Bracing for Impact: The Role of Information Science in Supporting Societal Research Impact

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ABSTRACT
Academics are increasingly being asked to demonstrate the impact of their research beyond the walls of the academy. Societal impact measures were introduced as part of the Research Excellence Framework exercise in the UK in 2014 with a number of other countries, including Australia, considering similar assessments. As societal impact measures continue to proliferate there will be significant implications for academics, institutions, and academic libraries to document and support these activities. Information science is well-placed not only to guide practical supports within our institutions, but also to develop metrics and qualitative approaches to assess this type of research impact. This exploratory qualitative study — situated in a constructivist grounded theory methodology — investigated academics’ experiences and perceptions of the concept of societal research impact and the supports needed to facilitate this work. The definition of impact varied greatly among participants, but regardless of the participant’s conception, interviewees felt that they were not prepared, trained, or had access to the needed supports to adequately document non-academic types of impact. The data point to a number of emergent themes including a lack of relevant methodologies for tracking societal impact, the shortcomings of metrics approaches to document impact outside of academe, and the need for academic libraries to extend current reference and training supports to provide researchers with the tools and skills needed in this new impact landscape. Implications for research and development in information science related to scholarly communication, researchers’ information behaviors, and impact measures are also explored.

Keywords
Societal impact, academic libraries, information behavior,

INTRODUCTION
University researchers, worldwide, are being asked increasingly to demonstrate the impact of their research in society (e.g. Grant et al., 2009; Guena & Martin, 2003; Morgan Jones et al. 2013). The Australian Research Council (2015) defines impact as “the demonstrable contribution that research makes to the economy, society, culture, national security, public policy or services, health, the environment, or quality of life, beyond contributions to academia” (para. 6). Providing evidence of these benefits of research (alongside traditional measures of academic impact, such as citation counts) is now a requirement for many applications for government funding and forms a key part of documentation required by other agencies. In the United Kingdom (UK), for example, a societal research impact exercise was introduced as part of the Research Excellence Framework (REF) assessment of research for the first time in 2014 (http://www.ref.ac.uk/). In Australia, a similar research impact pilot program was completed in 2012 (Go8-ATN, 2012); the government is now considering whether to follow the UK’s lead and integrate this into the country’s Excellence in Research Australia (ERA) assessment process (DIICCSRTE, 2013). In Canada, the Social Sciences and Humanities Research Council has introduced the “Storytellers” contest to reward academics engaged in innovative research that “matters” in their communities (SSHRC, 2015).

Despite this recent expansion of the term “research impact” to include non-academic contexts, research on scholarly communication, institutional supports, and researchers’ information behaviors remains focused on academic impact. Citation counts, journal impact factors, h-index scores, and other metrics for assessing academic impact have been examined in information science for decades. Scholars’ citation patterns (e.g., Hassan & Haddaway, 2013), scholarly networks (e.g., Liu, Zhang, & Guo, 2013), bibliometrics and webometrics (e.g., Thelwall, 2008), and other topics have provided a rich history of the academic impact landscape in the field. However, little attention has been paid to assessing researchers’ activities and needs with regard to societal research impact. Although academics engage in outreach, information sharing and other forms of engagement with various communities (e.g., industry
stakeholders, the general public, research participants, government policy makers), academics’ information experiences as they engage outside of academe have not been explored in detail. This paper reports the results of an exploratory study of academics’ information behaviors within this context, including university and academic library supports needed to foster increased engagement with the community at large.

**LITERATURE REVIEW**

The topic of assessment, measurement, and evaluation of research is a complex and changing space. While demonstrating societal impacts of research is a topic of current interest, measuring research has been an area exploration and study. The literature review will set the context for this research. It will cover: impact measurements within the field of information science, the academic supports available to examine research impact, how the nature of academic work is changing, and how the nature of scholarly communication is changing.

