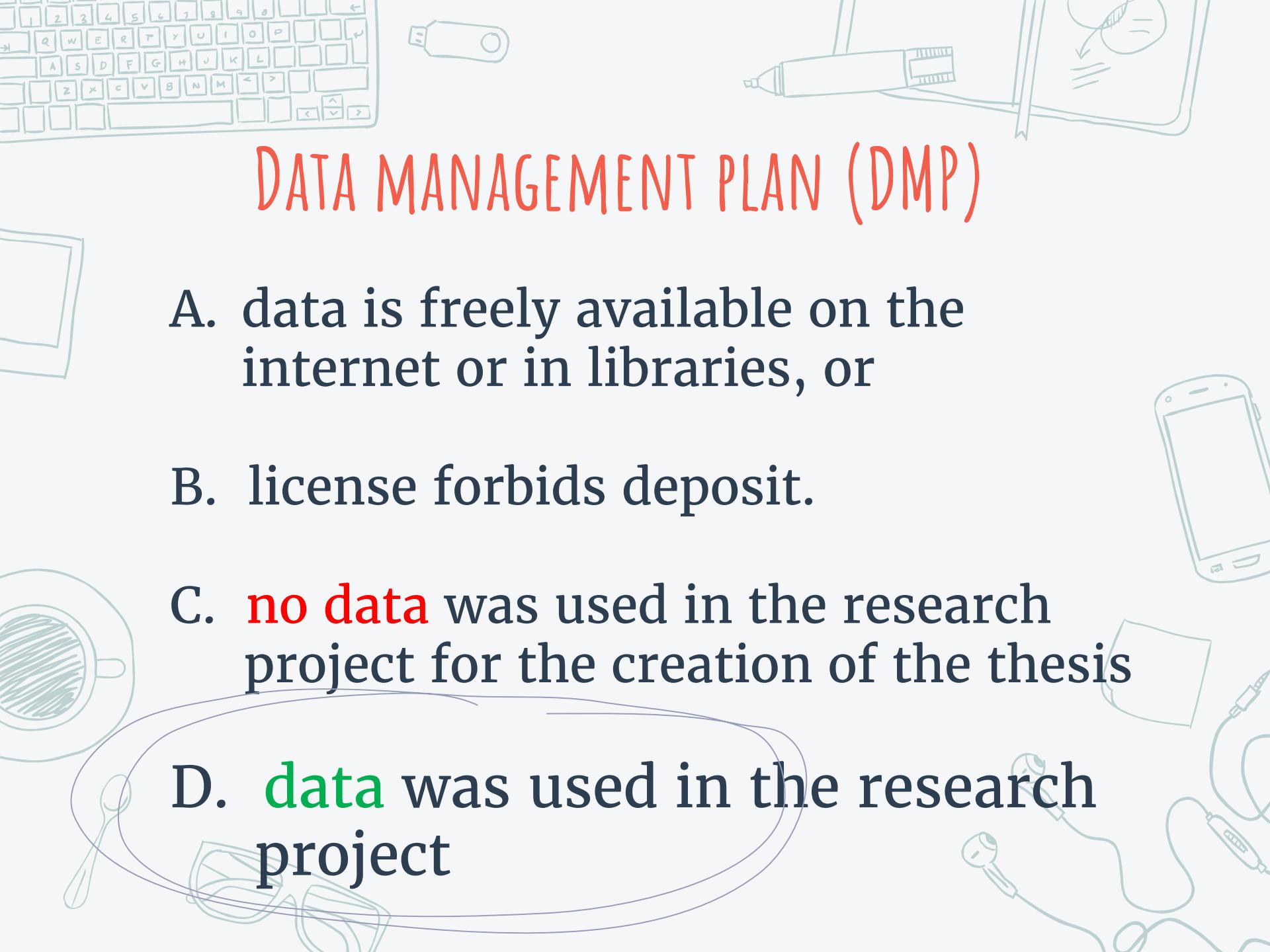
And what will happen to the data after the project is finished.

PRESERVATION AND SHARING...

6.

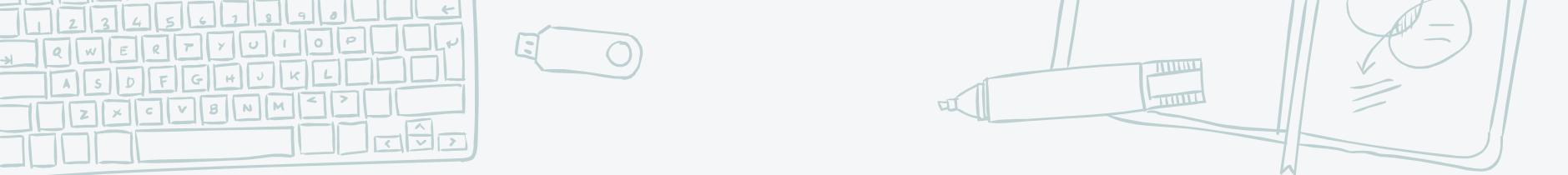
WHO NEEDS TO SUBMIT A DATA MANAGEMENT PLAN





DATA MANAGEMENT PLAN (DMP)

- A. data is freely available on the internet or in libraries, or
- B. license forbids deposit.
- C. **no data** was used in the research project for the creation of the thesis
- D. **data** was used in the research project



DATA MANAGEMENT PLAN (DMP)

The University of Hong Kong
Libraries The University has a [Policy on the Management of Research Data and Records](#). Please refer to the [HKUL Research Data Services](#) webpages for more information.

Signed in as

DMP Roadmap [Templates](#) [Guidance](#) [Organisation details](#) [Users](#)

