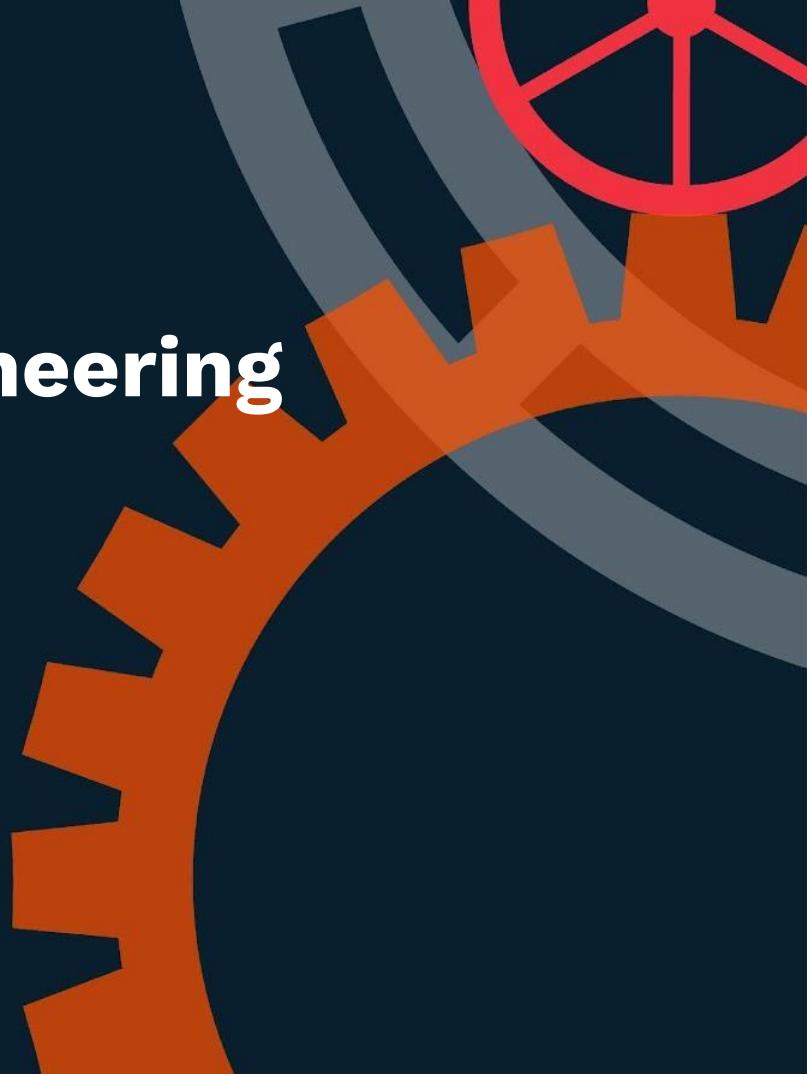


The Alan Turing Institute

Digital Humanities & Research Software Engineering Summer School

26-30 July 2021



Digital researchers and data experts

We create digital tools
to explore academic
research in new ways.

Neil Jakeman

Senior RSE Analyst

@kingsdigitallab

neil.jakeman@kcl.ac.uk

kdl-info@kcl.ac.uk



Overview of the Day

- 10.00 Intro and overview (Neil Jakeman)
- 10.20 Talk: Software Development Life Cycle: Rationale, Procedures and Documentation (Neil Jakeman)
- 11.00 Morning break
- 11.10 Design Integration Presentation (Dreaming Spires)
- 12:00 Lunch
- 13:00 Exercises - Role play project planning
- 14:20 Afternoon Break
- 14:30 Design Activity - Dreaming Spires
- 15:00 DH Reflections on problem projects with Neil Jakeman
- 15:30 Iteration Activity
- 16:00 RSE Stories - Edd Salkield (Dreaming Spires)
- 17:00 Wrap up

- **Keep schtum and keep it in the chat**
- **Keep your video on if you can**
- **If my fire alarm goes off, you'll probably be ok**