**Measures of Impact in Information Science**

The discipline of information science has focused on strategies to document, measure and report research impact for decades. Informetrics and its subfields (e.g., bibliometrics, webometrics, scientometrics, altmetrics) explore the quantitative aspects of information, including a number of measures that have been used to assess the impact of research in universities. A number of review articles in the field provide useful overviews of the history and evolution of the field (e.g., Galyavieva 2013; Thelwall 2008; Borgman & Furner 2002). In particular, studies of journal impact factors (e.g., Althouse, West, Bergstrom, & Bergstrom, 2009), H-index (e.g., Ferrara & Romero, 2013), citation and co-citation analyses (e.g., Zhang, 2009) and related areas have a long history in the field and continue to be robust areas of study. More recently, studies in altmetrics have emerged to explore the possibilities for measuring social media postings, paper downloads, bookmarking, video views and other non-traditional sources of academic impact (e.g., Bornmann, 2014; Sugimoto & Thelwall 2013; Urquhart & Dunn, 2013). Although many of these measures of impact have been critiqued over the years in terms of their limitations and shortcomings (e.g., Pendlebury 2009; MacColl 2010; Smith et al., 2013; Hammerfelt, 2014; Barnes, 2015), these measures are often used to inform tenure processes, performances reviews, and grant submission reviews. As Smith et al. (2013) note, as these measures are “focused solely on amounts of published outputs and citations, they do not, by themselves, provide an accurate measurement of a scholar’s overall academic impact or quality. Yet, it appears as though they are increasingly being used in this way” (p. 412). Indeed, as Upton et al. (2014) note, researchers view contribution to knowledge as the main “impact” of their work, which becomes a primary motivator for a continuing focus on academic measures of impact (pp. 356-358).

Measures of societal research impact are only beginning to emerge in the literature; however, the papers that do address community-based research impact continue to promote a metrics-based approach to measurement. Oancea (2013), for example, mentions the development of new tools (e.g., www.impactstory.org; www.altmetric.com) designed to track impact outside of academe. However, these tools have not yet been studied empirically in terms of their usefulness or their applicability across disciplines. Bornmann (2013) states that measures of societal impact are needed but that this type of impact is more difficult to assess than scientific impact; further, he is concerned that this may lead academics to focus activities on what can easily be measured (and rewarded by their institutions) than what is most useful to society, but difficult to assess (p. 230). Although the UK’s REF exercise used a case study approach to document the impact of university-based research, this was not grounded in a qualitative case study methodology. Given et al.’s (2014) research is the first to explore the potential for qualitative approaches to be used to measure societal research impact; the report calls for the application of qualitative methods and writing styles to document and assess the impact of research within society. Indeed, as Bornmann (2013) notes, societal impact is still in the early stages of development, with no discernible academic venues (i.e., conferences, journals, awards) to recognize developments (p. 230). However, the implementation of the UK’s REF exercise, as well as developments in other countries, point to a fast-moving area of development within academic institutions, which is at odds with the evolution of traditional metrics in the impact space. As Bornmann (2013) states:

Even though robust and reliable methods for measuring societal impact have not yet been developed...budget-relevant societal impact assessments already are being conducted (or planned). This imbalance between research and practice is astonishing, given how long the methods of scientific impact measurement have had the opportunity to evolve before reaching the stage of being employed in budget-relevant practice (p. 230).

**Academic Supports for Research Impact**

In parallel with this shifting research landscape, academic libraries provide a range of supports to guide researchers in documenting and reporting research activities. Academic libraries have typically provided a number of services and supports to guide researchers in reporting academic research impact, such as tracking citation counts or journal impact factors (Corrall et al., 2013; Tenopir et al., 2013). With the development of institutional research repositories, academic libraries are also now working with researchers and university administrators to offer services related to data management, use of large datasets, assignment of research metadata, and other e-research activities (Cox & Pinfield, 2014; Kennan et al., 2014; Smith et al., 2013). As allocation of research funding is now closely aligned with performance indicators (see Blakely, 2014, p. 331; MacColl,
2010, p. 155), academic libraries play a key role in providing training and other supports to guide researchers and institutions in mapping research impact. As with research in information science, however, library services and supports also remain focused primarily on academic research impact metrics. Although Cox and Pinfield (2014) include provision of support for the UK’s REF assessment exercise as a role for academic libraries (p.300), societal research impact is not an area in which libraries have provided support to date. Additional research is needed to explore the potential supports that libraries can provide.