Templates

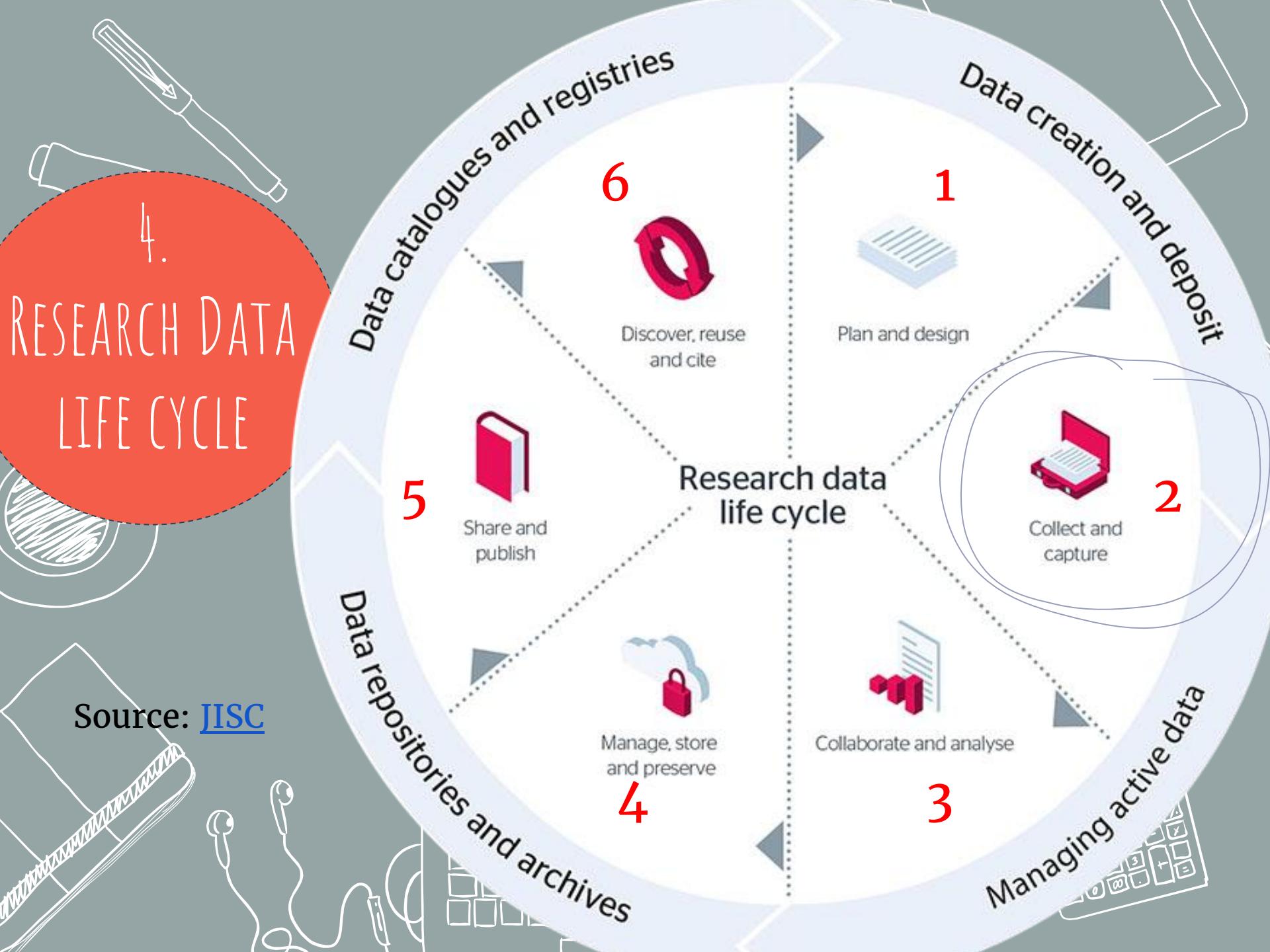
Own templates

If you wish to add an institutional template for a Data Management Plan, use the 'create template' button. You can create more than one template if desired e.g. one for researchers and one for PhD students.

[Create a template](#)

Your template will be presented to users within your institution when no funder templates apply. If you want to add questions to funder templates use the 'customise template' options below.

Title	Description	Status	Last updated	Actions
HKU Template for RPg Students	The default template	Unpublished changes	11-10-2017	Edit History Publish changes
HKU template for RPG Students	New template	Unpublished	12-10-2017	Edit History Publish



STEP 2: COLLECT AND CAPTURE



STEP 2: COLLECT AND CAPTURE

A) STORAGE AND BACKUP



How much storage

How fast will the data grow

Who has access

Safe and secure

Need to encrypt your data

A) STORAGE AND BACKUP

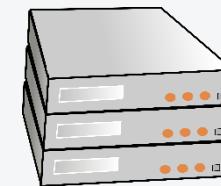
Don't put
all the eggs
in one
basket

STEP 2: COLLECT AND CAPTURE

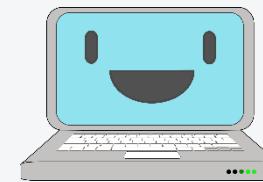
A) STORAGE AND BACKUP

3-2-1 RULE

3 copies
2 media
1 offsite



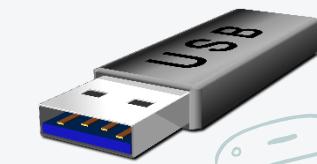
Networked drives



Personal computer



CD/DVD



USB



External hard drive



Cloud

STEP 2: COLLECT AND CAPTURE

A) STORAGE AND BACKUP

3-2-1 RULE

3 copies

2 media

1 offsite

1. One original/master copy
 2. External/local/another media
 3. External/remote
- Longer recovery time
Geographically distributed

STEP 2: COLLECT AND CAPTURE

B) ORGANIZE YOUR FILES

Example·A¶



Documents library

PhD data

- 📁 25July
- 📁 Documents
- 📁 Experiments
- 📁 Experiments2
- 📁 From desktop
- 📁 Important
- 📁 Other
- 📁 PhD
- 📁 Talks
- Experiment 1
- Lab meeting FINAL
- Meeting notes
- My talk
- Paper submission
- PhD revised

Example·B¶



Documents library

PhD data2

- Conferences
- Downloaded publications
- Experimental data
- Financial documents
- PhD thesis
- Presentations
- Protocols
- Reagents
- Reports
- Training

Source: [Cambridge University](#)

STEP 2: COLLECT AND CAPTURE

C) NAME MATTERS

Example: **DryValleySoil_ICPOES_v01_20101115_JDS.dat**

- Project name
- Instrument
- Version
- Date
- Researcher



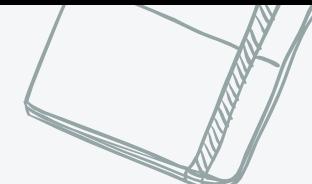


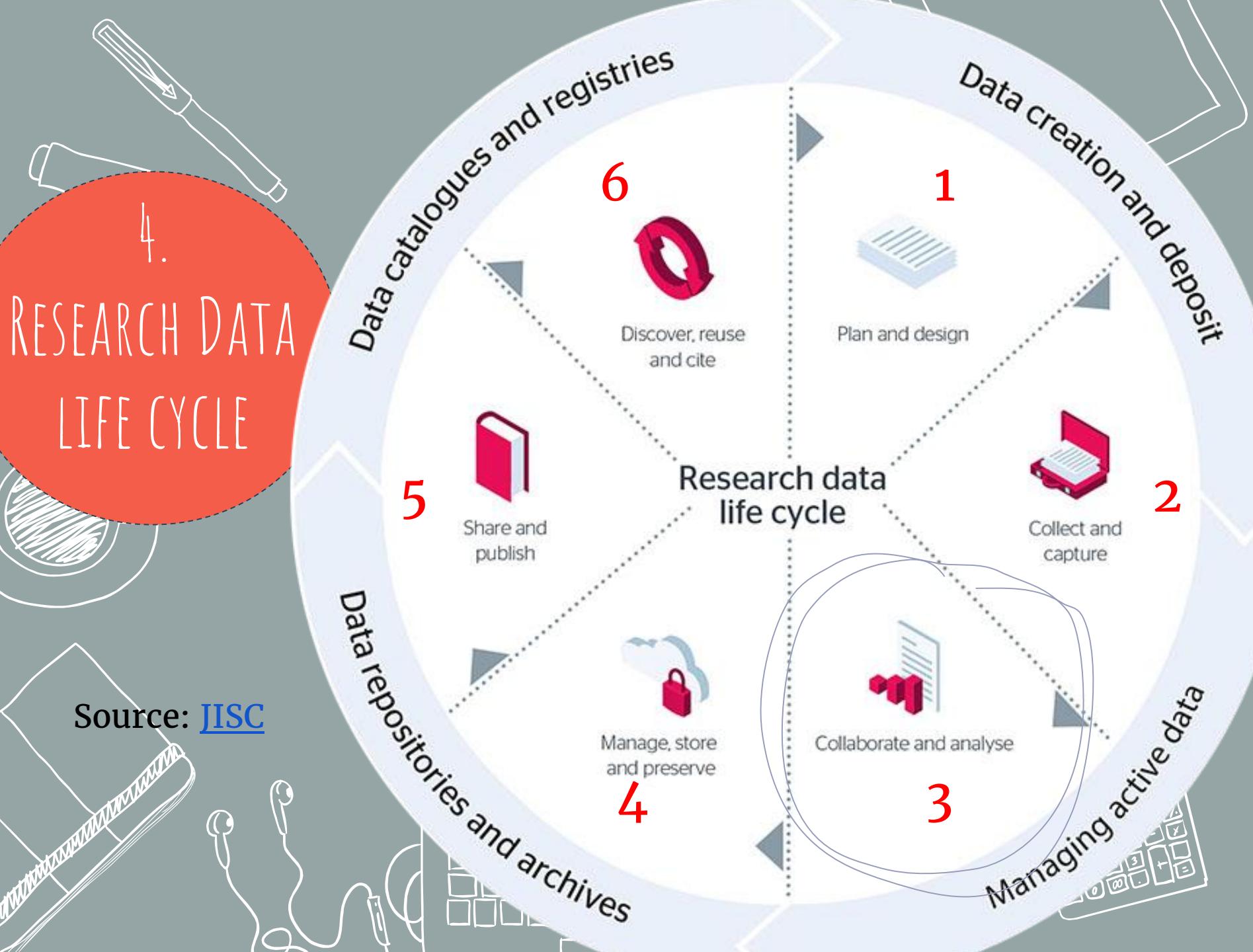
3. Have colleagues corroborate events and facts.



