This is a repository copy of *Introduction*.

White Rose Research Online URL for this paper:
http://eprints.whiterose.ac.uk/100869/

Version: Submitted Version

Book Section:

Tattersall, A. orcid.org/0000-0002-2842-9576 (2016) Introduction. In: Tattersall, A., (ed.) Altmetrics A Practical Guide for Librarians, Researchers and Academics. Facet , London , pp. 1-9. ISBN 9781783300105

Introduction

Introduction

The purpose of this chapter is to give an introduction and context to the book and the theme. It will give an overview as to the changes within academia right now that are just part of a wider picture that include open access, MOOCs, big data, emerging learning technologies and finally altmetrics. It will explain why this change is happening, how it is all connected and how some library and information professionals are at the heart of it whilst others should pay heed to it. It will give an overview as to the key ideas and themes within altmetrics as well as how this fits in with existing academic cultures.

Main Body

Altmetrics is one of those terms, like MOOCs and big data that many people in academia have heard of but are not entirely sure what they mean. For a start it sounds rather geeky and perhaps something that sits within the domain of one group of experts, for example statisticians. In reality it is much simpler than that and has a much wider audience potentially, with some of that audience already unbeknowingly using some of the technologies that contribute to altmetrics. Altmetrics has the potential to be of use to every academic, PhD and masters student thinking of going into a research career. Whilst the term and concept that is altmetrics has only been around in popular use since 2012 the ideas and opportunities that look to exploit it have been around longer.

Whilst altmetrics, although not commonplace or widely discussed outside the offices of some fund holders, publishers, PhD students, scientists and a few librarians, does have significant traction and potential. So much so that this book was commissioned to help library and information professionals gain a better understanding of the subject. In this author's mind librarians and information professionals have an important part to play in the use of altmetrics. The opportunity is there for them to take, should they want it.

Whilst the altmetrics movement continues to grow and gain traction in some areas of research it is unlikely that by the time this book is published it will be entrenched within academia. Whilst MOOCs have taken a similar length of time to appear on the radars of the university teaching community it's likely that altmetrics is still just a blip on the horizon for most. There are several reasons for this, which this book will go into further detail later on.

The purpose of the book

This book sets out to achieve two things, firstly it is theoretical and explains why altmetrics has happened and how it fits in within the bigger picture of research and academia. Secondly it is a practical book as understanding the theory of altmetrics or any other new technology, platform or idea has little worth if a user cannot think of how it can be applied in the workplace.The book explains how different audiences can be reached and the methods you can employ even with minimal resources. The authors of this book have written to give you a complete guide as to the history of metrics and their importance, new developments and explain why some have seen the need to change how we measure and communicate scholarly outputs. This book aims to give practical advice to LIS professionals and academics by explaining the increasing number of tools available for researchers and librarians to use to measure, share, connect and communicate their research, as whilst altmetrics are the reason this title exists it would mean very little if the connecting technologies and ideas were not also covered. To some extent

altmetrics are like an iceberg, on the surface we may only see a collection of materials and measurements, whilst below the waterline a larger presence exists. Whilst part of this book aims to give those supporting researchers, not only LIS professionals but research support staff, the skills needed to deal with the many different scenarios they may come across in trying to engage research staff with new technologies. Put simply, you cannot just tell someone to try a technology in the vain hope it will change how they work. Instead you need to explain why they should change, the benefits, pitfalls and most importantly the practical skills to make it happen.

Altmetrics on the surface may seem daunting to some and doubly so for those who have not as yet dipped their toes into the world of social media, networks and (to return to a much-forgotten term) Web 2.0.,With so much choice available to consumers, whether it be smartphones, shoes or even bread there can often be the problem of decision fatigue and with altmetrics that is no different. There are literally hundreds of online and electronic tools that can now be used within the academic setting, some such as Twitter that are not only cross-discipline but also cross the professional and personal boundaries. Whilst more recently an increasing number of niche and specialised academic tools have appeared making the choice for some encouraging whilst for others an even greater deterrent, these deterrents or barriers relate to issues of time, privacy, application, security and choice, with the latter translating to "why chose one technology when a better one may come along next week".