**Changing Nature of Academic Work**

By exploring researchers’ training and support needs for developing societal impact, potential roles for librarians and other institutional stakeholders will emerge. Although libraries have provided academic research impact services for decades, researchers’ needs may vary as job expectations evolve to embrace the broader impact landscape. Traditionally, academic roles include research, teaching, and service, with higher job weightings given to the first two categories. Service (where most societal impact activities are situated), has typically received fewer rewards within academe. As Macfarlane (2005) notes, “in the conceptualisation of academic life, the role of service has been, by and large, overlooked or trivialised as little more than ‘administration’ rather than essential to the preservation of community life” (p. 299). Indeed, many academics are unaware of the impact of their research outside of academe; as Upton et al. (2014) state, this “draws attention to an important truth about knowledge exchange: we have rightly come to recognize that it is not simply an add-on activity to be undertaken at the end of a research project; yet unless we regard it as additional in the sense of needing further resources, it is likely to suffer in the face of other, better resourced, demands on an academic’s time” (p. 359).

As governments and funding agencies shift priorities and call for more accountability as to the value of publically funded research, academic cultures must also shift. Researchers are called upon, increasingly, to justify their work (Côté & Allahar, 2011), resulting in a number of regulatory systems in universities (Gunter, 2012). For many academics, this has increased stress levels related to “their capacity to perform their academic work well in the face of changing student expectations and abilities, constraints on research funding, increased class sizes and the increasing bureaucratisation of higher education” (Bexley et al., 2011). As service expectations change, with an increasing focus on societal impact, professional development and PhD training will also need to evolve. At present, service is a poorly defined, multifaceted concept (Macfarlane, 2005), in which few graduate students have sufficient understanding or receive adequate training (Austin, 2002). Universities will need to provide additional supports to students and researchers to ensure that service expectations are met within this changing research landscape.

**Changing Nature of Scholarly Communication**

Scholarly communication is another key research area in information science. Historically, the field has explored scholars’ publishing patterns, but also concerns itself with “Open Access (OA) journals, digital e-print archives, and institutional repositories, and to press for public access to federally funded research” Bergman (2006, p. 108). While scholarly communication seeks to make research publicly available, the field has not been concerned with communicating scholarly materials beyond a scholarly audience (Drake, 2007). The majority of scholarly communication activities tend to be directed toward promotion and tenure reviews and refer, primarily, to academic publishing (Harley, 2010). Indeed, many academics feel unprepared to disseminate their work to non-academic audiences and are not typically provided with formal training to engage appropriately with the public (Austin, 2002; Bentley & Kyvik, 2011). As societal impact requires that research be shared with those who may benefit from the results, researchers’ ability to engage with their communities (such as industry, government, or members of the general public) is key to ensure research impact. However, As Hartz and Chappell (1997) note,

> With the exception of a few people . . . we don’t know how to communicate with the public. We don’t understand our audience well enough... We don’t know the language and we haven’t practiced it enough. (p. 38)

A recent report of Australian researchers, for example, “found that most science communicators actually favored participatory, critical approaches to science engagement but felt hindered by a lack of resources and organizational support for such engagement” (Metcalfe, Alford, & Shore, 2012, p. 275). Interestingly, academics who participate in public dissemination of their research activities also tend to have higher citation counts in their academic publishing (Bentley & Kyvik, 2011). This point, coupled with increased calls for public engagement, implies that “it might also now be relevant to start asking deeper questions about access to professional training, promotion of science communications theory, and the motives or not to access such information” (Cormick et al., 2014, p. 281). Worldwide, institutions have not yet developed strategies for systematically tracking and rewarding societal engagement and/or impact. As Jensen et al. (2008) note, “institutions now have a duty to invent ways of evaluating and rewarding the scientists who are active in widely disseminating their work” (p. 538).

**RESEARCH DESIGN**

The project used an exploratory, qualitative design informed by a constructivist grounded theory methodology (Charmaz, 2006) to investigate academics’ experiences and perceptions of the concept of societal research impact, including the supports needed to facilitate this work. In-depth interviews were conducted with ten academics at universities in Australia to examine: 1) their understandings of the concept of “research impact” from both academic...
and societal contexts; 2) their information behaviors related to impact activities; and, 3) existing or needed university-based supports to foster societal engagement. Following ethics approval, participants were selected using a maximum variation, purposive approach to include individuals at various career stages, in different disciplines, and with a mix of age, gender and other demographic details. The study included 10 participants, 6 men and 4 women, ranging in age from 33 to 65. Participants included: five academics in administrative positions, three researchers in ongoing positions, one post-doctoral research fellow, and one executive director of marketing and communications. Interviews were conducted by phone or Skype and lasted approximately one hour; all interviews were audio-recorded and transcribed for data analysis. Data were analyzed using a constant comparative grounded theory approach to identify key themes. During the first stage of analysis, the co-authors analysed the dataset individually; initial themes were then compared for similarities and differences by the group, resulting in the final set of core themes discussed in the section that follows.

