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Chapter 7. Considerations for Implementing New Technologies
(3500 words)

Introduction

This chapter aims to explain the various considerations when applying new technologies or for LIS Professionals when they encourage others to. The growing number of technologies, web or native, desktop or mobile also increases the issues relating to their use. This chapter will investigate these issues that academics and support professionals all too often fail to pick on. It will give pragmatic advice to the reader that by following a few quick and simple rules that these technologies can be applied with minimum fuss for maximum impact.

Teachers have a pedagogy, what do researchers employ?
Anyone involved directly in any kind of technology enhanced teaching and support always looks to make good use of any technologies at their disposal. As a result they have to make informed judgements as to whether a technology is useful as part of their role. These decisions are led by the pedagogy, meaning the practice of how best to teach. A competent teacher or learning technologist will try their best to use a technology to enhance their or the lecturer's teaching and the student's learning experience. By just using technology for for the sake of it teachers run the risk of disrupting the learning process and negatively affecting the classroom and its learning objectives. The same can be said within research as altmetrics and other social and web technologies can be regarded as disrupters. As we have seen with the impact of MOOCs on learning, open access on publishing and big data on research data, there are changes afoot within the academic community. These innovations have all been brought to us by technology and have disrupted higher education and research in varying degrees. In the longer term it would be good to look back and see these as changes for good, but we cannot say that just yet. Certainly many academics would agree that the existing systems of delivering lectures, managing and publishing research needed to be overhauled for the 21st Century. So as the hardware and software become more readily available it makes sense to explore many of these possibilities.

As you may have discovered, there are plenty of academics already making good use of altmetrics and the wealth of scholarly communication tools already available to them. Many will have done so as a natural progression as part of their professional development and with a natural interest in technology and the web. For many others it will have been a simple leap of faith, some will have been coerced and now doubt others forced against their will. Nevertheless, like an iceberg we are only seeing just the tip of it. The bulk of the academic community is yet to get online in truly meaningful ways that go beyond creating a social media profile and updating a few papers. For the early and late majorities of academics there needs to be a mixture of ideas and support systems to help them engage more with the web. Of course, not all academics will want to, and whilst there are no formal initiatives to change that, it is unlikely we will see the kind of levels of technology and web use that we see reflected elsewhere in society. Also given that it is over a decade since the term Web 2.0 was popularised as a concept, that it could be at least another one before we see a genuine widespread uptake of these technologies. As discussed earlier in this book, there are various reasons why academics do not engage with technology as a way of driving change in the same way as some other professions do. The majority of academics still not engaging with social media and altmetrics have a variety of reasons not to, many of these reasons are valid ones. Yet these technologies are not going away and many who take

advantage of them via their inquisitiveness and leap of faith will claim they have benefitted. These benefits come in the form of invitations to write, present, collaborate as well as communicate and discover knowledge that is useful to them and their work. Every researcher will have their own story, big or small. For the majority still not employing these technologies it is important for them to hear them as case studies to make better decisions on whether to stick or bust.

So therefore there is a need for the equivalent of a pedagogy in research terms and a need for support systems and champions. Even if a researcher decides they do not wish to share, communicate or measure their research, they have at least explored the evidence available to them.

What makes a good tool?
We have touched on this to some extent in previous chapters but given that the following chapter looks at the specific technologies it is important to briefly discuss what qualities make for a good piece of technology. This increasingly becomes relevant when a variety of similar technologies compete for your attention.

Communication
This may seem like a less obvious aspect of what makes a good technology but in this day and age of social media it is important that technology users are in some way communicated with. For example does the technology have a Twitter feed? this is useful if their website goes offline, can you check via their Twitter feed for clarification. Can you find out their latest developments, is there a new version on the horizon. If so, what are the new changes as they could impact on researchers using the technology, it gives the LIS professional an opportunity to stay informed with regards to any changes that could impact those using the technology within the organisation.