For anyone wanting to understand altmetrics and more importantly encourage others to use them it is important to understand what tool does what and why you and your academics should use it. In the field of learning, technologists, lecturers and teachers apply a pedagogy to technology when they employ it, else they end up using technology for the sake of it. This can be counter-productive to the learning process, as students learn how to use a technology but don't necessarily discover more about the core topic the teacher is covering.   The same has to apply in research as there is an increasing demand on academics' time to produce publish papers, win bids and prove impact, so altmetric activities may be seen as an unnecessary extra

The Research Cycle

For many years now the research process and for a large part the researcher's environment has been a stable one. It can often be summarised as a simple cyclical process that either begins from an idea or hypothesis, collaboration or the call by fund-holders. Once researchers identify a research opportunity and obtain funds and time, (although the latter is trickier to source when juggling multiple responsibilities) they begin their project in earnest and whether it is based in the lab, in the field, coffee house or at their desk, at the end of the project they write up research with the hope of publishing it in some format. This is the model, and there has been little deviation from it for as long as anyone can remember. Technology may have come along to aid the process of completing the work from the use of word processors to high-performance computing systems, yet most other things have stayed the same. The process of promoting the published outcomes of the research was usually via a few formal, static channels, most notably the peer-reviewed journal and through conference presentations. The model is still widely practised and shows little sign of changing in the next decade.

Communicating any new research has often been left for the researcher to do, whether that be emails to personal networks or conference presentations. Publishers have released journal 'table of contents' alerts, but in reality very little happened in between these, beyond the

research appearing on journal shelves within the library or in searchable databases. That is until other researchers and professional support staff ran a literature search and discovered the new-ish research. These papers would then form part of the evidence for future research via the system of other researchers citing them.

Things have moved on somewhat since then. Journal publishers, although not employed to promote one paper over another are doing more to spread research via the use of social media, whilst at the other end of the spectrum many researchers are taking upon themselves to share their research and findings across the web via blogs and social media. This has of course been happening for some time in very small silos on the web, but for the most part the the version 'Research 1.0' is still very much the normal situation.

The course of the book

The book brings together various experts in their fields to help guide the reader through the practical and technical aspects of altmetrics. Guest chapters help synthesise the various ideas and reasons that have lead to various innovations and technologies to come together with one goal, to measure research.

The book begins with a chapter that makes the connection between altmetrics and social media and how we have got to where we are and where it might take us. It aims to explain that the Web, and more later Web 2.0 and social media brought about the right ingredients for platforms like Mendeley, Altmetric.com and ImpactStory to establish.

The next chapter is written by my colleague Andrew Booth from The University of Sheffield who is no stranger to writing for Facet publishing on topics relating to the library and information world. Andrew provides the reader with an interesting, entertaining and concise history of traditional metrics, their development, reasoning and the politics that have grown alongside them.

We will then hear from Euan Adie, the founder of Altmetric.com who looks at the other side of the metric fence and altmetrics as a whole. Euan's chapter looks at the other parts of the jigsaw following on from my chapter explaining the rise of Web 2.0 and social media bringing it firmly into the academic setting. The chapter explains the evolution of the several key players in the altmetric and academic publishing world that have tried to bring about a whole new way of looking at research outputs.

As you will find out by reading this book, that altmetrics has a lot of potential for not only academics but also fund holders, publishers and libraries. At a time when libraries are having to tighten their financial belts and cut costs on expenditure, altmetrics can provide some of the analytics to help tough decision making. Ben Showers, formerly of JISC and who has previously authored a book for Facet Publishing on analytics and metrics looks at a brief evolution of library metrics, including bibliometrics. Ben will look at what's happening in libraries right now and where the future seems to be pointing us.

We move onto the next chapter by another author well versed in the area of altmetrics and its potential for the academic community with William Gunn who is the Head of Academic Outreach at Mendeley. William discusses the various ways Mendeley is looking at the data coming from the references that Mendeley users store in their accounts and how this can form alternative metrics. William discusses the importance of discovering previously unseen data about published research and turning it into useful information. Previously citations and the impact factors of journals accounted for how research was measured. As with Euan's chapter William

explains that these days everything from downloads, views and shares can be checked and counted and give a new angle on academic quality. Though employed by Mendeley this chapter is by no means a sale pitch for the research technology company, now owned by Elsevier but gives a balanced view of where this part of scholarly communication and measurement is going.

The next chapter is written by myself and aims to give practical advice to LIS professionals as well as academics as to how they can employ altmetrics and the associated technologies in their organisation. The chapter provides a mixture of tactics and case studies that can be used to help make the most out of new ideas and technologies, especially in the face of inertia, and technology platform overload.

Following this I write about the many various altmetrics and related tools that can be used by LIS professionals and academics. One of the issues which the previous chapter touches on is that of inertia and organisational change. Not only do researchers and LIS professionals face the similar problem of technology choice but also understanding each technology and its application. It can be hugely time-consuming exploring new websites and technologies, especially as another, better solution can be just around the corner. The purpose of this chapter will at least give brief summaries of the technologies and ideas behind them to relieve LIS professionals the job of exploring the technologies available. The list is by no means complete, as only a wiki or online bookmark could achieve that feat. In turn I will present various scenarios to aid the reader make the connection between the technology and the use, in essence the research pedagogy. The is by no means an exhaustive list as new tools are appearing every week, and to some extent can be subjective, one tool can be seen in the altmetric context by one person and not by the other. The chapter aims to make the connection as to why in this author's opinion the tool is worthy of note in the altmetric setting. Some tools are very niche, others purely transient in their use in that you may only use it once to achieve your goal.