RESULTS AND DISCUSSION

Participants, with their varied backgrounds, discussed a range of views on societal impact of research from how they defined societal research impact, to the difficulties they had in measuring that impact, to the supports they needed from academic libraries and other areas within their institution.

The Problem of Defining Societal Research Impact

Given the historic focus on academic measures of research impact, it is perhaps not surprising that interviewees had difficulty defining or discussing how best to measure and provide support for research impact activities outside of academe. When asked to define the concept of “research impact” two key trends emerged: 1) the lack of a shared understanding of how best to define the concept; and, 2) that despite a general understanding that academic and societal impacts are different, there were few ideas generated about how best to measure impact outside of academe. Terry, a 60-year-old Dean who had been involved in trials of the UK’s REF exercise on research impact, presented a clear and cogent definition of the concept of societal impact, stating:

Impact is something that is judged not by the person who generates the new knowledge or the exploitation of the new knowledge, but by recipients of new knowledge of whether they find that actually it makes a difference … If the impact only exists within academia it isn’t impact.

Similarly, Robert, a 47-year-old senior executive in research administration, described impact in this way:

Well [research impact] means two quite distinct, different things to me. It means an impact on the world outside of academia, as in, the world is changed as a result; either policy makers change their policies, change the way they make policies, or practice changes, or the way in which practice is formed changes. And then the other completely different interpretation consistently with the idea of impact is academic progress.

Duncan, a 56-year-old senior research scientist, saw more layers to the concept of impact, beyond just the academic and non-academic.

It seems to me that it’s a number of different levels. You’ve got personal, the impact on you personally, you’ve got the impact for your employer, and then you might have the impact for the people that are funding you and they may be different… And then you’ve got the impact for the state or the country as a whole.

At the heart of the various definitions was a key concept that has also been addressed in recent, published definitions of impact (e.g., ARC, 2015) – i.e., that research must make a “difference” or bring a “change” in the world to be classified as having an impact. This is an important point to note when considering possible measures of impact, as well as the types of library or other university support services to provide to academic staff and students. For example, if an academic shares research results with the community at a public workshop, or their research is profiled in a national newspaper, that research would only be said to have had an impact once a change or a difference was noted. Although media reports, workshops, advisory meetings, and other strategies may be classed as pathways to potential impact, they do not provide evidence of impact in and of themselves.

Challenges in Measuring Societal Research Impact

A number of participants noted this challenge when considering their own research, or that of their colleagues and students, particularly when it came to exploring how best to document or measure evidence of societal impact. Indeed, several participants questioned whether impact could actually be assessed and, if so, how that would be done. Karen, for example, a 37-year-old postdoctoral research fellow, stated,

I find it more luck of the draw on the non-academic side of things and in community and policy uptake. … When someone else has taken up that idea as their own, [that] is probably the greatest impact you’re going to have; but then there’s no way to link yourself to that when you come to demonstrate that impact formally, either in a promotion or a grant application.

Randall, a 54 year-old research center director, noted that scholarly thinking about the concept of impact has not yet fully emerged. He noted

Yeah, I think [societal impact has] become a little bit more on our radar now because people are trying to talk about impact. But we just don’t really have a handle on impact. What are the components of impact? What are the metrics? … We’re not quite there yet, but I think we’re moving in that direction.
This view is echoed by Innovative Research Universities, a consortium of institutions in Australia, which notes that although a number of research metrics exist, they do not measure societal impact (Innovative Research Universities, 2013). Although some measures of societal impact (such as numbers of patents or policy changes) may be quantified, others may require more nuanced approaches to documenting change arising from research. Also, different disciplines will require different measures, just as they do for academic impact. Robert, for example, described his concerns for humanities and social sciences researchers in trying to document societal impact, noting

Ultimately, the [societal research] impact route sounds like it would favor the technical, and engineering, and medical sciences more than it might the social sciences and humanities, principally because it seems it’s less messy [in the sciences] to draw those lines between pathway, impact, numbers of patents produced and [other potential measures of impact].