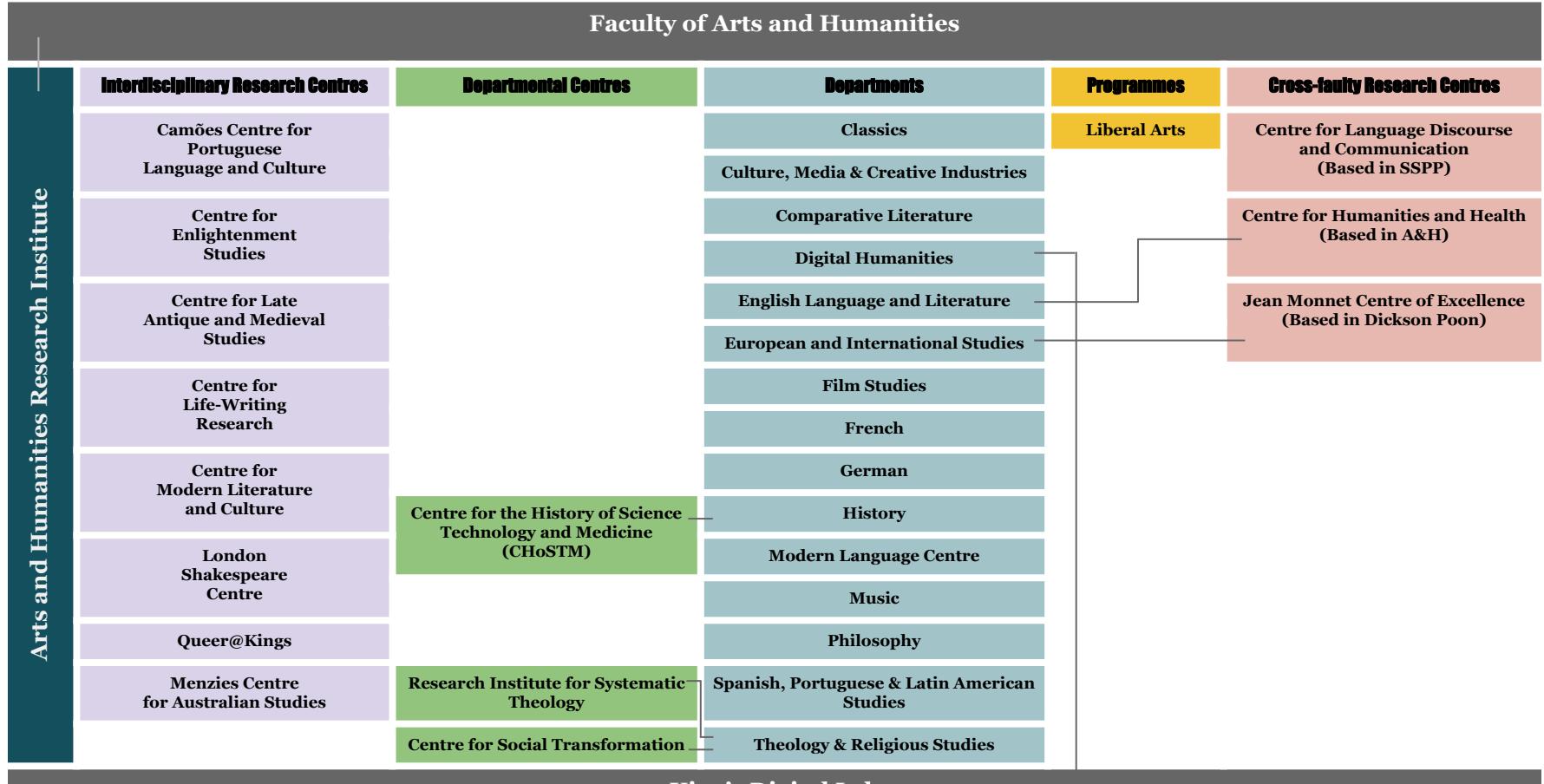
@kingsdh

30 years of activity, against a background of rapid innovation and change in Humanities Computing and Digital Humanities

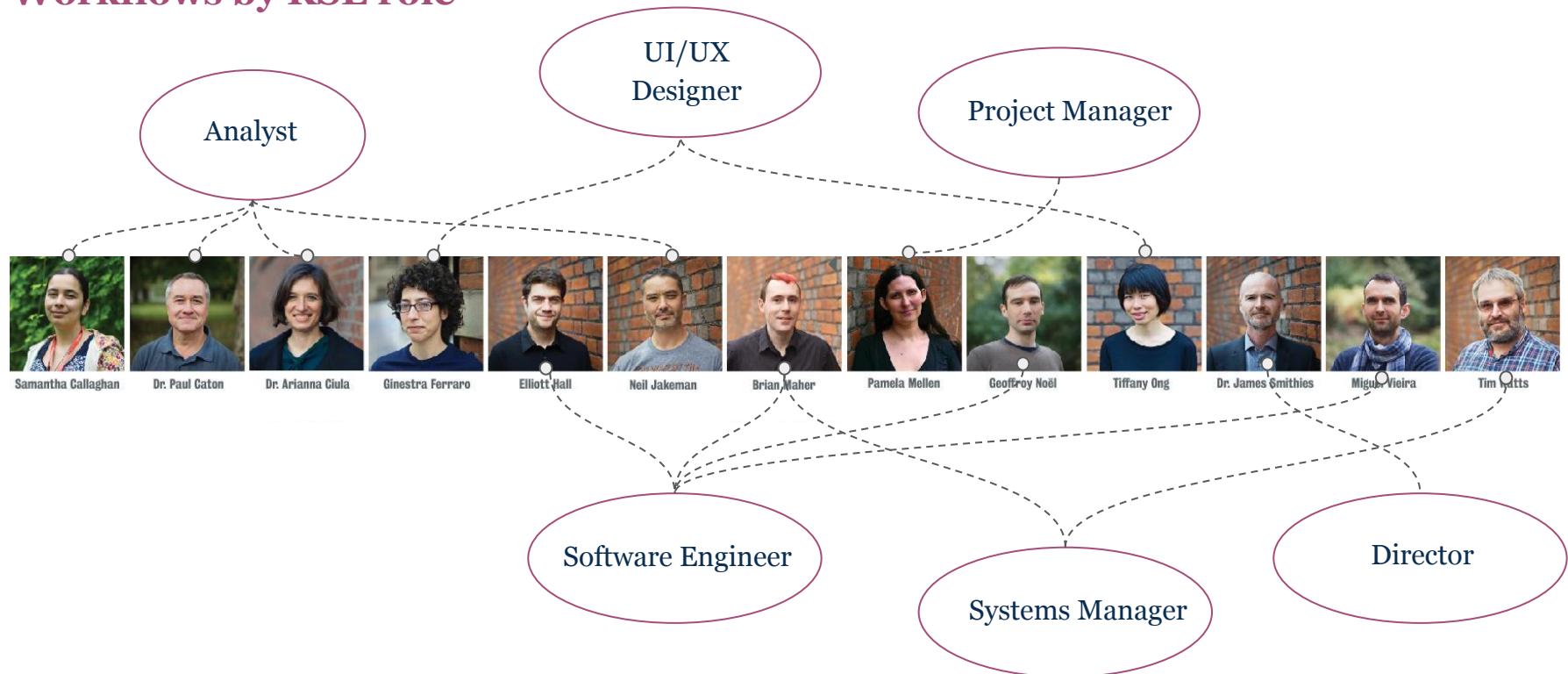
Centre for Computing in the Humanities (1991) - Prof. Harold Short

Department of Digital Humanities (2011-):

- ~450 students across 5 Masters and 1 Undergraduate degrees
- PhD programme
- ~30 staff including researchers and teaching fellows



Workflows by RSE role



Smithies (2019), [The Continuum Approach to Career Development](#).

Our work ranges from the development of historical databases and digital archives, digital scholarly editions, map-based tools, data and text analysis, visualization, and eBooks.



Archetype
An integrated suite of web-based tools for the study of medieval handwriting, art and iconography.



City Witness
Was the brigand William Cragh spared by divine intervention?



Atlantic Europe in the Metal Ages
Where did the Celtic language and people migrate from?



Gough Map
Who created the Gough Map, and why?



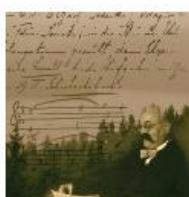
German Screen Studies Network
Designing a platform for online debate on German-language screen culture



The Values of French
Interrogating the role of the French language in the emergence of a European identity in the Middle Ages



Paradox of Medieval Scotland
Examining the roles and relationships of medieval Scottish society



Schenker Documents Online
How can we present and contextualize thousands of personal papers to convey an enduring theoretical influence?