Guide to Keeping a Lab Notebook

<https://www.youtube.com/watch?v=MgVbXMD-e-w>





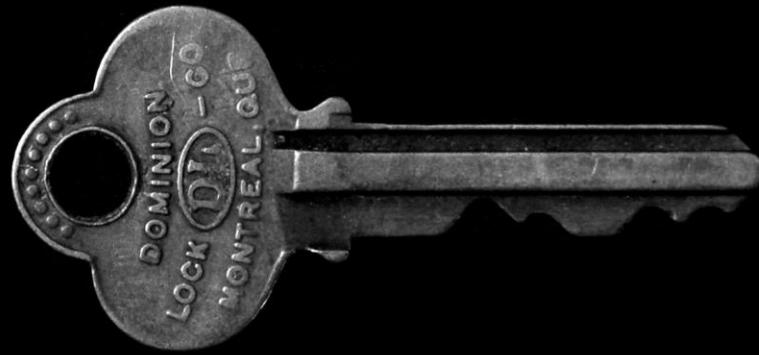
STEP 3: COLLABORATE AND ANALYZE

Version
Control





LENDAR.

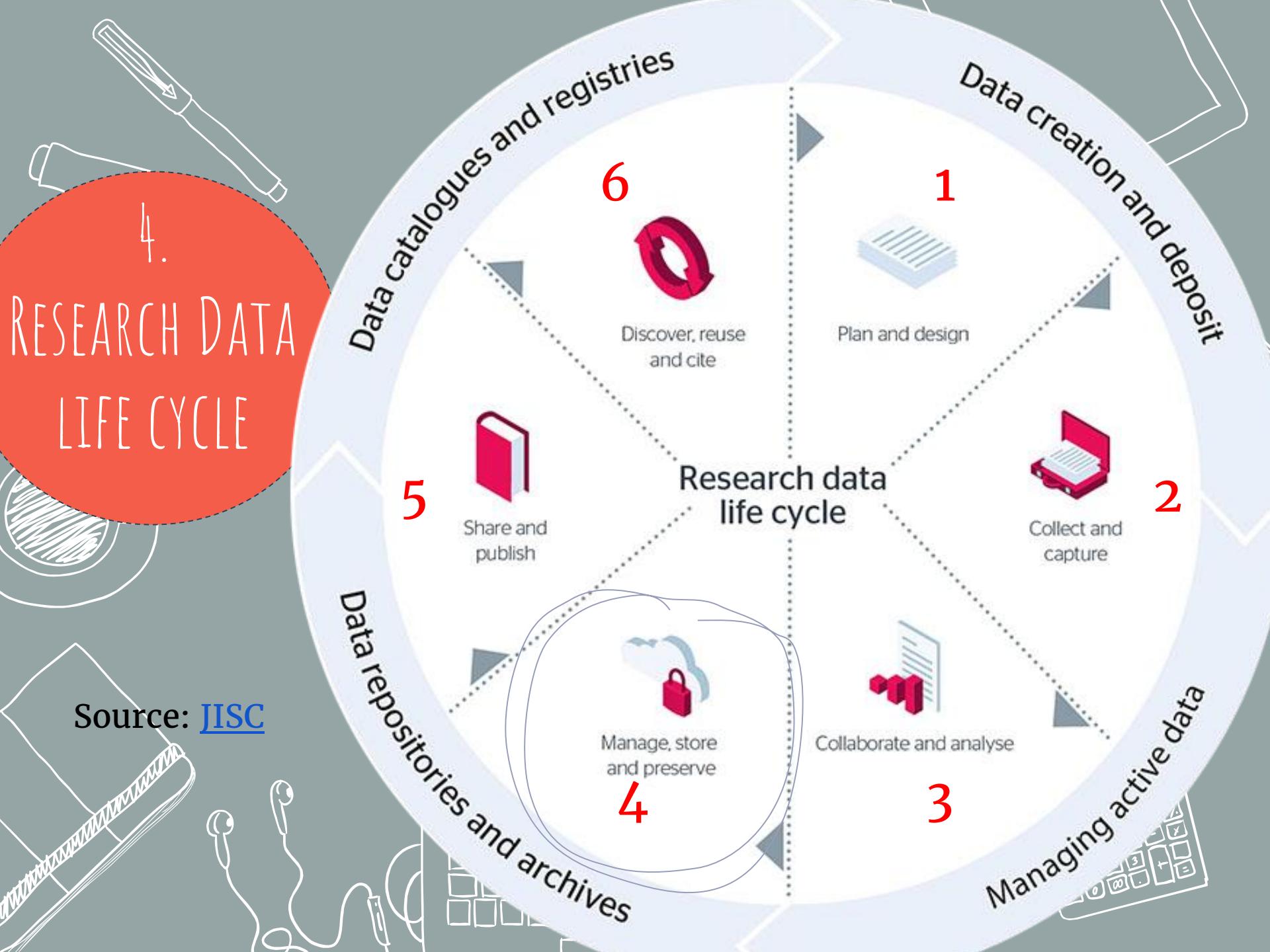


Access Control

STEP 3: COLLABORATE AND ANALYZE

- ✗ Many software available, but application depends on fields and own preferences.
- ✗ Important to describe and document analysis.





STEP 4: MANAGE, STORE AND PRESERVE

A) METADATA

DATA ABOUT DATA



STEP 4: MANAGE, STORE AND PRESERVE

A) METADATA

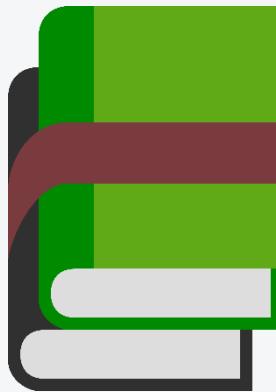
Title	Commercial buildings in Central
Description	Prince's Building and Queen's Building (now the Mandarin Oriental), St. George's Building, King's Building and Hotel Mansions (now Chater House).
Date	1908
Digital Collection	<u>Dezső Bozóky Photographic Collection</u>
Category	<u>Commercial Buildings</u>
District	<u>Central District</u>
Place	<u>Central District</u>
Resource Type	Still Image
Source	The Ferenc Hopp Museum of Asiatic Arts
Original Repository	The Ferenc Hopp Museum of Asiatic Arts
Accession No.	DEZSO-88
Collection	Hong Kong Image Database http://digital.lib.hku.hk/hkimage/collections?PID=84345