User Engagement
On a similar topic to communication, does that conversation go two ways, do the people behind the technology provide opportunities for you to engage with them? For example, are users asked for input on such as feature requests and bug fixes. A great example of this has been Mendeley who set up a Mendeley Advisor scheme a few years ago to encourage early adopters to feedback and request new functions via their discussion lists, voting systems and open days. There are over 1000 Mendeley Advisors globally now, many of whom communicate with the company on a regular basis. Despite their increase in size and subsequent takeover by publishing giant Elsevier this model still remains an important part of Mendeley's developmental process.

Export functionality
One of the worst things that can happen to anyone who puts their trust in a technology is that it ceases to exist and all their data and content gets lost. In most cases users get advanced warning or in other cases use their gut feeling and social networks to deduce when a website or tool no longer has someone at the helm. This is more often the case for smaller technologies where they have been set up by one or two people, in the case of academic tools as the result of a research project. So it becomes increasingly important to investigate whether the technology in question has an export function as nothing is guaranteed on the Web. Even giants such as Google can create a huge stir when they close or mothball a tool, the best example being that of their superb rss aggregator Google reader. Used by millions and many in the academic community to stay up to date with the latest

published research; but was closed as Google wanted to focus in other areas of content curation. Another example was iGoogle which was a personalised portal homepage which was discontinued in 2013 despite having a loyal and extensive user base. Complete with Google search function, users could add their diaries, news feeds and local weather to a single homepage. Google gave their Reader users several months to find another aggregator resulting in the majority leaving for the even more popular Feedly tool.

Who is behind the technology.
Even though the rule of thumb should be applied that the bigger the funder the more likely the technology will last, it is not always the case as mentioned earlier with Google reader. Yet for the most part it does offer some comfort for those wishing to employ the technology. At the other end of the spectrum, technologies that are started as small research projects can go on to big things, the risks are far greater. For a start they need investors or another bigger technology to buy them. Failing that, there are the options of paid-for services or advertising, with the latter potentially comprising future user numbers based on who they allow to advertise on their site. In the case of Mendeley there was much talk about their buy out by Elsevier with one article equating it to the film Star Wars and it being like the Rebel Alliance bought by the Empire. Many altmetric and scholarly communication tools are backed by large publishers. For example, ReadCube by MacMillan Publishing, Connotea (now defunkt) by Nature Publishing and of course Mendeley by Elsevier. At the other end of the spectrum, there are of course the smaller tech-start ups, some of which began life as student and research projects. These technologies often just have one or two staff working, so depending on the company's aspirations and resources it can take a while for them to become viable entities. It has been over a decade since we saw the Dot-com bubble burst when many major websites lost value, including stop trading. the fear with so many research-related startups is that this could always happen again. Not every academic-focused website will have a good solid financial backing and in an increasingly competitive market some could fall by the wayside. Hence it becomes increasingly important to understand the factors into what makes a technology a viable one to use. Especially when academics are increasingly busy, so by constantly having to swap and change technologies there is a risk they could be put off should a website they have invested serious time into goes offline. That said, from this author's experience, the number of useful tools that have disappeared are few. Notable mentions include PageFlakes, Droiderly, Google Reader and Connotea, with the latter to some extent replaced by ReadCude

Helping translate the technology
It is likely through the course of this book that you will have heard and used some of the technologies and websites mentioned. Certainly everyone has heard of Facebook, yet Mark Zuckerberg's highly influential social network tool is just a very small part of altmetrics, in fact probably smaller than that. There are however a wealth of tools that are covered in this book and in reality they can be viewed as the small cogs in a much larger organic machine. Some are grouped together collaboratively and others work more in isolation. Nevertheless it can be quite daunting to discover there is a wealth of tools available when you are trying to understand an existing set of core technologies, such as library and teaching systems. Added to that is the problem of translating these new-found technologies to the researchers. This as any outreach focused LIS professional will know is a very hard task as researchers are often struggling for spare time. Trying to gain their attention and hold it requires much hard work. Certainly this book hopes to address these issues but the problem remains, LIS

