

Electronic Research Notebooks

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- 1) Feedback received from online questionnaire
- 2) Thoughts on generic vs specialised research notebooks

Feedback Q1: If you have previously investigated electronic research notebook systems, but did not deploy, what factors prevented you from proceeding?

- Cost of on going support, security of data and licensing.
- Difficulty getting buy-in from sufficient number of researchers to support business case for institution-wide solution. Plus recent roll out of MS Teams muddying waters as could provide some of the functionality at no extra cost.
- No senior management buy-in to providing central support as not seen as a priority at that time however time has moved on and there seems to be more demand for these tools now.
- Not finding an ELN that works for different disciplines, even just within STEM some users just didn't get what they needed.

Feedback Q2: Are you more drawn to the idea of a product that provides all of the specialist features you need, or a more basic, but universally-relevant product?

- Specialist features. For biological work which tends to be different to chemical synthesis.
- Universally relevant
- Both - something with a basic notebook function with optional add ons / modules that different groups / departments could choose to see or hide depending on their requirements

Feedback Q3: How important is supervisor oversight in an electronic research notebook?

- Supervisor and Principal investigators require the ability to view content. Lab books are the property of the University so the research notebooks would be similarly owned. There may be requirement of regulatory bodies and safety officers to have oversight as well.
- Not sure what is meant here - certainly supervisor should have access
- Essential - students come and go and complete sections of larger projects, the PI needs control of the data, the University needs to remain the owner of the data.

Feedback Q4: How important are communication features in an electronic research notebook?

- Not sure what this means but sharing with others is important. Does the question relate to bluetooth and wifi connections to devices and machine generated data?
- Ability to flag inputs/updates/questions to other users would be useful
- Needs to be easy to point people to files and then they can easily access them and edit where appropriate
- If you mean messaging within the ELN then not really as we have other means to communicate with colleagues but for sharing of protocols, data, reports etc. then it is very important, collaboration should be at the heart of research.

Feedback Q5: Any other comments?

- The Uni of Cambridge is currently conducting a survey on the use of research notebooks across the University on behalf of the research data team at the Office of Scholarly Communication. The University has a Research Notebook Working group which is part of the University's Open Research Steering Committee
- University of Glasgow has a trial on-going and feedback will be summarised winter 2019 by the Research Information Management Team. Recommendations for central support for research notebooks will be submitted to the Executive Director of Information Services and reported to the Research Strategy and Planning Committee.
- Informal blog - <https://researchnotebooks.wordpress.com/>
- Nottingham Trent University is just starting to look at the possibility of an institutional level ELN, the Universities new strategies contain lots of promises to reduce waste, improve workflow, increase collaboration and become more digitally sophisticated so now is the perfect time to get buy in from above.

Feedback Questions - summary

- Concerns about costs, security, institutional support and diversity of interests
- Desire for both universal platform AND specialist toolsets
- Supervisor features/oversight essential
- Collaboration tools essential, but not communication/messaging
- Many institutions currently investigating options for site-wide deployment

The challenge

- Researchers want to switch to digital documentation
- Institutions want to switch to digital documentation
- Researchers are attracted to specialist features, but deterred by bewildering choice
- Institutions are paralysed by the diversity of researchers' requirements
- Researchers are waiting for guidance
- PIs don't like being managed

The ideal solution?

- Single, national platform delivering all essential features to all researchers, in all institutions
- Developed to allow optional, bolt-on specialist features
- Economy of scale, reduced local complexity and support
- Common experience, processes, quality and culture
- Cross discipline collaboration
- Framework for rapid deployment of innovative tools
- (Foundation for additional national RDM services)

Which features are essential for everyone?

Annotation tools	Drawing tools	R/W access for internal collaborators	R/W access for external collaborators
Movie upload	Image upload	Export pages to PDF	Export notebook to PDF
Time-stamping/ revision history	Supervisor dashboard	Launch/edit data files from within notebook	Protocols library
Messaging/commenting	Persistent identifiers for data	Cloud based	Storage within EU
Databases (e.g. inventory)	Browser based	Mobile device support	Local storage integration
Cloud storage integration	Voice recognition	Handwriting recognition	Equations
App integration	Institutional SSO	ORCID	Supervisor management of user accounts
Data files exported in original format	Links to data files intact after export	Community owned	Institution owned
Provided by commercial partner	Project template library	Free	XML output
Markup/Latex	Publish to repository	API/Developer tools	Calendaring