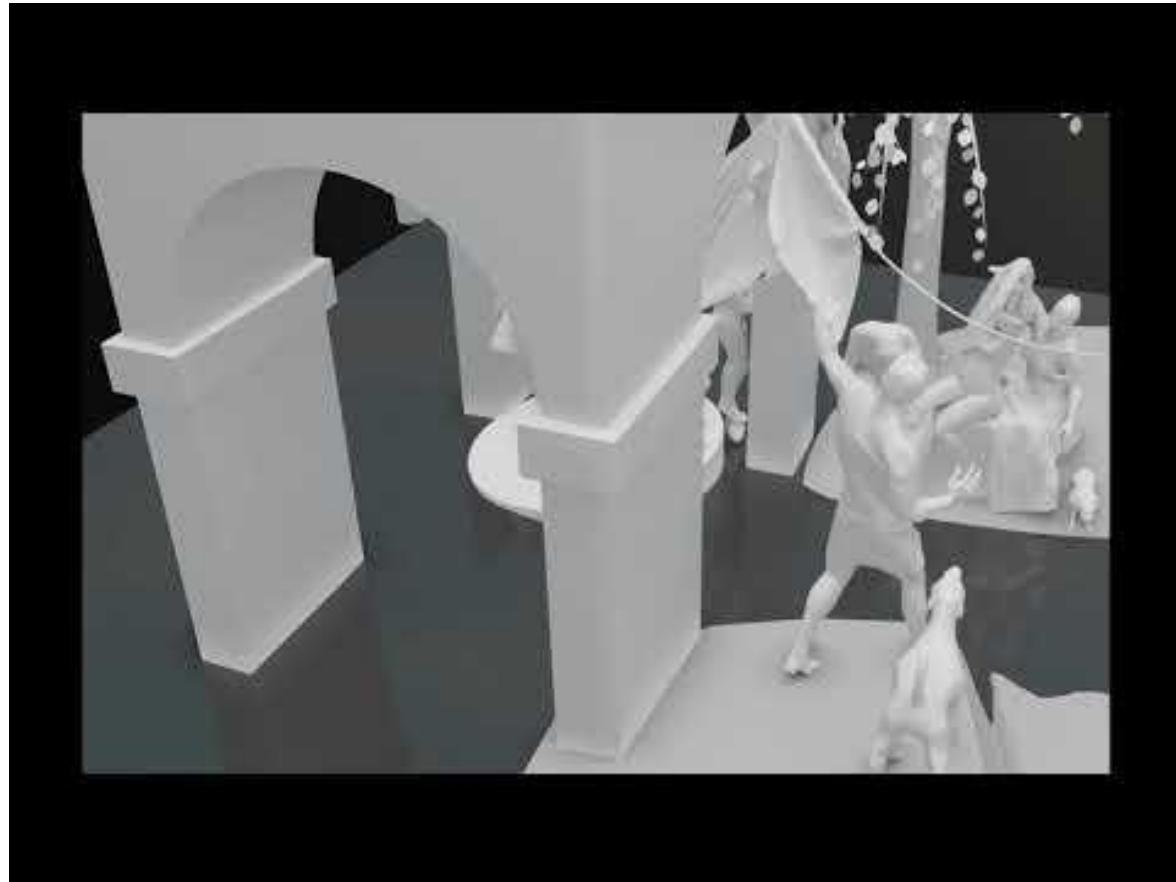


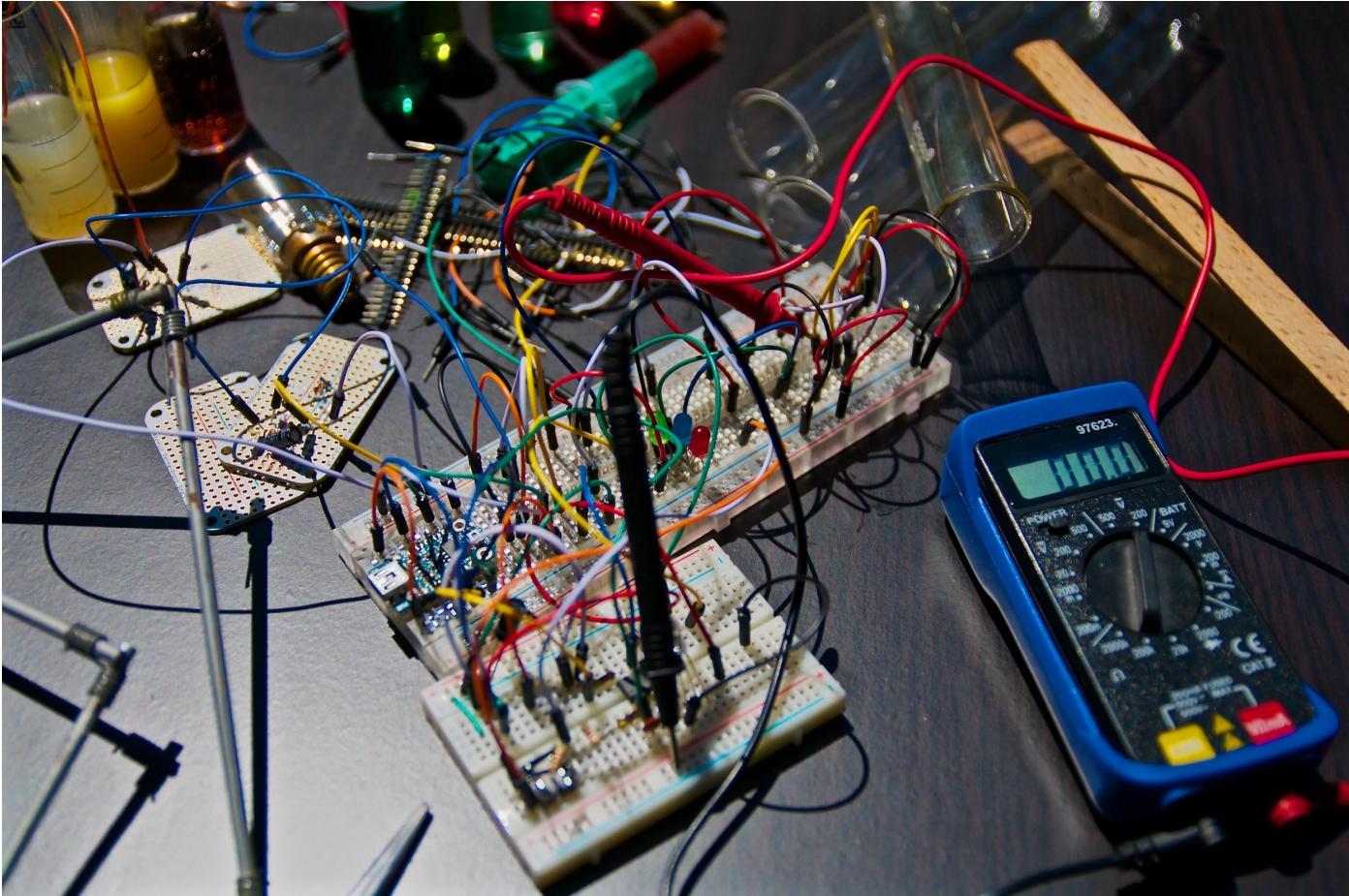
Digital Prosopography of the Roman Republic
The remarkable transformation of the Roman Republic from city-state to imperial power

