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# Where Is the Evidence? Realising the Value of Grey Literature for Public Policy & Practice, A Discussion Paper

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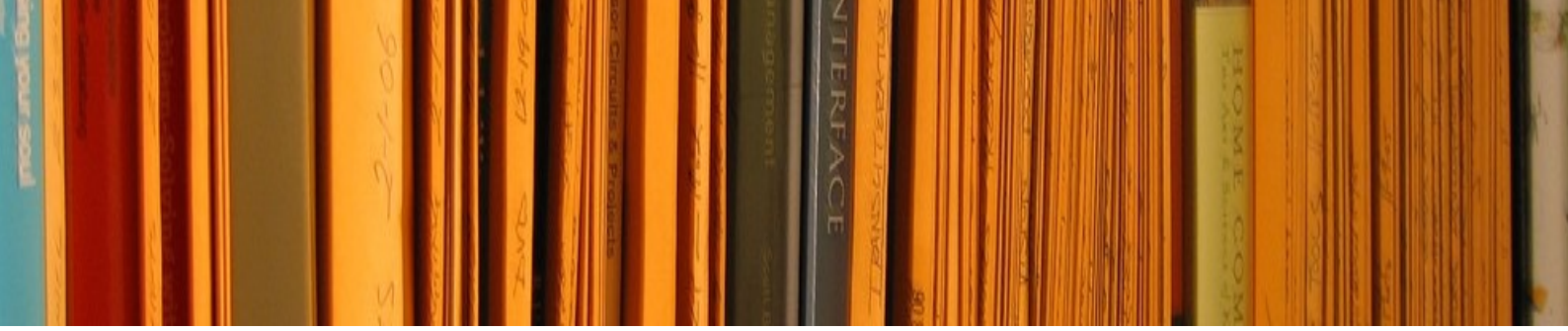

# WHERE IS THE EVIDENCE?

## *Realising the value of grey literature for public policy & practice*

**A discussion paper**

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**Grey Literature Strategies, Swinburne Institute for Social Research**

**17 November 2014**

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**Review code: External review.** This publication was reviewed by members of the Grey Literature Strategies Advisory Group. Details are available here: http://greylitstrategies.info/about/advisory-group

### *Feedback*

This discussion paper provides a snapshot of our research to date and makes a number of suggestions and recommendations. This is the starting point for what we hope will be an ongoing conversation amongst interested parties. We encourage readers to provide feedback that will help inform our final report and further activities. You can make a comment on the discussion paper at Policy Online, http://apo.org.au/research/where-evidence-realising-value-grey-literature-public-policy-and-practice, email Amanda Lawrence alawrence@swin.edu.au, tweet @greylitstrategies or #greylit, or via the GreyNet Linkedin Group. Please provide your response by 1 February 2015 for us to be able to incorporate your input into the final report.

# Abstract

The internet has profoundly changed how we produce, use and collect research and information for public policy and practice, with grey literature playing an increasingly important role. The authors argue that grey literature (i.e. material produced and published by organisations without recourse to the commercial or scholarly publishing industry) is a key part of the evidence produced and used for public policy and practice. Through surveys of users, producing organisations and collecting services a detailed picture is provided of the importance and economic value of grey literature. However, finding and accessing policy information is a time-consuming task made harder by poor production and management of resources and a lack of large-scale collection services able to host and make available relevant, high-quality resources quickly and efficiently. The paper makes recommendations for changes that would maximise the benefits of grey literature in the public interest and seeks feedback from readers to inform the final report of the research project.

# Executive summary

Public policy work increasingly relies on a wide range of resources — some are traditional scholarly publications, but the majority are 'grey literature'. Reports, discussion papers, briefings, reviews and data sets produced by government, academic centres, NGOs, think tanks and companies are heavily used and highly valued in policy and practice work, forming a key part of the evidence base.

The huge amount of information and research published online provides unprecedented access to knowledge, from a wide range of sources, enabling a much greater level of understanding and participation in public interest issues. It also brings a number of challenges: searching, sifting, evaluating and accessing information and research are time-consuming and often frustrating tasks occupying a large portion of the day for those engaged in policy work.

Online publishing also creates a new paradigm for those whose task it is to support policy and practice work through effective resource provision and information management. As a result, digital curation of policy resources, particularly grey literature, is dispersed and fragmented, creating a digital black hole of resources that are being lost from online access over time.

### *About the project*

The aim of the Grey Literature Strategies research project is to investigate grey literature's role and importance in public policy and to find ways to enhance its value. A key method used was online surveys of producers, users, and collectors of information and research for policy and practice, conducted during 2013.