STEP 4: MANAGE, STORE AND PRESERVE

A) DOCUMENTATION



**Readme
file**



**Codebook/
Data dictionary**



**Electronic Lab
Notebooks**

STEP 4: MANAGE, STORE AND PRESERVE

B) STANDARD METADATA

Title	Commercial buildings in Central
Description	Prince's Building and Queen's Building (now the Mandarin Oriental), St. George's Building, King's Building and Hotel Mansions (now Chater House).
Date	1908
Digital Collection	<u>Dezső Bozóky Photographic Collection</u>
Category	<u>Commercial Buildings</u>
District	<u>Central District</u>
Place	<u>Central District</u>
Resource Type	Still Image
Source	The Ferenc Hopp Museum of Asiatic Arts
Original Repository	The Ferenc Hopp Museum of Asiatic Arts
Accession No.	DEZSO-88
Collection	Hong Kong Image Database http://digital.lib.hku.hk/hkimage/collections?PID=84345

STEP 4: MANAGE, STORE AND PRESERVE

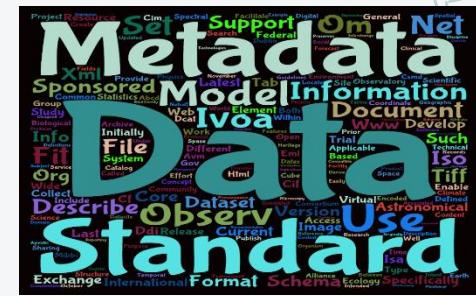
B) STANDARD METADATA



In general, just Dublin Core



Mainly based on DC,
DataCite is also
commonly used



Also, there are **subject-specific** schema and tools

 [File Download](#)

There are no files associated with this item.

[Contact the author\(s\)](#) [Links for fulltext](#)

(May Require Subscription)

- Publisher

Website: [10.1016/j.biocon.2017.02.017](https://doi.org/10.1016/j.biocon.2017.02.017)

 [Supplementary](#) [Appears in Collections:](#)

- [Biological Sciences: Journal/Magazine Articles](#)

Am score 1

On 1 Facebook pages

See more details

8 readers on Mendeley

Article: Delineation of core terrestrial habitat for conservation of a tropical salamander: The Hong Kong newt (*Paramesotriton hongkongensis*)

[Show simple item record](#)[Show full item record](#)[Export item record](#)

DC Field	Value	Language
dc.contributor.author	LAU, YKA	-
dc.contributor.author	Karraker, NE	-
dc.contributor.author	Martelli, P	-
dc.contributor.author	Dudgeon, D	-
dc.date.accessioned	2017-09-18T02:18:12Z	-
dc.date.available	2017-09-18T02:18:12Z	-
dc.date.issued	2017	-
dc.identifier.citation	Biological Conservation, 2017, v. 209, p. 76-82	-
dc.identifier.uri	http://hdl.handle.net/10722/245861	-
dc.language	eng	-
dc.relation.ispartof	Biological Conservation	-
dc.title	Delineation of core terrestrial habitat for conservation of a tropical salamander: The Hong Kong newt (<i>Paramesotriton hongkongensis</i>)	-
dc.type	Article	-
dc.identifier.email	Dudgeon, D: ddudgeon@hku.hk	-
dc.identifier.authority	Dudgeon, D=rp00691	-
dc.identifier.doi	10.1016/j.biocon.2017.02.017	-
dc.identifier.hkuros	278134	-

STEP 4: MANAGE, STORE AND PRESERVE

c) FILE FORMATS

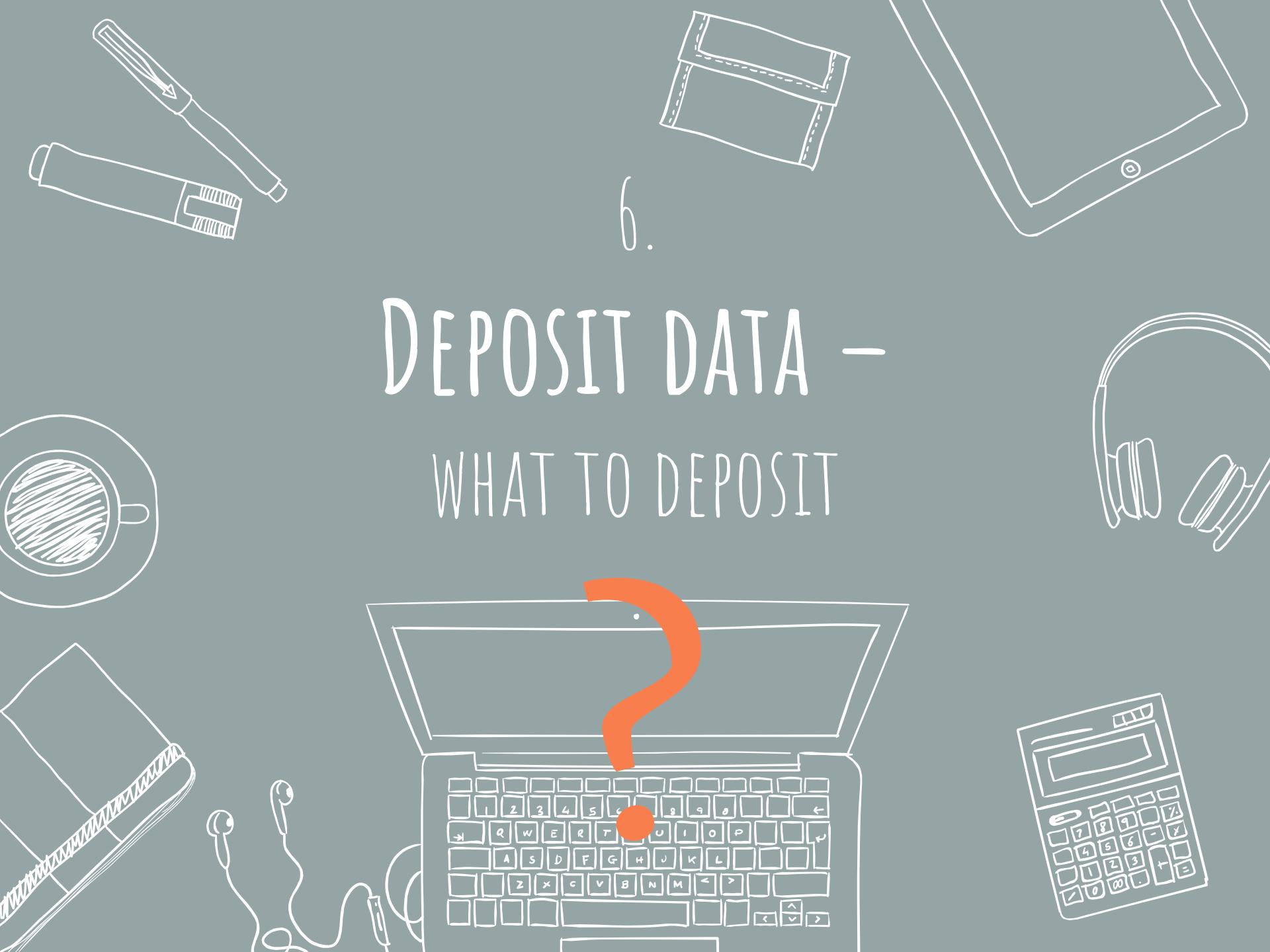
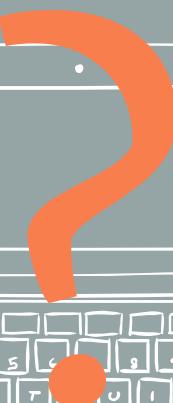
- ✓ Where possible, use **open formats**

Type of data	Recommended formats
Tabular	CSV, TAB
Textual	RTF, TXT, XML
Image	TIF
Audio	WAV, FLAC
Video	MP4 , OGV, OGG, MJ2
Documentation and scripts	RTF, PDF, XHTML, HTM, ODT

Best practices: [UK Data Service](#), [Stanford University](#)

6.

