

The end of files might be inconvenient for scholarship

O'Reilly's Radar site has an [post advocating a post-file computing paradigm](#). It's a bit short on concrete details about how this might be implemented, but it's something we need to think about in the context of repositories and libraries, particularly because the main place this post-file computing is being delivered is on the back of cloud computing services and vertically integrated computing platforms like Apple's. I talked this over with Duraspace CTO Bradely Mclean at Open Repositories and we both agree that there are some real challenges here for digital libraries.

It's not that people have not noticed the looming threat to academic practice but I think that it is being underestimated. For example back at the [Australian Digital Futures Institute](#) (ADFI) there's a post on [Apple's iCloud](#). They note:

iCloud is a way of Apple retaining its dominance of the smartphone market which has recently given ground to phones powered by Google's Android system. This will improve how users access content from different Apple devices. But be warned, once committed to this system, it will be difficult to move away because it just won't be convenient.

<http://adfi.usq.edu.au/starlog/?p=16>

But it's not just about the smartphone environment, it's about computing in general and "it just won't be convenient" is putting it mildly. Think about what happens when you're using these vertically controlled computing platforms to collect research data. You need to preserve the data to be able to validate your research and comply with policy and codes of practice and funder requirements. Or if you're using it for teaching, how do you keep records and build portfolios?

How will we deposit this stuff in digital libraries?

I fear that it's a very small step from 'not convenient' to 'not possible'.

Right now there are several major challenges for libraries and repositories. One of the biggest, as many commentators have noted, is the rise of the rental licensing model for content. This has already happened for journals which are now sold as bundled electronic subscriptions, making the notion of 'deposit' of materials extremely problematic in many jurisdictions. We are now seeing related but different changes to *book* licensing. With the rise of e-reader devices we will see libraries cut out of many book transactions, with readers purchasing content via vertical supply channels locked to particular software and hardware stacks. Along with the huge proliferation of e-book titles, many assembled by machines, this will mean the notion of a library of legal deposit will be challenged in two significant ways, by huge volumes of often dynamic bespoke materials, and licensing that means much content now cannot be donated to a library or lent-out.

Apart from licensing, the clouds (as in cloud computing) are gathering for a potential storm in academic computing. The seductive benefits of devices like Apple's iPad, iPhone and iPod are leading us to a potential future where many research and teaching objects are produced using highly specialised, proprietary *apps* (as opposed to applications such as office-suites with open formats) which are routed directly to vendor-controlled cloud storage. There is real potential that libraries will lose contact with and control of research and cultural resources altogether. We are seeing the disappearance of digital files, file systems and the ability to even determine in what format ones data are being stored. If we don't plan now it may not even be possible to procure resources for preservation. The challenge is to make sure that libraries have a tap into the information flows of the future, and the right licensing and technological infrastructure to fulfil their traditional role of depositing and disseminating those information flows be they research, learning or cultural artefacts. We are faced with a challenge which is quite different to digitisation or cataloguing of physical objects.

There will be no quick answers, but I see the role of digital librarian as one of both education and outreach as well as systems development, making sure our academics and students understand these issues, together with

engineering solutions that allow the library to fulfil its role in preserving and disseminating content that is created by our institutions. To do this, we need to make sure the infrastructure is there for libraries to tap into academic work-flows and new publishing models. We need to make sure that authoring and creation tools for viable preservable content are available, otherwise the scholarly record as we know it may become impossible to maintain, and library collections as we know them might become impossible to curate.

One area where libraries are increasingly relevant is in assisting in the capture and husbandry of research data. Funder mandates world-wide are now requiring that data be made available as open access by default and discovery details for data be published, but we need to make sure we don't embrace technology that makes that impossible.

So, while we're wondering, like ADFI how to use our iPads for teaching and learning and looking forward to a file-less future the academy needs to speak up and tool up for the post-file digital future.

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