### *Grey literature is heavily used and highly valued for policy work*

The most **common** resources, consulted regularly or occasionally by over 80% of surveyed policy information users, are reports, journal articles, discussion papers, and 'briefings, guides and research reviews'. News reports and conference papers are used regularly by 79%, and two-thirds of policy workers use books and data regularly or occasionally. Working papers, submissions and evaluations are used by more than half of all policy workers regularly or occasionally. The most **important** or very important resources used are reports (81%), journal articles (75%), discussion papers (69%), briefings, reviews and guides (66%) and data sets (61%).

Public policy is driven by a complex network of knowledge exchange across and within sectors. Government is not only a consumer of information and research, but is also a major producer in its own right. The **most important sources** of information for policy workers surveyed are government departments and agencies (94%), university centres or departments (83%), NGOs (79%), scholarly or commercial publishers (78%), think tanks (55%), and commercial research companies and consultants (31%).

Information users report that they value grey literature because: their work depends on grey literature; grey literature provides a broad view of the research environment and perspectives; grey literature is a unique source of information on topics, sources and issues not found elsewhere; grey literature is essential for public policy; academic journals do not cover the same issues; grey literature is widely available online for free; and grey literature is often the most timely source of information.

### *Policy grey literature is produced for impact and often paid for by public funds*

The most important reason to produce material for more than 90% of organisations surveyed is to contribute to the evidence base and inform public policy. Other aims are to translate knowledge for public use (84%), and to maximise public access to research and information (79%). Financial gain is not an important consideration for most organisations surveyed, even for those in the commercial sector. It is probable that most of the material produced by government, NGOs and education organisations is paid for through public funds.

### *Policy makers and practitioners struggle to find and evaluate relevant resources*

Dissemination, discovery and access have become increasingly complex in the digital environment. Most of the users we surveyed find out about new information through the websites of key organisations, email newsletters, and colleagues sharing information. Almost half of surveyed information users would use resources more often if they were easier to find or access, with the most requested being journal articles, data and statistics, reports, and government material. Finding relevant resources including knowing what exists and where to look, and the amount of time required to sift and evaluate, are major issues for 45% of information users surveyed. Accessing resources — particularly the cost of journal articles and market research, and problems accessing government content — are problematic for 43% of information users surveyed. Poor production quality, the difficulty of evaluating credibility, the lack of collecting services and problems caused by link rot were also mentioned.

### *There is a lack of digital curation and services are hampered by outdated legislation*

Finding and accessing policy information is a time-consuming task made harder by poor production standards and a lack of large-scale collection services able to host and provide relevant, high-quality resources quickly and efficiently. Despite users' preference for online access to policy resources, large digital collections are much less common than print. There is a series of factors that make the collection of digital grey literature difficult, despite the value users place on it: copyright; the lack of digital infrastructure planning and management; the difficulty of discovery and evaluation; and the lack of standards in production and cataloguing.

### *Opportunities and recommendations*

There are clear opportunities to reduce the challenges and increase the benefits of digital grey literature. Production practices could be improved, and mandates could be created for greater access to publicly funded research. Large-scale digital collection infrastructure, collaborative cataloguing systems and shared standards could be developed for efficient collecting at web scale. Reforming legal deposit and copyright legislation to support fair use provisions for preservation and access to non-commercial material of public interest would make large-scale collecting more efficient and achievable. Such reforms are a no cost win:win.

We therefore provide the following five recommendations for maximising the value of grey literature:

Estimates of the economic value of grey literature in Australia based on survey responses scaled to the national level:

- Production costs for grey literature are estimated at $30 billion p.a.
- The activity-based use value of grey literature in Australia is estimated to be $33 billion to $43 billion p.a.
- Link rot and deadlinks cost Australia $5 billion p.a.
- Total grey literature related costs among Australian collector organisations are estimated to be $265 million p.a.
- The efficiency impact of grey literature being more readily accessible could be around $17 billion p.a. nationwide.

## Recommendations

1. Improve production standards and transparency
2. Ensure greater discoverability and accessibility
3. Recognise the value of grey literature for scholarly communication
4. Improve collection and curation of policy resources
5. Reform copyright and legal deposit legislation.

# Introduction

The internet has profoundly changed the ways we produce, use and collect research and information for public policy and practice. A huge range of organisations now create and distribute policy information and research online and in print. A large portion of the population search for, access and use policy information. Only a small group attempt to find, select, catalogue and collect resources to support the information needs of the policy and practice network.

As a result there has been a major increase in the amount of research and information being produced and made available to the community directly by organisations — without recourse to the commercial or scholarly publishing industry. These publications are sometimes known as 'grey literature', because they are distinct, in various ways, from standard publications such as journal articles or books ('white literature') or ephemera ('black literature') (see Figure 1.). We use this term because it is recognised in various domains, such as health and criminology, and is helpful in conceptualising a distinct set of resources important for policy and practice.