DEPOSIT DATA - WHAT TO DEPOSIT



STEP 4: MANAGE, STORE AND PRESERVE

WHAT TO DEPOSIT

“ The emphasis of the HKU RDM initiative is on "research integrity". Research results claimed in publications must be **reproducible**. Replication datasets must be preserved to enable this later reproducibility. All **data, scripts, questionnaires, codebooks** etc. necessary for a third party to arrive at the same research results claimed must be preserved. “

<https://lib.hku.hk/researchdata/data.htm>

STEP 4: MANAGE, STORE AND PRESERVE

WHAT TO DEPOSIT

Essential,

- Data Management Plan (DMP)
- Dataset(s) **quantitative** and/or **qualitative**, raw and/or **processed**,
- **Metadata** about all the data files including file formats (please use open formats wherever possible), **Code book** (i.e. description of variables), etc.
- **Readme file**, giving particulars of data

STEP 4: MANAGE, STORE AND PRESERVE

WHAT TO DEPOSIT

If data includes **personal data**, the data should be put under **restricted access**,

- **Personal data from clinical research** (i.e. Institutional Review Board (IRB) approved) [<https://www.med.hku.hk/research/research-ethics/human-ethics>]
- provide approval code, consent forms, ethical application form when available, please state the risk of re-identification from the different datafiles and how the risk has been minimised for any dataset intended for sharing.
- **Personal data from non-clinical research** (i.e. Human Research Ethics Committee (HREC) approved) [<http://www.rss.hku.hk/integrity/ethics-compliance/hrec>]
- provide approval code, consent forms, ethical application form, please state the risk of re-identification from the different datafiles and how the risk has been minimised for any dataset intended for sharing.

STEP 4: MANAGE, STORE AND PRESERVE

WHAT TO DEPOSIT

If data includes **interviews**,

- Interview transcripts
- Blank questionnaire & interviewer guidelines

If **field research data**,

- provide copy of file research notebook in digital format, preferably machine readable

If **lab research data**,

- of working papers and/or lab research notebooks in digital format, preferably machine readable

STEP 4: MANAGE, STORE AND PRESERVE

WHAT TO DEPOSIT

For **simulated data**,

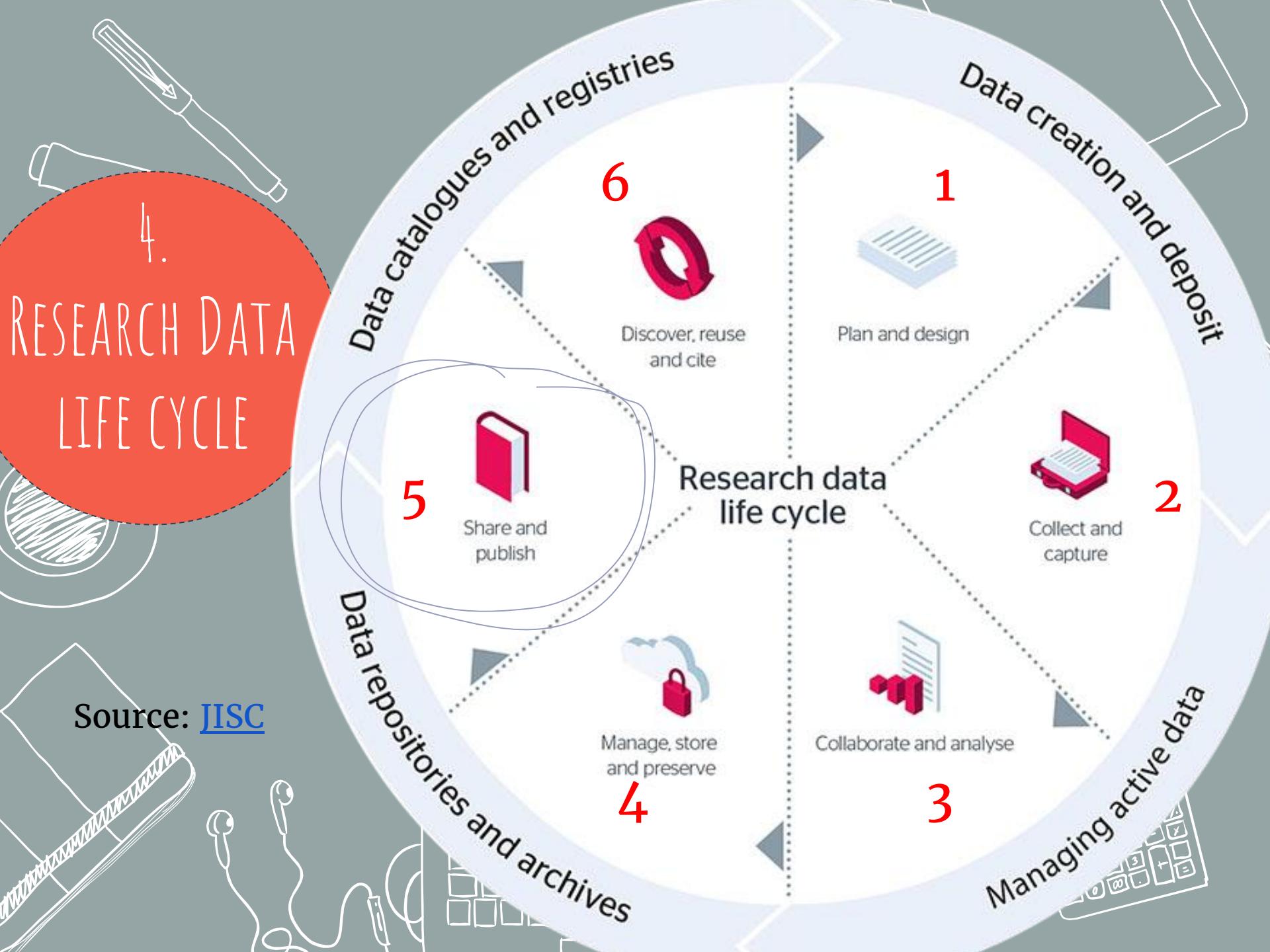
- how was it generated? Please either explain or provide a link.

For **other types** of data, such as **Image or video data, Creative or Design data**,

- please explain what type of data and how was it collected/generated.

If **software** is needed to read or analyze any of the datafiles,

- please provide full details of software name, version needed, and any instructions necessary to obtain the software. If you have written your own script for analyzing the data, please include this script also in final deposit.