professionals and academics struggle to find time to discover new systems and ways of working. So it becomes increasingly important to find new ways of capturing researcher's attentions. A good way is through the medium of video, which has become an essential part of the Web with regards to communication. However there still remains the problem of time and maintaining attention. So with that in mind I have created a series of short animations to accompany researchers and LIS professionals get a quick understanding of some of the tools and ideas featured in this book. The videos are called Research Hacks and most run for less than two minutes. They explain briefly tools such as Figshare, Altmetric.com and ImpactStory in a bright, easy to understand video animation. Their purpose is not to go deeply into the technology as a video that starts to run over five minutes probably starts to lose interest. There were created purely to encourage curiosity and allow the user to explore the tool for themselves. There are in essence a no-pressure sales pitch for technologies to aid scholarly productivity, communication and collaboration.

You can view the series of 40 short videos, although that number is likely to have increased by the time this book is published by going to the link below.

A word of caution

It is advisable at this point to mention before we dive into the many technologies and websites in the following chapter that we look at a few issues relating to these tools. We have to consider that some of these technologies are what you would refer to as third party and as a result may offer little insurance or support should they stop a service, lose your data or share it with others outside of your control. Nevertheless, many of the tools covered in this book are now established, profit making, mature companies that can offer a lot to researchers and LIS professionals wanting to employ them. There are just a few things you need to consider before using these technologies.

Does your institution offer an in-house alternative?

Any kind of content you put on the Web is susceptible to disappear, get stolen or misused, there are no guarantees and you would do well to find a web or technology company that would offer a 100% service level agreement that you content will be online all of the time without interruption. Therefore with regards to security and uninterrupted access it is important you think about alternative options. Does your institution have a repository for publications or a way of hosting digital content. Certainly in house technologies can rarely match those available in the commercial sector as they invariably can focus on that one product and support a larger customer base, whereas your own IT department has to support dozens of products for a smaller user group.

What are they doing with your data?

Over the last decade we have increasingly become comfortable with sharing our personal data. Whether that be baby photos, geographical locations and relationships, all of which helps feed the data hungry organisations such as Facebook and Google. Whilst you would be hard pushed to find a friend or colleague who has sat and read the terms and conditions of the website or app you sign up to use. Given that they are very long and written in legalese it is normal to click through the various 'accept' buttons to get you to your software. Yet it is important to consider when using a new technology who is behind it, what is their purpose and what will they do with your content? For many technologies these days it has become increasingly common for them to encourage users to sign up using a more established technology like Twitter, Google or Facebook. Many technologies understand that

there is a limit to the number of technologies a user will sign up to with unique credentials. Making it easier to use an existing account removes a barrier. They can do this by using OAuth which is an abbreviation of 'open authorisation'. In essence it allows users to access a resource via one they already have access to without sharing their credentials. You may not read the terms and conditions but when using any tools via OAuth authentication it is important to check what you are allowing one technology do by interacting with another.

Can you put your content on the Web?
Given that academic institutions are often quite liberal in their sharing of knowledge and expertise it makes sense that academics are encouraged to share their content as far as they can across the Web. Yet that is not always the case, certain research is conducted for private organisations, publications can have embargoes, whilst most teaching materials are for the explicit use of degree-level courses. So some academics may not be able to take advantage of these tools for a variety of business case reasons. Therefore it is important to understand what you can share, whether that be a dataset, a pre-publication paper, or report. The temptation for researchers is to share and upload all of their content, but if the copyright belongs elsewhere or has some kind of embargo it is important to understand what you can and cannot share.