The information science literature acknowledges problems with existing impact metrics, and also recognises that these traditional measures do not take into account societal impact (see, for example, Bornmann, 2013). As the shift in thinking, globally, continues to move towards the expectation that research must demonstrate its value to society (Bornmann, 2013, p. 217), information science researchers and academic librarians must position themselves as leaders in the study and design of impact measures and in identifying needed supports for scholars engaging in this work. The nature of societal impact requires a shift from a metrics landscape (as is the norm for measuring academic impact) to one that uses various assessment strategies, including qualitative research approaches (Given et al., 2014).

Indeed, participants were unsure as to how best to gather evidence of the impact of their work outside of academe. As many participants noted, researchers are often quite removed from the policy or practice spaces where change decisions are made, so may be unaware of the impact of their work in society. This is in keeping with Bornmann (2013)’s finding that researchers have a lack of awareness of the impact of their work (p. 230), as well as Upton et al.’s (2014) identification of lack of resources and time to conduct impact work (p. 359). Even when researchers have links to industry or community groups, or maintain relationships with participants, the uptake of research leading to demonstrable change is not something that is easily knowable or trackable. As Terry noted, “unless you are being cognisant of gathering the evidence of the impact whilst you are doing the work, then it’s very difficult to retrospectively gain the evidence of impact.” Randall highlighted this point, in talking about research conducted in the health sciences:

Often it’s very, very hard to get that information because we really don’t know for certain. Yeah, we develop things that are efficacious and then we even do effectiveness studies; but in real life, the long-term knowledge translation and the uptake… How do we know that they actually work in the real life settings when [changes do not involve] the researchers?

Unfortunately, existing research structures do not readily support tracking and measuring societal research impact. Grant funding, for example, is typically provided for original research activities during relatively short (e.g., three to five year) periods. Longitudinal engagement with potential research beneficiaries may require new funding or variations to research designs. Similarly, researchers may require additional supports to identify existing impacts, to build ongoing relationships with relevant community stakeholders, and/or to apply relevant methodologies to the tracking and reporting of impact data. All of these are relevant areas for academic librarians to pursue as part of reference and information literacy services for research staff and students.

Academic Library Supports for Societal Impact

Just as libraries have responded to the needs of academic researchers in recent years by offering support to track and enhance academic impact measures (e.g., Blaked, 2014; Corrall, Kennan, & Afzal, 2013), support for societal impact activities may be a natural area for extension of academic library services. In reflecting on existing services, Samantha, a 33-year-old research fellow, described supports in place for academic measures of impact:

You can call up the librarian and they will determine your h-index for you. And they’ll do your citation factors. The research office… itself doesn’t really get so involved. But the library, for [the Excellence in Research Australia exercise], did quite a bit of analysis around citations.

Similarly, Jay, a 47-year-old engineering professor, discussed a desire to connect with library staff to extend his access to other forms of academic impact metrics.

I’d love to have my metrics for downloads of my papers that I’ve… and these are fairly standard kind of metrics in some way. I don’t think I can get them and I’m now thinking I should talk to my research librarian and see if we can disseminate those, and so I hope they collect them.

Indeed, many participants discussed their hopes for going beyond traditional metrics, which is an area where academic libraries can develop new services and supports. Samantha, for example, talked about the importance of social media as “a growing area where I think we should be starting to look at how our researchers are engaging.” Jay talked about both metrics and altmetrics, though he was skeptical as to whether the latter could provide useful data. He notes:

So, I’ve got my Google Scholar page, and I have a look at that every now and then and see how the citations are going… [And] I’m a bit of a fan of altmetrics, although
I’m not convinced we have the data collection or even data analysis and understanding yet to make much out of it. But I have a ResearchGate profile and LinkedIn, and it’s kind of interesting to see who’s looking at stuff.

Randall, a 54 year-old research centre director, also discussed wanting to move in the direction of altmetrics:

That’s something on my “things to do” list. I’ve started to, but I haven’t really wrapped my head around the components. We’ve been starting to track media hits and other… Something that we’ve practically developed and published pieces on it and, you know that’s been picked up and used in other countries and things of that nature [but] it’s been very ad hoc.