STEP 5: SHARE AND PUBLISH

THE HONG KONG RESEARCH GRANTS COUNCIL (RGC)

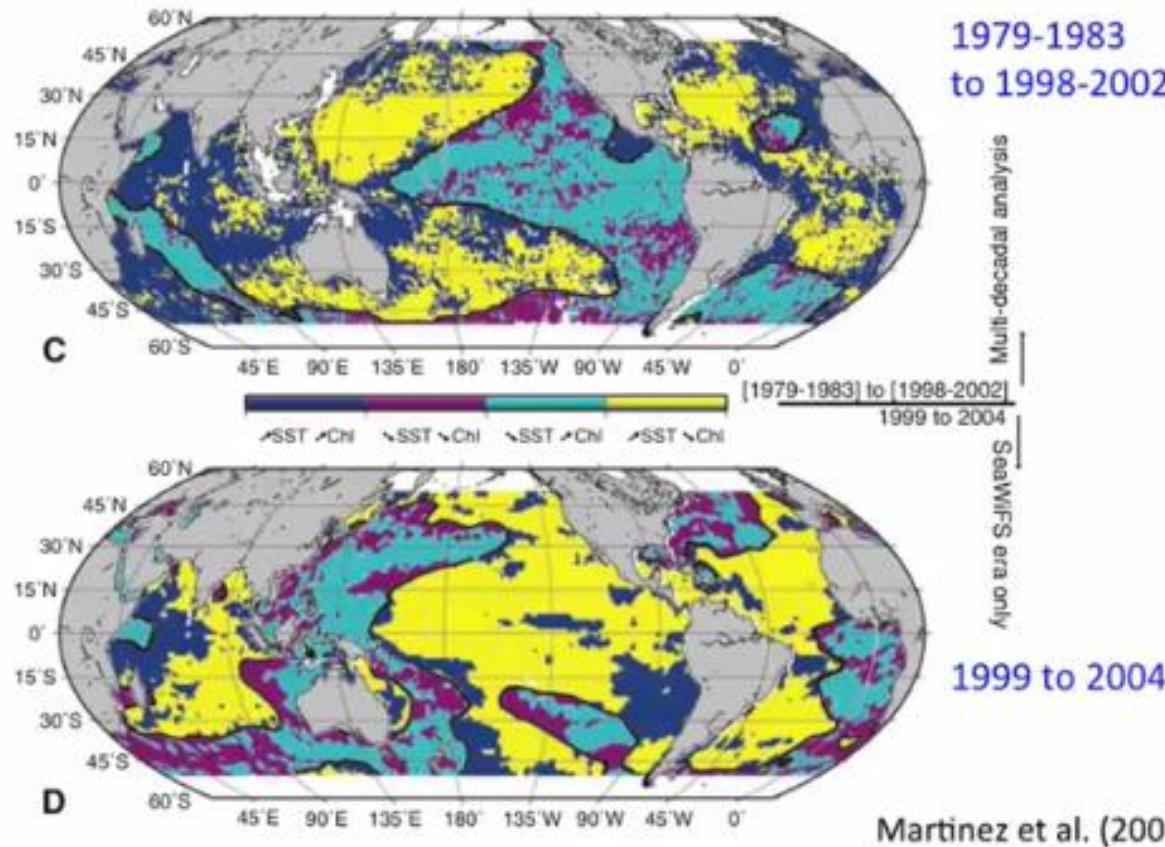
**General Research Fund (GRF) Explanatory Notes for
2016/17 applications**

"PI should assess data archive potential and opportunities for data sharing. **Due additional weight** will be given to an application where the applicants are willing to **make research data available to others.**"

<http://www.ugc.edu.hk/doc/eng/rgc/form/GRF2.pdf>

STEP 5: SHARE AND PUBLISH

Multi-decadal changes in chlorophyll related to changes in SST



Ocean-colour data in climate studies.

<https://www.youtube.com/watch?v=jmfuPE2C8nQ>

Zika researchers release real-time data on viral infection study in monkeys

Raw data from macaque experiment published daily online.

Declan Butler

23 February 2016



Rights & Permissions



Kristi L. Hall

Gabrielle Lehrer-Brey, part of a team that is experimentally infecting macaques with Zika virus, works with blood-plasma samples at the University of Wisconsin-Madison.

The undead



To stay young, kill zombie cells

Killing off cells that refuse to die on their own has proved a powerful anti-ageing strategy in mice. Now it's about to be tested in humans.

Recent

Read

Commented

1. [Camouflage plumage patterns offer clue to dinosaur's habitat](#)

Nature | 26 October 2017

2. [China announces plans to fast-track drug approval](#)

Nature | 26 October 2017

3. [Bitter CRISPR patent war intensifies](#)

Nature | 26 October 2017

nature
briefing



The best science news from *Nature* and beyond.

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Altmetric: 37

More detail ▾



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E-alert



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Share



Share

Tools ▾

Editorial

Don't wait to share data on Zika

During public health emergencies, such as the current increase in microcephaly and neurological syndromes potentially associated with the Zika virus outbreak, a rapid and coordinated response necessitates the immediate sharing of data. *Nature Microbiology* policy is fully aligned with this imperative.

Much has been written and broadcast about Zika virus in recent weeks as the world wakes up to a problem that has been growing in South America for many months (for an overview, see refs 1,2,3). Despite this increased attention, we still know relatively little about the current outbreak and its potential impact. On 1 February 2016, following an emergency committee convened to consider the rapid spread of Zika virus and the potential links to birth defects and neurological syndromes, the WHO declared a 'public health emergency of international concern'. Raising the status of the situation will help to better coordinate necessary research into the epidemiology and virology of Zika virus and provide insight into the many questions that currently remain unanswered.

Sections

References

Info

References



European
Commission



OPEN RESEARCH DATA IN HORIZON 2020

CHALLENGE

Wider access to scientific facts and knowledge helps researchers, innovators and the public find and re-use data and

SOLUTION

Horizon 2020 already mandates open access to **all scientific publications**

CHALLENGE

Wider access to scientific facts and knowledge helps researchers, innovators and the public find and re-use data, and check research results:

offers better value for EU research funds



a public benefit

encourages research across scientific fields



essential for solving today's complex societal challenges

SOLUTION

Horizon 2020 already mandates open access to **all scientific publications**



From 2017,
research data is open by default,
with possibilities to **opt out**

STEP 5: SHARE AND PUBLISH

OPEN ACCESS

HOW TO ACHIEVE OPEN ACCESS IN HORIZON 2020



deposit the final peer-reviewed manuscript in a repository of your choice.

Researchers must ensure open access to the publication within at most 6 months (12 months for publications in the social sciences and humanities).



publish in open access journals or in hybrid journals.

Article processing charges are eligible for reimbursement during the duration of your project. Hybrid journals sell subscriptions (i.e. closed access) AND offer the option of making some individual articles open access.



BOTH OPTIONS ARE POSSIBLE

if the gold route is chosen the article must also be deposited in a repository to comply

STEP 5: SHARE AND PUBLISH

OPEN ACCESS



The University of Hong Kong

The HKU Scholars Hub 香港大學學術庫



HELP



HKU Login
Guest Login

Home

Publications

Researchers

Organizations

Grants

Datasets

Theses

Patents

Community Service

Dataset

Browse

- Faculties
- Title
- Keyword
- RGC Code
- ANZSRC

Title

Enter Search Terms Here...

x +

Search Q

Discovery - Top 10

Department

centre for genomic sciences	(2)
centre on behavioral health with...	(1)
clinical trials centre	(2)
department of anaesthesiology	(1)

Faculty

faculty of architecture	(5)
faculty of arts	(1)
faculty of dentistry	(13)
faculty of engineering	(61)

Keyword

0.2	(1)
0.5 m distance	(1)
1 january 2009	(1)
1 unit increase	(1)

STEP 5: SHARE AND PUBLISH

A) NOT ALL DATA CAN BE SHARED



Copyrighted
data



Privacy,
confidential,
sensitive data



Data
supporting a
patent

Best practices: [UK Data Service](#), [ANDS](#)

STEP 5: SHARE AND PUBLISH

BEFORE YOU SHARE OR PUBLISH YOUR DATA

- Review the Depositor's Agreement, and Takedown Policy
- Perhaps you need to anonymize or redact your data before sharing?
- If you have created data which may have commercial value, please consult **Versitech**, or the **Technology Transfer Office**.