Is your content copyright compliant?
Copyright is often a grey topic that only a few brave souls dare explore in great detail. The law is not always that clear and in education that becomes doubly so. Therefore researchers can feel frustrated when pulled up by an eagle-eyed support librarian or peer. It can be another problem when researchers try to correct their copyright mistakes and are often given contradictory advice as to what they can use. Often researchers do not care for the trivialities of online copyright which becomes more visible when they start populating the web with their own presentations and content for the first time. This can foster a culture where academics stick to tried and tested methods of bullet-pointed, text-heavy slides rather than risk a copyright breach. Yet there are alternatives for researchers trying to move away from traditional presentations to a more attractive style. Yet it is important to note that this can also have a negative effect being that image-based presentations can sometimes make little sense when then hosted online afterwards. The same can be said about text only presentations as well. Nevertheless there are benefits from putting presentations online in an attempt to make the researcher's work more visible. By recording the presentation it provides additional context and more meaning to the slides. That aside it is important for academics and LIS professionals to explore the legal alternatives to image use. These can be discovered via such as the Creative Commons Search website or specifically tools such as Flickr and Google Image Search and by filtering results only to show Creative Commons content. Another alternative is to investigate whether they have access to an institutional asset bank of images or a simple and quick alternative, to take their own photographs.

Are your opinions really yours?
One of the many areas that blur between professional and personal using social media is that of Twitter. Some LIS professionals and academics chose to have separate accounts, one for work and one for home. Whilst others focus on the professional, whilst many have a mixture of personal and professional. Very often users will apply terms and conditions to their profile along the lines of 'views expressed here are my own'. Considering that most people set up social media accounts on their own initiative rather than an organisational

dictate then it is understandable to take this approach. That said, if your profile is in some way linked to your institution and has updates from your work life then your organisation would take notice if some of this content was seen as unprofessional. For example, Tweeting about colleagues and students in a demeaning fashion can lead to anything from a warning to contracts not being renewed. There is a whole collection of stories that have made national news when a sports star has got into trouble over their Twitter account. Academics are not removed from this issue and even though they may own the account, use it in personal time and make personal comments, the reality is that if you say something controversial or insulting and your manager or employer sees it, they will probably want to talk to you. This of course can be very subjective, there is a fine line between banter and insults, whilst drinking excessive alcohol and using social media is probably a recipe for disaster.

Can you show someone how to use social media?
This question often crops up as there are arguments that people should be allowed to explore the web for themselves and use it as they so wish; such is the democratised ethos behind the whole of the Internet. Using the web, whether you have been connected to it for many years or just a couple is very much like parenthood. In that there are books on how to be a good parent as there ones on how to use the web, yet it is not that plain and simple. There are always scenarios as a parent that you will come across that you have to deal with at the time by using your own initiative. If you were to ask five different parents for advice you would get five different responses. The web is very much the same as we all have unique personalised experiences and we often come across ethical issues with regards to a communication or something we read on the web. Academics like to see evidence as to why they should carry out an action or try something new, and quite rightly so. As touched on elsewhere in this book it is important that any academics you encourage to use social media and altmetrics have a positive early experience, this can help skill them up for later on.

Conclusion

Academics may already be used to using social media on a personal level, posting holidays snaps, discussing politics, the weather and sharing personal stories. Some may have an understanding of the privacy issues relating to social networks, whilst others will share content totally unaware of any implications. Taking this into an academic context this can cause issues of concern for the academic and institution when boundaries become blurred and the personal slips into the professional. This is where the LIS professional and other aligned groups such as learning technologists, communication specialists and administrators can help guide academics towards good practice. This of course requires some decent level of knowledge by such professionals, which can be helped by exploring the technologies and their issues. Books like this one and others listed throughout this book will also supplement that knowledge.
Key Points
- Academics need support in adapting their use of social media and other technologies from a personal setting to a professional one
- Library and information professionals have the right skill in supporting peers and academics discover and learn how to use new technologies.
- There are issues around digital copyright and literacy that can be addressed by the library community on campus and over the web.
- This is a changeable area within academia and with it new roles will be developed around digital research and support which will create new opportunities for career progression within the library community.

- Library and information professionals can maximise their involvement and impact by making strong connections within the IT, learning technology and communication communities on campus.

Further Reading

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