The next chapter investigates the increasingly important topic of post publication peer review. Although not always associated as an altmetric and still very new to most academics, post publication review, anonymous or otherwise remains a contentious topic within some domains of academia. The purpose of peer review was to measure and assess the quality of a piece of academic work, and post publication review is the same but after a paper is published. Therefore like altmetrics the desired output is very similar, to give new insights into a piece of published work. In addition to provide opportunities for possible collaborations between authors as they start to discover other researchers with similar ideas and work.

The penultimate chapter written by Claire Beecroft from from my department at The University of Sheffield looks of the opportunities that can be afforded by making better use of your mobile or tablet device. Altmetric tools are yet to appear in any kind of notable numbers on mobile devices, yet it is only a matter of time. That said, associated tools such as those for sharing such as Twitter and writing such as blogs can now be accessed easily online. Given that this book discusses the problems of information overload and time management; it is important that the LIS professional and researcher discover how to make better use of their smart device as part of a seamless altmetrics experience.

Finally the book concludes by discussing the points raised in the previous chapters and whether altmetrics does have a future. It will aim to predict, although in technology that's a pretty tough call, whether in time it can gain wider appeal and traction. Since being asked to write this book

back in 2013 a lot of things have changed. Altmetrics has shown no sign of going away, but neither has it replaced traditional metrics. I will discuss what that means for academia and whether in my mind we will ever find an ideal solution to the problem we have now that the Web has come along and more importantly the social web.

Conclusion

Altmetrics have not happened by chance, if anything things have been percolating for some years thanks to a mixture of social and cloud based academic and non academic websites and tools. Jason Priem's Tweet first mentions the term 'altmetrics' back in 2010 and was part of the driving force including Mendeley, Figshare, Impactstory and Altmetric.com to bring disparate communities and ideas together under the banner. As someone whose role is very much to keep an ear on the ground for new ways of working and technologies it was inevitable that I would come across altmetrics, which I did in April 2012 according to my email archive. Yet alongside other technologies and ideas I have promoted and investigated I try to maintain an objective eye. It can be too easy to get swept up by new platforms and ideas and decide everything that came before that is now redundant. By constantly moving forward can have its pitfalls as little time is left for reflection and a deeper understanding of an idea or technology. Yet as with MOOCs for the teaching side of the academic organisation a change was inevitable thanks to technologies. Whilst MOOCs have not destroyed or revolutionised universities on the scale that some predicted it has however made many assess existing systems and cultures.

Altmetrics exist and to some extent gaining foothold in various pockets in research, decision makers, fundholders, publishers and researchers are starting to take notice. In late 2014 the first European altmetrics residential conference took place at the Wellcome Trust in London. Although it is important to note that a previous one day altmetrics conference had taken place in the United States two years earlier featuring some of the key protagonists. The conference, quite fittingly titled 1:AM, was quickly sold out and featured a series of workshops and discussions from fund holders, publishers, researchers, librarians and altmetricians, if such a term exists. The conference raised many issues, one of the more notable ones raised by Jeremy Farrar, the Director of the Wellcome Trust who said: "We are in danger of overburdening it with ever more approaches, and it is on the edge of not being able to cope…such that we will destroy [its] creativity and innovation,"

As with MOOCs there is a chance that altmetrics may not be the end product, but a path towards something else. Hopefully something sustainable and transferable that provides value to everyone and everything, only time will tell. If altmetrics are to gain traction in research and its end result is to lead to something else that improves scholarly communication and measurement it will have achieved its aim. This can be achieved by a better understanding of why this is happening and how we can iron out any wrinkles. Simply by burying one's head in the sand and going on as before when the world outside is changing is no longer acceptable. Yet change can be very frightening and not always for the better, hence the need to understand what these tools do. When an academic asks you about a tool like Twitter or Mendeley your advice can be more than just the technical aspect but also how these things all connect together to aid scholarly communication and measurement.

How research is being formally measured is changing and the word 'impact' is appearing ever-more in offices and meetings across academia. Like government and their policies, how research is measured and rewarded will continue to change in a web-focused world. Whilst the

altmetrics story still has some way to go and without giving too much of the story away, how it plays out is anyone's guess. Yet the seeds have been sewn and the technology is being put to use by various individuals and organisations. This book looks to explore all of the possibilities and give the reader a balanced view of these possibilities and whether these should be exploited by the researchers LIS professionals support.