ANONYMIZE & REDACT

DEPOSIT DATA



“Before data obtained from research with people can be shared with other researchers or archived, you may need to anonymise them so that individuals, organisations or businesses cannot be identified... Re-users of data have the same legal and ethical obligation to NOT disclose confidential information as primary users.” (UK Data Archive)

Procedures to anonymise data should always be considered alongside obtaining informed consent for data sharing or imposing access restrictions.

A person's identity can be disclosed from direct identifiers such as names, addresses, telephone numbers or pictures. These can be easily redacted. More problematic is disclosive data or indirect identifiers which, when linked to other publicly available information sources, could identify someone. These include information on workplace, occupation, salary, age, etc. In recent years re-identification of subjects by combining DNA sequences with publicly available sources has gained notoriety.

Anonymising research data can be time consuming and therefore costly. Early planning can help reduce the costs. The HKU Policy on Research Integrity describes ethical data collection and storage. In some cases the researcher may wish to store two copies of the data, the original held in dark archive with or without an embargo period, and other redacted or anonymized for sharing.

<https://lib.hku.hk/researchdata/data3.htm>

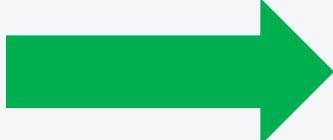
STEP 5: SHARE AND PUBLISH

B) LICENSES



Creative
Commons

Most
common

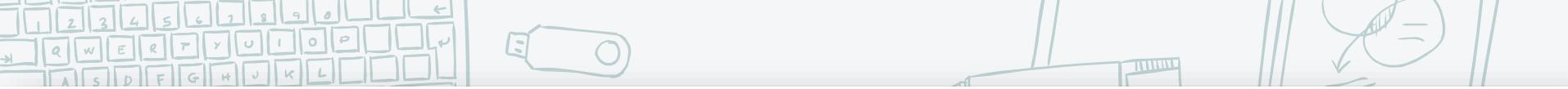


Attribution



Public domain

Best practice: [DCC](#)
Tool: [License Selector](#)



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STEP 5: SHARE AND PUBLISH

c) PLATFORMS



Data repositories

- National
- Institutional – **HKU Scholars Hub**
- Subject-specific

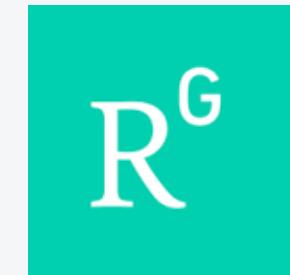
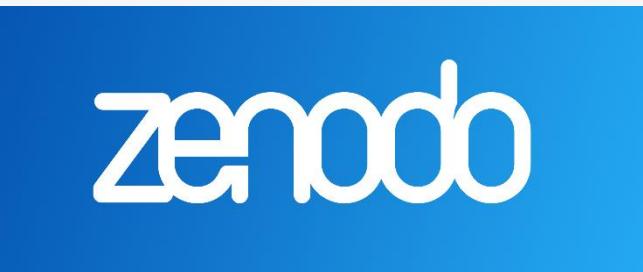


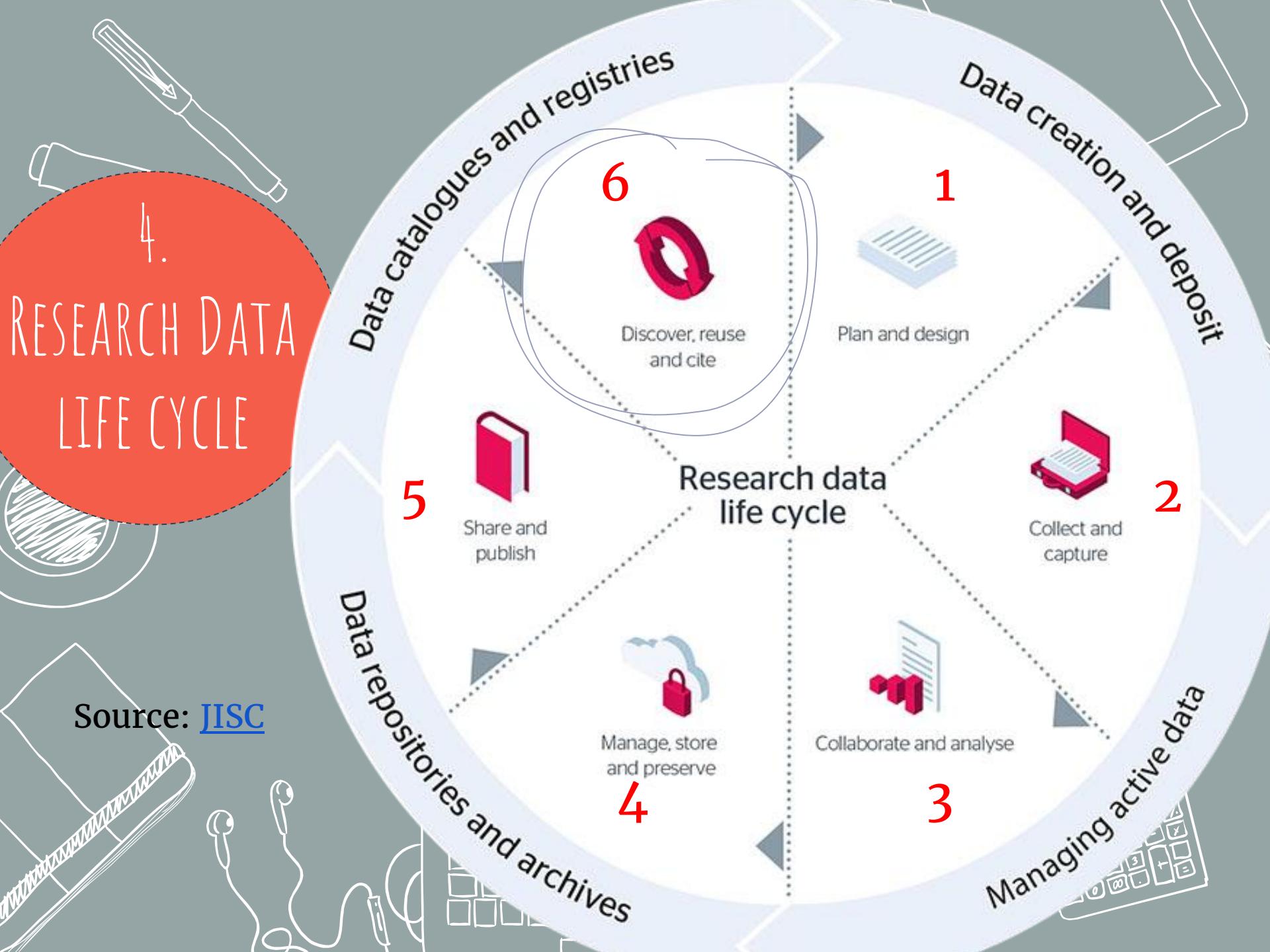
Data journals

- Subject-specific
- As paper or suppl. to journal article

STEP 5: SHARE AND PUBLISH

c) PLATFORMS





STEP 6: DISCOVER, REUSE AND CITE

A) DATA PORTALS



**Data Citation Index,
Web of Science**



**Data Search
(beta)**



DataCite



**Research Data
Australia**



**Re3data
(find a specific repository)**

and...