The Digital Ghost Hunt



Diane and Actaeon







“An output which meets the essential needs of the research project and thus doesn’t compromise the rationale of commencing the project”

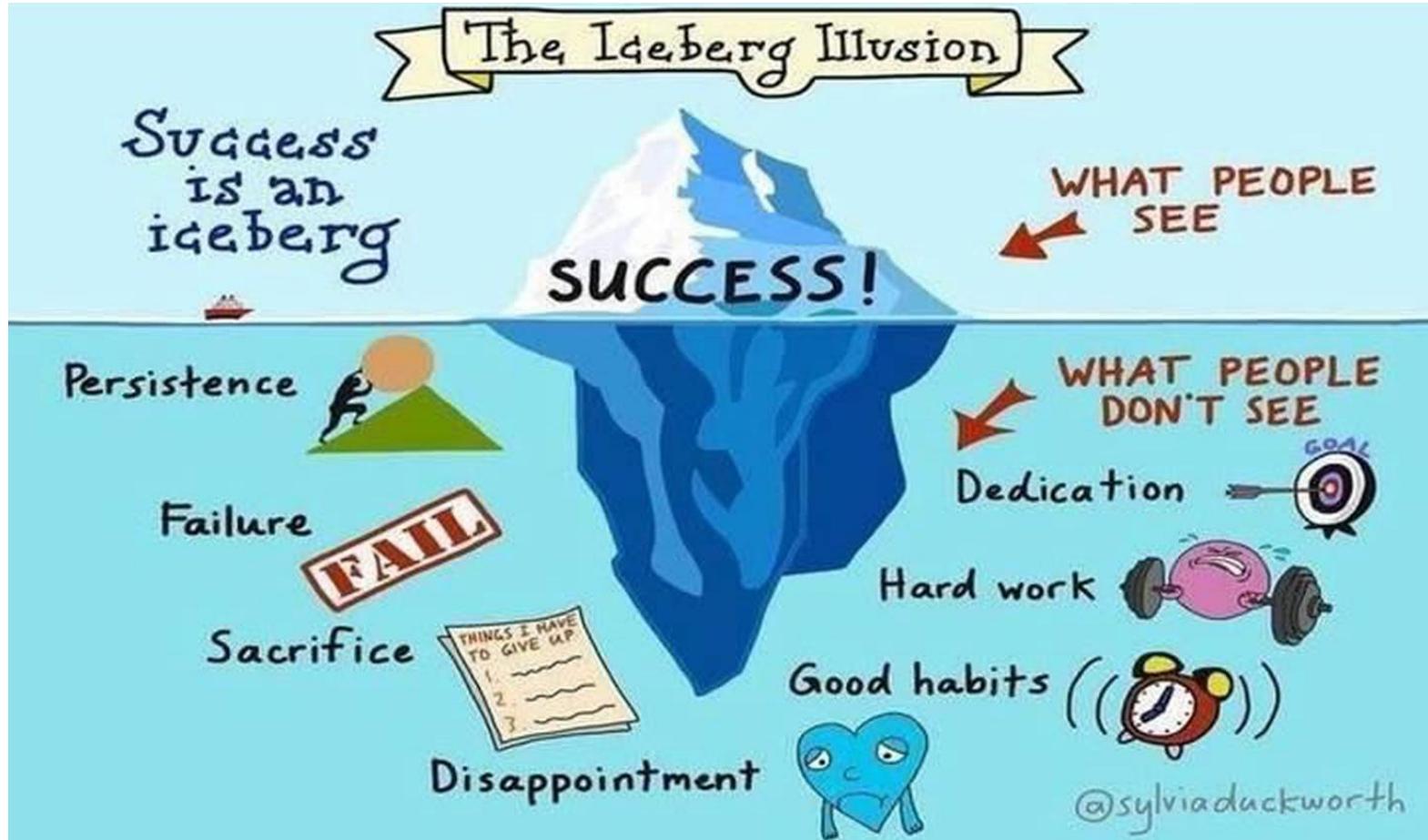
Neil Jakeman, 29/07/2021 (about 10:30am)