Overall, participants did not identify any existing library supports that could be applied to their work in the societal impact space. However, they did mention a number of areas where additional supports are needed to meet the challenges of measuring and tracking societal impact. Participants reflected on the roles of various university units, including communications offices, research offices, and academic libraries. Overall, the integration of societal impact measures was seen to be a burden – i.e., a new set of tasks and responsibilities added on top of traditional academic teaching, research and services roles, but without existing supports. Other groups share this view of the work being a burden. In discussing Australia’s proposed evaluation exercise in based on the UK’s REF, the Australian Academy for Science stated that such an exercise would “necessitate the employment of additional people by universities. Undertaking this new assessment process will come at a financial cost and will result in lost productivity” (p. 3). This is consistent with other research that demonstrates that academics believe that external funding and scholarly activities are valued highly by universities, while community service does not receive the recognition it deserves (Bexley et al., 2011, p. 24-25).

However, there are a number of areas where academic libraries can extend their services to foster societal impact developments. Librarians, for example, could guide researchers in the development of website and social media profiles, helping them to share their work via LinkedIn, ResearchGate or other platforms, and promoting research activities on Twitter, can enhance the reach of research results beyond academe. These tools offer pathways of sharing knowledge with potential users in local communities, government and other non-academic stakeholder groups, which can lead to potential impact across society (see Given et al., 2014). Academic librarians are well-positioned to provide information literacy training and reference support in the use and management of these tools (Bladek, 2014; Hendrix, 2010). It is important to note, however, that altmetrics do not track or measure societal impact; rather these tools track consumption patterns (Barnes, 2015, p.8) such as paper downloads, number of Twitter retweets, or web profile views. Although these metrics provide details about the amount of traffic on a site or the reach of a particular publication, additional methods are needed to track and measure the uptake of research to effect change. As Given et al. (2014) note, qualitative research approaches may be useful to document and understand how research results have affected a particular community or created change in society at large.

Another area where librarians can provide support to researchers is in the selection of appropriate venues to engage with non-academic stakeholders. Samantha mentioned that a shift in research focus towards societal impact has the potential to alter the venues in which academics publish. In disciplines where journals are ranked (and selected by authors) based on journal impact factors or other measures of reputation, for example, researchers may need guidance and support in identifying and selecting appropriate non-academic publishing sources. She notes:

If, for example, you came to me and said ‘you’ve got a lot of this [low-tier] journal… why are you publishing there?’ And then if I could explain, ‘well, actually I have much higher [societal] research impact in terms of policy and practice change because the people who work in the industry read that journal, you know, that’s why I’m doing it.’ It’s not because I’m a crap researcher and I can’t get published in another journal.

Guiding researchers in the selection of appropriate venues for publishing is a core service in academic libraries. Help guides, information literacy sessions and other supports are designed to guide researchers towards reputable venues. However, current services are based on academic scholarly communication patterns and expectations grounded in the desire to enhance and strengthen academic research impact. Academic libraries offer workshops on how to identify h-indices, provide one-on-one help to track citation counts, and subscribe to citation tracking databases like Web of Science (e.g., Bladek, 2014; Hendrix, 2010). Extending library services to include appropriate dissemination venues for societal impact is only one of many important steps to provide support to researchers to develop their work in this area. And yet, it is unclear whether librarians have the skills and knowledge required to advise in these areas, at present (Herther, 2009; Kennan, Corrall, & Afzal, 2014). Similarly, future development work is needed to identify and/or create tools that will allow researchers and institutions to track and measure societal impact. Whether these are metrics-based tools, or those that rely on qualitative methods of assessment, there is a great deal of work to be done in this area.

In addition to library services, a number of other institutional supports were identified through discussions with the participants. Karen, for example, referred to the many “administrative” tasks involved in contacting community groups, designing reports for varied audiences, and coordinating workshops and other outreach activities. Karen’s perspective was that institutions needed to provide
new supports to researchers in support of this work; she noted:

Whether [universities could provide] extra administrative support to help communicate results or to keep relationships and engagement with community partners, or to be able to organize events for them. Like I think that’s where the actual benefits will be made. And without overburdening researchers to have those administrative and communication supports to be able to value add. So instead of just going to a conference, or writing a journal article, to run a community forum.