STEP 6: DISCOVER, REUSE AND CITE

B) DATA CITATION

Bacon-Shone, J, Bolton, K, Luke, KK. (2016). Data from LANGUAGE USE, PROFICIENCY AND ATTITUDES IN HONG KONG. (Dataset) The University of Hong Kong, Pokfulam, Hong Kong SAR.

http://dx.doi.org/10.5353/ds_dataset95133

Creator. (Publication year). **Title.** Publisher. Identifier

Community standard only. If applicable, also include version and resource type.



SUMMARY

1) PLAN & DESIGN

- Data management plan (DMP)



4) MANAGE, STORE & PRESERVE

- Metadata
- Documentation
- File formats



2) COLLECT & CAPTURE

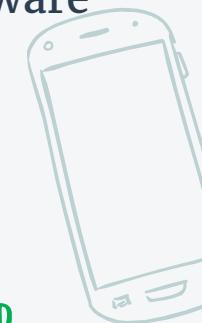
- Confidentiality, ethics and consent
- File organization
- File naming
- Storage & backup

5) SHARE & PUBLISH

- Intellectual Property Rights (IPR)
- Licences
- Patents
- Platforms

3) COLLABORATE & ANALYZE

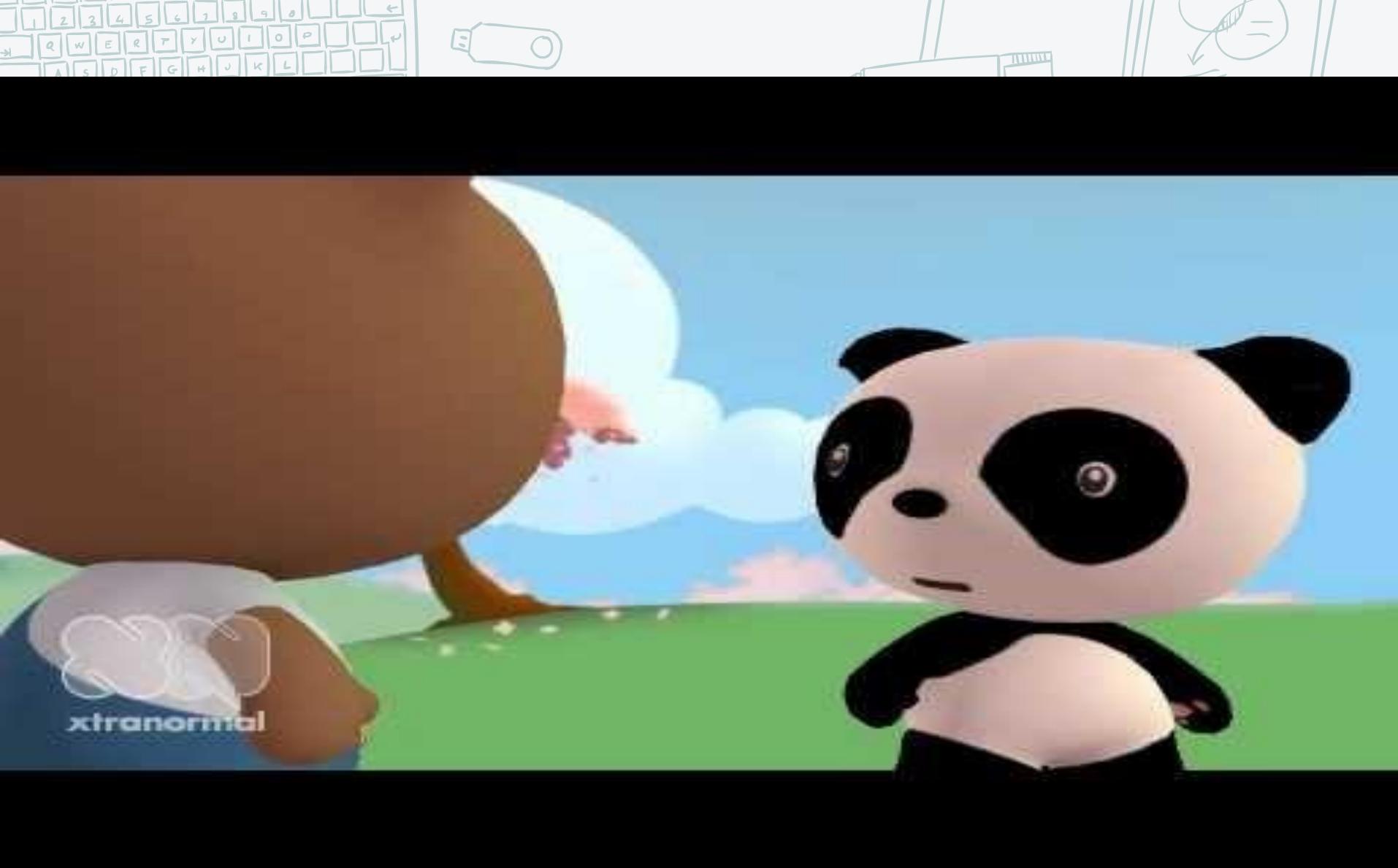
- Research software



6) DISCOVER, REUSE & CITE

- Data portals
- Data citation





Data Sharing and Management Snafu in 3 Short Acts

[NYU Health Sciences Library](#) Published on Dec 19, 2012

A data management horror story by Karen Hanson, Alisa Surkis and Karen Yacobucci.
<https://www.youtube.com/watch?v=N2zK3sAtr-4>



THINK OF PLANNING

AS A

PROCESS,

NOT A ONE OFF TASK

Good practice to revisit and revise plans regularly

LEARNING RESOURCES

<https://lib.hku.hk/researchdata/resources.htm>

The screenshot shows the homepage of the HKU Research Data Services website. At the top, there's a navigation bar with links for RPG STUDENTS, RESEARCH STAFF, RDM, METADATA, DEPOSIT DATA, RESOURCES, and HELP. Below the navigation is a large section titled "RESEARCH DATA SERVICES" with a logo of a building. To the right, there's a section titled "RESOURCES - ONLINE TRAINING, GUIDES & TOOLS" featuring a green globe icon. A hand holds a white card with the globe icon against a green background. Below this is a "TRAINING & TUTORIALS" section with a list of links:

- University of Minnesota, [Online Data Management Course](#)
- EDINA, University of Edinburgh, [Mantra Research Data Management Training](#)
- EDINA, University of Edinburgh, [Mantra, Data Handling Tutorials \(SPSS 19, R, ArcGIS 10.2, and NVivo 9\)](#)
- UK Data Service, [Video Tutorials](#)
- DCC, [Digital Curation 101 Materials](#)

On the left side of the main content area, there are three smaller sections: "RESOURCES - ONLINE TRAINING, GUIDES & TOOLS" with a globe icon, "HKU RESOURCES FOR RDM", and "RDM FOR RESEARCH POSTGRADUATE (RPG) STUDENTS" with a graduation cap icon.

LEARNING RESOURCES

RESEARCH DATA MANAGEMENT AND SHARING

- MOOC Jointly offered by UNC (University of North Carolina – Chapel Hill) and Edinburgh University

<https://www.coursera.org/learn/data-management>

MANTRA: RESEARCH DATA MANAGEMENT TRAINING

- Online modules Developed by Edinburgh University

<http://datalib.edina.ac.uk/mantra/>

CREDITS

Special thanks to all the people who made and released these awesome resources for free:

- ✗ Presentation template by [SlidesCarnival](#)
- ✗ Photographs by [Unsplash](#)
- ✗ Cliparts by [openclipart](#)
- ✗ Content adopted from presentations by
 - Antonia Yiu, Associate Librarian, Scholarly Communication and Information Services,
 - Fred Chan, former Research and Data Services Librarian, and
 - Mariette van Selm, Information Specialist at UvA on [figshare](#)