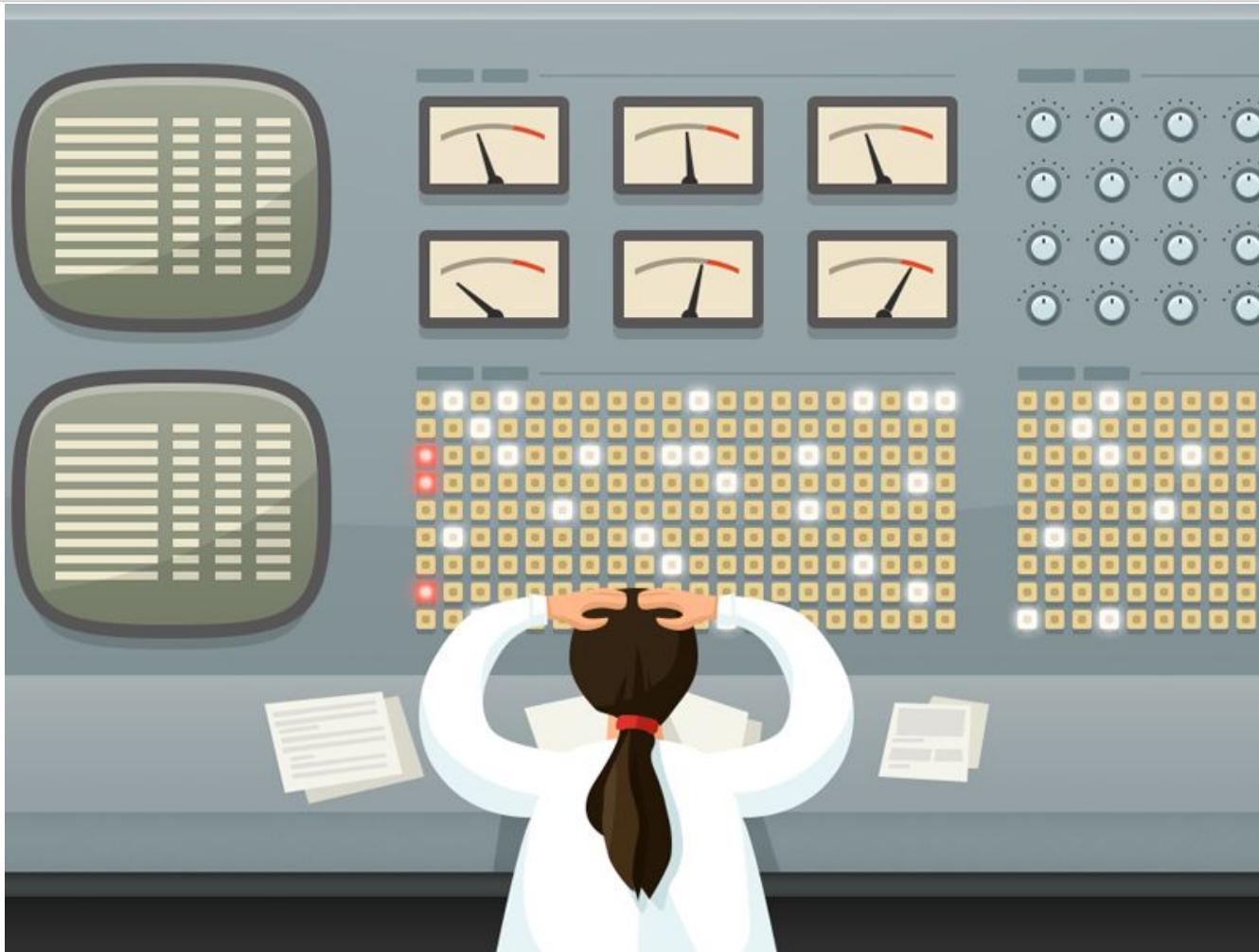


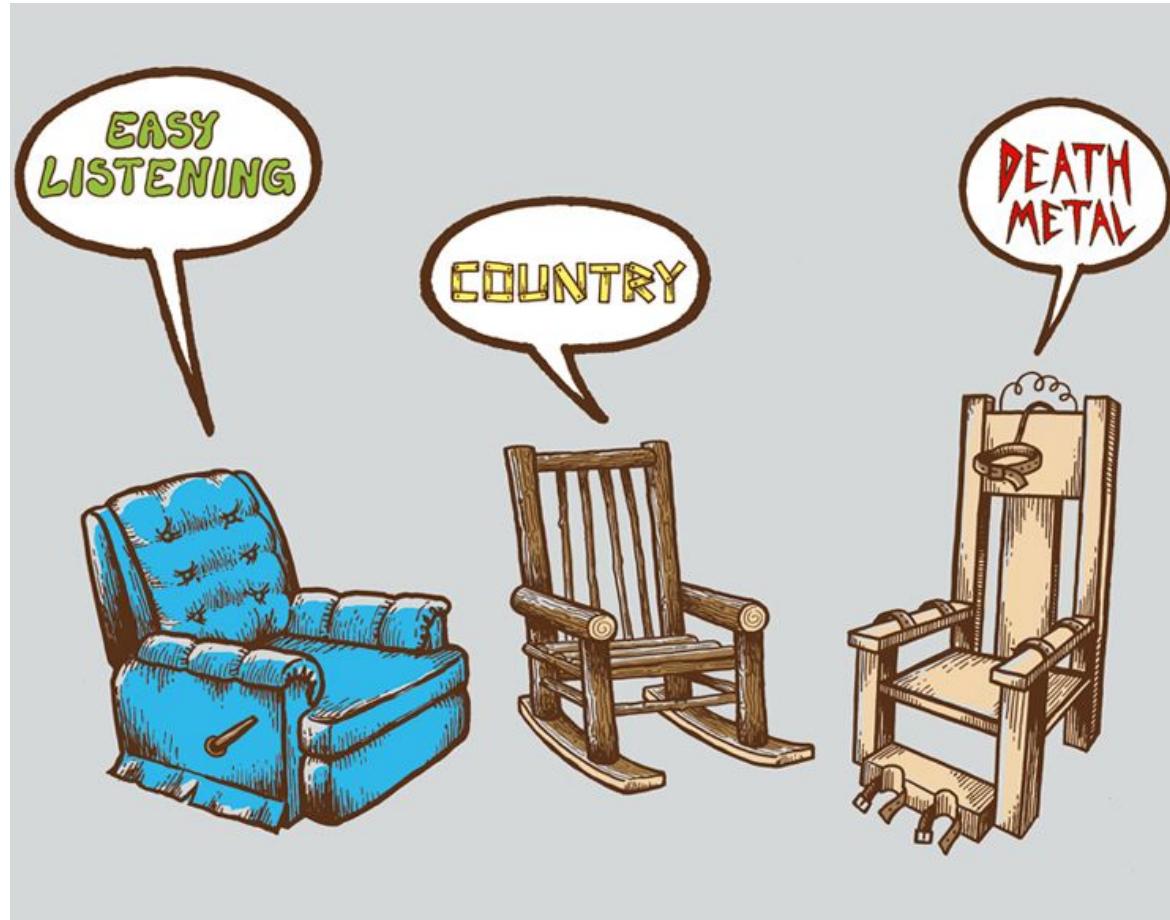
Put an end to feature creep



<https://onepagelove.com/prevent-feature-creep-and-bad-product-requests>









<https://www.nutshell.com/blog/5-things-you-can't-do-with-a-spreadsheet/>

The SDLC evolved to:

- Ensure a rigorous project feasibility evaluation is undertaken
- Provide a clear product quote is produced which details the prioritised requirements of the project
- Manage the development phase to ensure that changing priorities can be accommodated
- Validate the requirements defined both at the outset of the project, and to iteratively review requirements over the development period
- Make sure that a functioning Minimum Viable Product is delivered
- Provide a Service Level Agreement that defines how the output will be sustained for a defined period
- Provides options for graceful retirement of a resource
- Define RSE skills and roles in a way that can be used to define a career path and staff continuity



Initial Contact

Provide simple channels for approach that require essential information regarding the research, the project goals, the funding, the expectations, the timeframes etc.

Topical?
Defines new standard?

Internal Assessment

Decide as a team how and if the project meets strategic and intellectual goals. Discuss chances of success, resources needed etc. Should the project progress beyond this stage?