The ability to communicate with non-academic stakeholders was another key area highlighted by participants where researchers need support and training. Once potential venues are identified, the writing or communication style needed to engage with those audiences may require additional training for researchers and/or specialist staff who can develop materials to share with those audiences. Jay, for example, highlighted the importance of university media and communications officers’ ability to write in lay language; he noted that they can “take all that rather complex scientific information and put it in words which are easy to be understood by everybody.” Providing supports in the translation of academic research into language and materials that are appropriate for mixed and non-specialist audiences is vital for fostering societal impact.

As Susan, a 42-year-old engineering professor and research administrator noted, the ERA assessment process (related to academic impact measures) was a wake-up call for her institution in terms of staffing supports and processes. In that case, the university “had the data but they had no idea about its quality, they had no way of doing anything much with it... [so the end result was] left to very arbitrary processes that lost key information.” The need for systematic processes, priorities and rigor is a key area for development work in information management for institutions and for individual researchers. Crafting mechanisms for engaging with non-academic stakeholders, tracking research uptake over time, and documenting the stories of the impact of research in the community at large requires time, resources and funding (Given et al., 2014).

Although research offices are adept at supporting grant application development, tracking submissions, reviewing budgets and tracking publications arising from research, researchers may need additional support during data collection, analysis and writing phases for societal impact activities. Jay, for example, discussed a unit at one institution whose purpose was to focus on commercialization and marketing of university-developed technologies. These types of units can advise researchers on the possibilities for non-academic uptake, and can also document the reach of commercialized outputs. Jay described some of the activities and areas of expertise where this particular unit was positioned:

Auckland Uni Services, which is a wholly-owned subsidiary [of the university], does all the commercialization, handles the industry contracts and all that stuff. And they were interested in [societal impact] around patenting, IP protection and...licensing.

Similarly, Samantha noted that there are methods of capturing societal impact that are utilized by the business community but that are not currently used within academe:

There are methods that are out there that are used; they just aren’t used by universities. And whether or not it’s because the universities don’t see them as robust or valid, or they’re not aware of them, or perhaps it’s just another metric and we’ve got enough metrics.

Samantha’s comment reinforced a point raised by Susan about the level of expertise and knowledge within universities, which questions whether institutions are able to provide the support needed – at present – for societal impact activities. As she said, “there’s a whole specialist group of people that need to be developed and... For some people who want to get into it, it’s going to be a fascinating and lucrative area.”

CONCLUSIONS

Although the societal impact landscape is a new and emerging area, global trends to document and measure the benefits of research on society (such as that used in the UK’s REF exercise) are increasing the pressure on researchers and institutions. Granting agencies are focusing, increasingly, on the societal return on investment of publically funded research schemes; and, researchers are being asked to demonstrate the influence of their work in practice. In this context, it is vitally important that academics and university administrators understand, fundamentally, what societal research impact is, as well as how to demonstrate that impact to governments and funding agencies. Despite the push for accountability and for the extension of research results into more and different applied settings, universities, academic libraries and researchers themselves do not yet have the tools or strategies needed to fully engage with their broader communities. The findings of this exploratory study demonstrate that within academe discussions are needed on how best to define and measure societal research impact. Without a clear understanding of the concept, supported by evidence of impact in society, institutions and researchers may not be able to demonstrate the full value of their research. Information science researchers and practitioners are well placed to lead new developments in these areas. The long and rich history of informetrics for research measurement can, potentially, be extended to include societal impact outcomes. Similarly, research and practice in scholarly communication can inform new strategies for helping researchers to identify appropriate dissemination venues. Social media use can be further developed (e.g., through information literacy sessions) and studied (e.g., through information behavior research projects focused on academics’ research practices)
to inform how best to engage with various potential research users. Although societal impact measures may certainly require a shift in universities to further value (for example) the community service activities that can lead to societal impact, academic libraries are well-placed to identify and develop new supports for these activities. Academic librarians and information science researchers can be proactive in their support and analysis of research trends in this area, to ensure that researchers and institutions are well-informed and well-prepared to engage with their communities in appropriate and productive ways.

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