Requirements Assessment

Meet with the research team to discuss the project further, completing Terms of Reference and Feasibility documents and associated processes. Ensure research team understand the development protocols of the RSE team

Evolutionary Development

Parallel Text Viewer 1.x

The project requirements are developed in targeted work increments. The outputs of each increment will be reviewed by the RSE team and the Research team and the list of requirements may be reprioritised in light of changes and discoveries that emerge during the development and research

Kick-off

If funding is successful, schedule a kick-off meeting and plan out the first increments of development with the research team.

Funding Application

Help to ensure the application is of an excellent standard, possibly providing contributions to the relevant sections of the application, underwriting the technical approach

More time for testing needed about archiving?

Release

The project does not go live until a Service Level Agreement is in place with the appropriate stakeholder, which will detail respective responsibilities and commitments in the post project period.

Post Project

The project is maintained under the terms of the SLA until it expires, at which point the continued maintenance of the project may become the subject of a comprehensive Statement of Work prior to any new agreement being undertaken.

Deployment

Contact P1 ~6 months before L2A

Please prep Data Mgmt Plan ASAP

After analysis is there a satisfactory strategy to meet the project requirements?

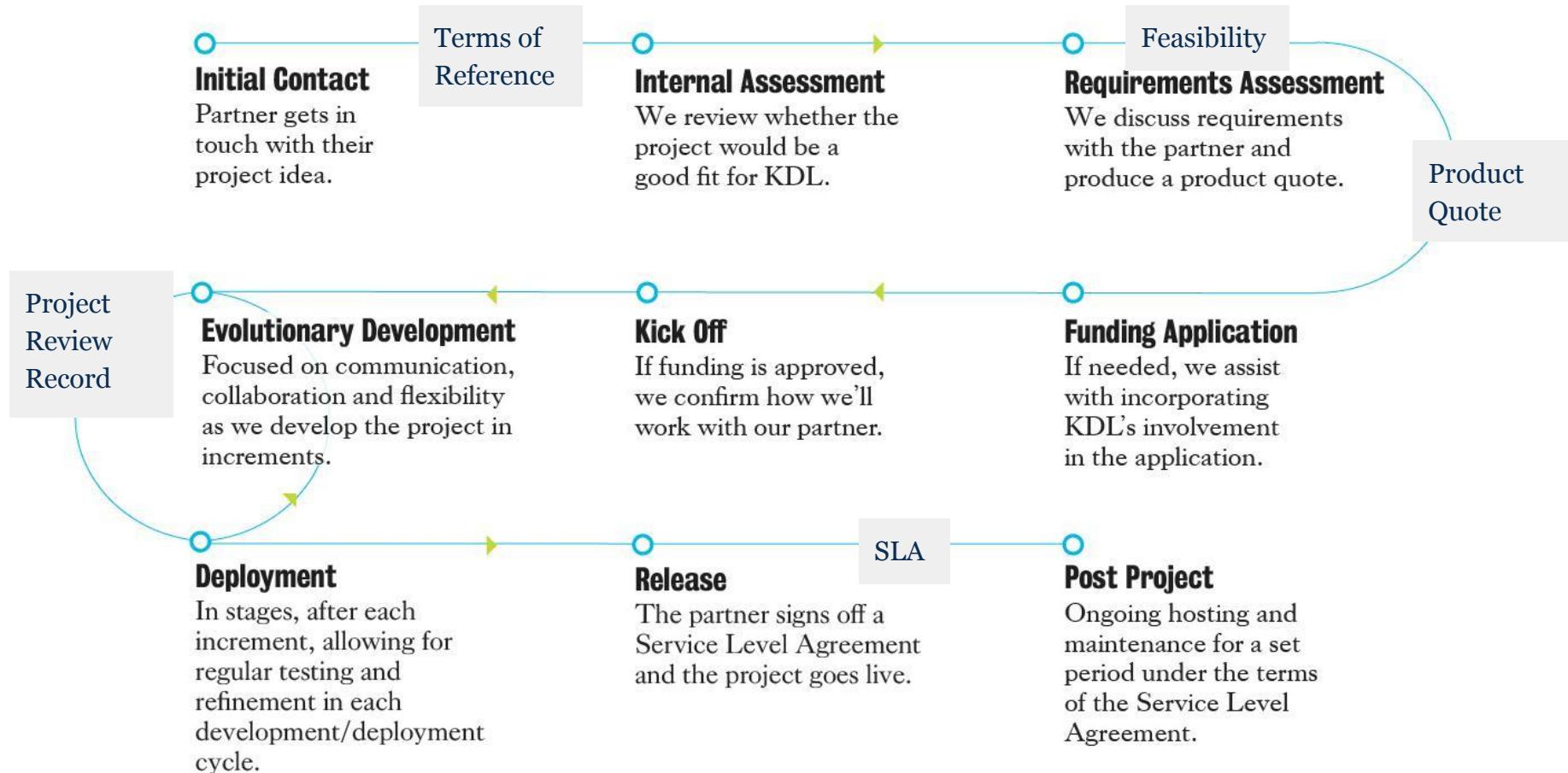
Decision point

Decision point

Decision point

Decision point

Decision point



bit.ly/30ovYpq >> github.com/kingsdigitallab/sdlc-for-rse/wiki

Document Templates

Document Guidance

Supporting Processes

Research Software Roles

Home

James Smithies edited this page on Apr 21 · 1

A Software Development Toolkit for Software Engineers

A toolkit for documenting software development in a research setting.

This repository was established by King's College London, to support the delivery of a piece of work, enriched with community input.

The documentation found here represents a collection of templates that have been pragmatically adapted to suit the needs of Research Software Engineering (RSE).

How to use this resource

Document guidance and templates have been designed to be used in most desktop word processing software and can be used offline.

1. Getting started

The core component of this toolkit is the Document Guidance and Templates section. This section contains links to the document templates and what follows is a brief overview of the contents of the toolkit.

A quick note on naming conventions

The document names are prefixed alphabetically by the letter of the project setting. The letter is followed by the name of the document. *NB* will be required for all projects.

Abbreviations used

Single letters are frequently used as short-hand for common terms, such as:

• Document templates

- A1: Terms of Reference
- B1: Project Approach Questionnaire
- F1: Feasibility
- I1: Product Quote
- J1: Statement of Work
- N1: Web Hosting and Infrastructure Service Level Agreement

• Document guidance

- A2: Terms of Reference guidance
- B2: Project Approach Questionnaire guidance
- F2: Feasibility guidance
- I2: Product Quote guidance
- J2: Statement of Work guidance
- D1: Data Management Plan template
- L1: Project Review Record guidance
- N2: Web Hosting and Infrastructure Service Level Agreement
- Q1: Decommissioning Authorisation guidance
- M1: Monitoring Methodology

▶ Pages 42

• Home

• Document templates

- A1: Terms of Reference
- B1: Project Approach Questionnaire
- F1: Feasibility
- I1: Product Quote
- J1: Statement of Work
- N1: Web Hosting and Infrastructure Service Level Agreement (SLA)
- Q1: Decommissioning Authorisation
- L1: Project Review Record
- E1: Costings table

• Document guidance

- A2: Terms of Reference guidance
- B2: Project Approach Questionnaire guidance
- F2: Feasibility guidance
- I2: Product Quote guidance
- J2: Statement of Work guidance
- D2: Data Management Plan template
- L2: Project Review Record guidance
- N2: Web Hosting and Infrastructure Service Level Agreement
- Q2: Decommissioning Authorisation guidance
- M2: Monitoring Methodology

BACKGROUND CONTEXT

Questions and prompts

- Have the RSE team had previous experience of working with this project team or members of the team?
- Will the project team fully engage with the SDLC processes?
- What previous work (if any) is being built upon?
- Has previous work in this area failed to produce quality research? If so, why?
- Is there an existing resource upon which this new work depends?
- What distinguishes this research as particularly ambitious or innovative?
- Does the project align with current internal goals and strategies?
- Does the project align with internal research interests?
- Does the RSE team have access to the necessary expertise to fulfil the project requirements?
- How amenable to digitisation or to computational processing are the data sources being proposed?
- Are there sample data to access and assess?
- Where are the datasets hosted if they already exist or where is the project team expecting to host them, and for how long?
- How amenable to archiving is the project being proposed?
- Are the ambitions of the team realistic?
- Does the project present ethical concerns?

SOLUTION ARCHITECTURE

Questions and prompts

- Does the proposed technical solution take into account data standards?
- Does it, or will it ultimately, adhere to [FAIR principles?](#)
- Is it clear that the RSE team has sufficient expertise to implement the solution?
- Is the solution scalable? Does it need to be?
- Which RSE roles will be performing which tasks?

DEVELOPMENT APPROACH

Questions and prompts

- Where will the evolving solution be hosted?
- What backup strategies are in place?
- Which channels should the research team use to seek or provide feedback?
- How often will review meetings take place?
- When will *change freeze* be implemented?

RESEARCH CASE

Questions and prompts

- What distinguishes this research as particularly ambitious or innovative?
- Does the project align with current internal goals and strategies?
- Does the project align with internal research interests?
- Does the project offer an opportunity to engage with new technology and approaches?
- Does the project offer an opportunity to develop a mutually beneficial strategic relationship with an interesting partner?
- Does the project align with your institutional values and ethical considerations?

M = must have; S = should have; C = could have; W = won't have this time

Priority	Requirement	Paul Caton (KDL), <i>SHARC project</i> , KDL Product Quote
M	Taxonomic data model for Shakespeare-related items in the Royal Collections and Royal Archives	
M	Metadata schema that facilitates multiple associations among records	
M	Site that can store, search across, and display a set of digital objects representing those items (likely to be approx 2500 objects)	
M	Site that can store, search across, and display a set of metadata records associated with the digital objects	
S	Admin interface that allows direct metadata record creation on site	
S	Map functionality showing location of items by royal residences	
S	Timelines placing items in historical context	
C	Integration of 3D visualizations of key rooms at Windsor Castle (creation of 3D images would be by 3rd party)	
W	Public interaction with/contributions to site	

MoScOW technique >> <https://www.agilebusiness.org/content/moscow-prioritisation>

In scope
for this timeframe

(Project / Increment / Timebox)

Must Have



Typically
no more
than
60% effort

Should Have

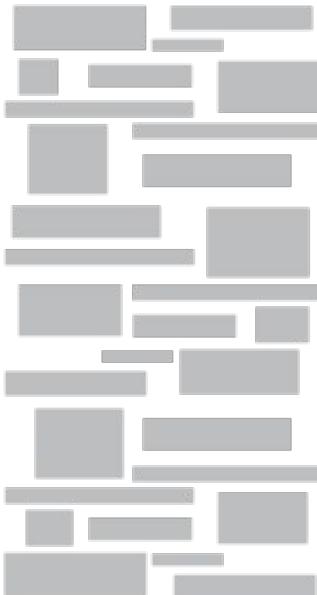


Could Have



Out of scope
for this timeframe

Won't Have this time



Project Management & Communication

Quarterly Timebox meetings

Monthly Team meetings

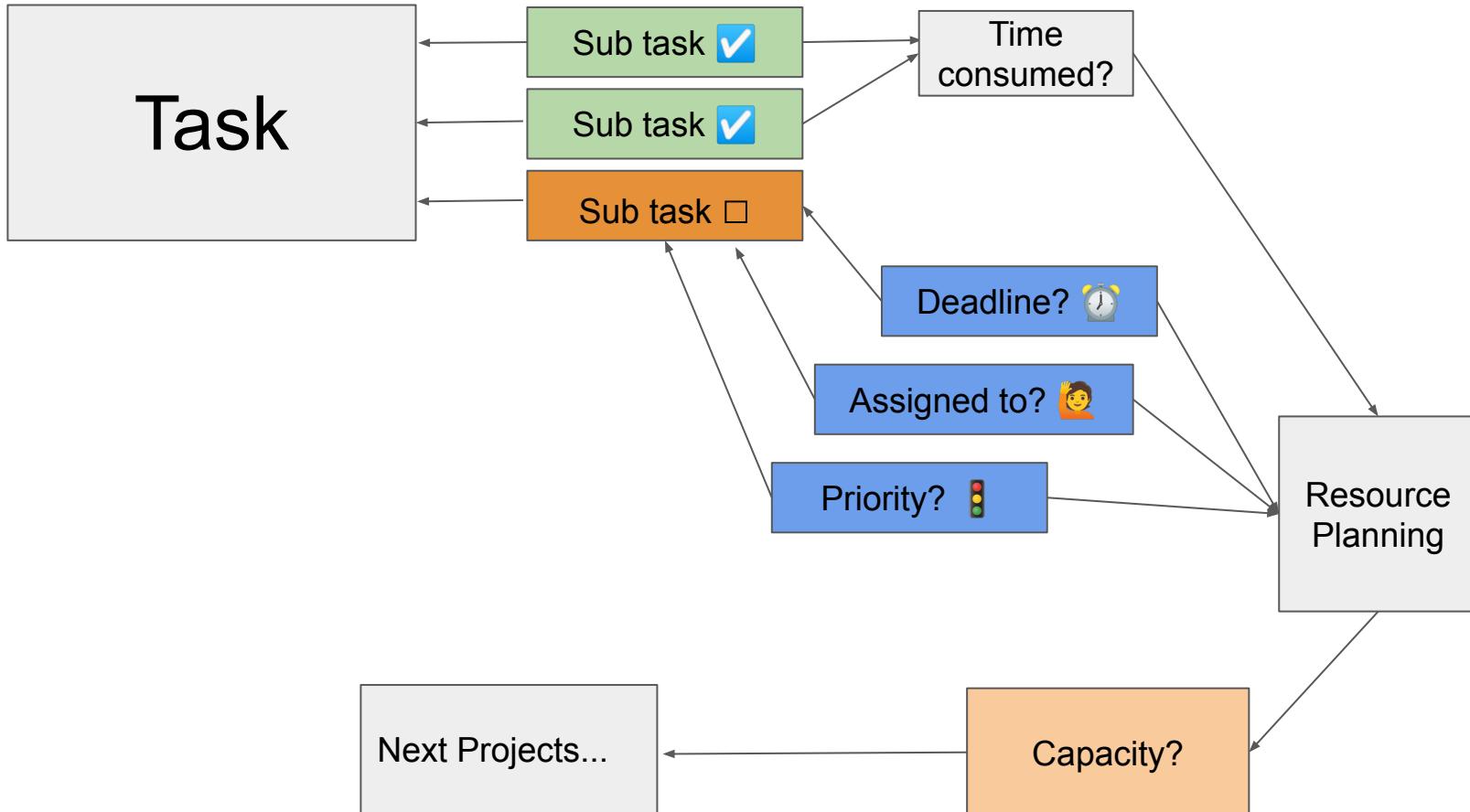
Fortnightly Timebox meetings

Weekly Project Planning meetings

Daily Standup (Slack channel)

PRE-PROJECT	FEASIBILITY	FOUNDATIONS	EVOLUTIONARY DEVELOPMENT	DEPLOYMENT	POST-PROJECT
Understand the research questions and context	Outline solution architecture development and delivery plan	High-level schedule of work increments	Timebox planning Daily stand-up meetings	Assemble Review Deploy	Assess if the expected benefits have been met
Discuss with Project Partners	Prioritise Requirements List		Project review record		
Produce a “Term of Reference” document	Produce a summary for the final go/no-go decision Quote		Evolving solution document(s) and artefacts	 Iteration	





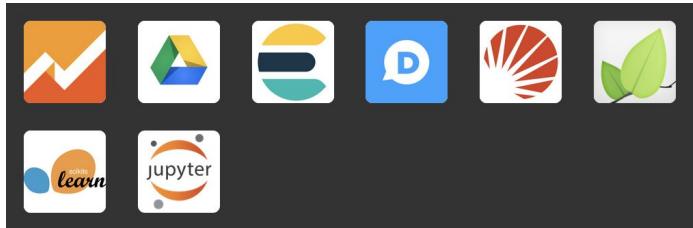
Application and Data



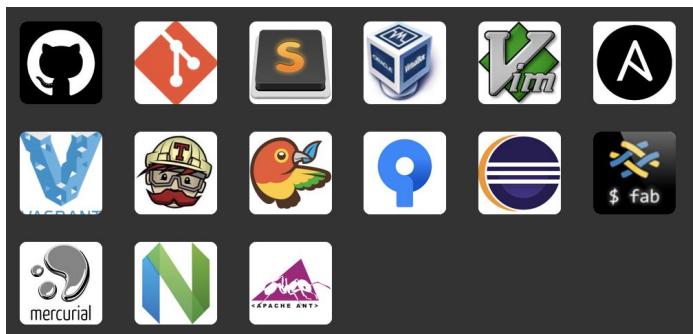
Business Tools



Utilities



DevOps



<https://stackshare.io/kings-digital-lab>

Archiving & Sustainability Approach

Maintenance under costed SLA

Usually 5-year



Photo by Designecologist from Pexels

Migration

College ITS microsite service or to external host (another HEI or commercial provider)

Static conversion

Maintained public access but reduced functionalities

Dataset deposit

KDL CKAN, institutional technical systems, external repositories

Minimal archiving & storage

Minimal storage (for two years minimum) for project website (VM) and data on KDL infrastructure as well as web archives. A placeholder page is shown at a project URL with description, metadata, and links to snapshots.

See <https://www.kdl.kcl.ac.uk/our-work/archiving-sustainability/>

KDL Blog

- Ciula A. (2020) *Exposing legacy project datasets in Digital Humanities: KDL experience* <https://www.kdl.kcl.ac.uk/blog/legacy-project-datasets/>
- Ciula A. (2019) *What Makes Good Honey? KDL Checklist for Digital Outputs Assessment in the REF* <https://www.kdl.kcl.ac.uk/blog/checklist-digitaloutputs-ref/>
- Jakeman N. (2020) *Software Development Lifecycle for Research Software Engineering: Safeguarding an inheritance and ensuring a legacy* <https://www.kdl.kcl.ac.uk/blog/sdlc-for-rse/>
- Smithies J. (2019) *The Continuum Approach to Career Development: Research Software Careers in King's Digital Lab* <https://www.kdl.kcl.ac.uk/blog/rse-career-development/>

Resources

- Agile DSDM Handbook: https://www.agilebusiness.org/page/ProjectFramework_oo_welcome (Agile DSDM Consortium 2014)
- DH2020 paper slides: <http://dx.doi.org/10.17613/789z-9p59> (Ciula et al. 2020)
- FAQ for project partners: <https://www.kdl.kcl.ac.uk/how-we-work/faq-partners/>
- HR Profiles: <https://zenodo.org/record/2564790> (Smithies 2019)
- Managing 100 Digital Humanities Projects: Digital Scholarship & Archiving in King's Digital Lab. *Digital Humanities Quarterly* 13.1 <http://www.digitalhumanities.org/dhq/vol/13/1/000411/000411.html> (Smithies et al. 2019)
- REF Checklist: <http://doi.org/10.5281/zenodo.3361580> (Ciula 2019)
- SDLC Wiki: github.com/kingsdigitallab/sdlc-for-rse/wiki (KDL 2018-)
- SORSE slides and recording: <https://sorse.github.io/programme/talks/event-027/> (Smithies & Ciula 2020)

Digital researchers and data experts

We create digital tools
to explore academic
research in new ways.

Thank you

QUESTIONS?