Policy making is a complex business, but a key element is the need for information and, it is hoped, for research and evidence. While many consider peer-reviewed journals to be the most credible source of evidence, the reality is that evidence is found in many kinds of resources circulating the public sphere. Most of these fall into the grey category because they are produced directly by organisations, including government departments and agencies, academic research centres, NGOs and think tanks, and commercial consultants. Common types include reports, discussion papers, working papers, briefings, literature reviews, white and green papers, submissions, evaluations, fact sheets and guides, position papers, and procedures.

**Figure 1. Examples of published and grey literature document types**

| Published (white) literature | Grey literature | Other (black) - not considered |
|---|---|---|
| Books<br>Book chapters<br>Journal articles<br>Magazines<br>Media reports and articles<br>Conference proceedings<br>Legislation | Reports<br>Discussion papers<br>Briefings<br>Guides<br>Data sets<br>Conference papers<br>Submissions<br>Evaluations<br>Working papers<br>Theses<br>Blogs & social media<br>Procedures & policies | Annual reports<br>Financial statements<br>Tax returns<br>Emails & letters<br>Minutes<br>Conversations |

### *About the research project*

This paper presents the findings of the Grey Literature Strategies research project, an Australian Research Council Linkage Project (LP120100309) conducted in partnership between Swinburne University of Technology, Victoria University, the National Library of Australia, National and State Libraries Australasia, Australian Council for Educational Research and the Eidos Institute. The aim of the project is to investigate grey literature's role and importance in public policy and to find ways to enhance its value. Our study considers the three major elements of the grey literature ecosystem — users, producers and collectors. The methods employed include online surveys and interviews, a review of policy and legislation, and a survey of infrastructure and digital collections.

This paper outlines the results of three online surveys conducted in 2013 of information users (943 Australian individual respondents), producing organisations (144 Australian organisations) and collecting services (114 Australian organisations). Because our respondents chose to participate in our surveys (a convenience sample) we do not assume that their responses represent the views or experiences of their respective sectors as a whole. Within each group we had respondents from government, education, civil society organisations (NGOs) and the commercial sector. Detailed results for each sector will be available in the final report.

# Background

What counts as evidence in public policy is a complex and contentious issue. Some of it is research, creative work undertaken on a systematic basis in order to increase the stock of knowledge and to use this knowledge to devise new applications (OECD 2002). However research is just one part of what might be considered evidence, with a range of other kinds of information and contextual knowledge also playing a part (Nutley, Walter & Davies 2007, p.20) (Figure 2.). Some grey literature can be characterised as research, being the result of sustained and systematic inquiry by academic or other researchers. Less rigorous types of investigation may also provide new and useful insights on a public interest issue, such as project reports, conference papers, reviews or evaluations. And some grey literature is more informational knowledge - the translation of research as information sheets, reviews or guidelines, or the production of non-research content, such as procedures, policies, plans and strategies, stakeholder views, advocacy statements and other resources.

**Figure 2. Policy grey literature is produced by government departments and agencies, university research centres, civil society organisations and think tanks. It covers a diverse range of issues.**

We consider all of this material to be part of the evidence base if it is being used to inform policy or practice work in some way. We do not intend to engage in the debate around what evidence is appropriate or acceptable, or how to increase the use of certain types of evidence, particularly academic research, in public policy (see for example Bastow, Tinkler & Dunleavy 2014; Cherney & McGee 2011; Nutley, Walter & Davies 2007; Sharples 2013). As the title of this paper indicates, our concern is to clarify this: *where* is the evidence that is being used for policy and practice? By this we mean where does it come from, how is it produced and disseminated, how do people find and access it, what issues do they have in doing so, and how is it being managed and preserved for long-term access?

### *From Gutenberg to the computer – grey literature's long history*

Grey literature and the public sphere have a long history, dating back to the 16th and 17th centuries, when the printing press provided a new means for religious and political pamphlets to be mass produced and distributed in Europe and the UK (Briggs & Burke 2009, pp. 64–65). Religious and political pamphlets were seen as both a threat and an opportunity for ruling powers in Europe and they became a key vehicle for political and social debate (p. 70). It is not surprising that the need for legislation to manage and control printed matter soon became an issue and the first legal deposit legislation was introduced in France in 1537 (Larivière 2000, p. 6). Legal deposit was designed to ensure publications were collected and preserved for future generations, and it provided a means for rulers to monitor what was being published and by whom (Larivière 2000, p. 7). Despite any ulterior motives for its introduction, legal deposit has been a key element in efforts to collect, preserve and provide access to all kinds of printed matter over the centuries. It is a key reason we have magnificent collections of printed works housed in libraries around the world.

The cost of producing print material was a natural limitation of the medium, and newspapers, book publishing and journals developed into major industries from the 17th century onwards. However governments, organisations, churches, private companies and wealthy individuals continued producing their own material in many forms, and grey literature retained a central role in public debate and policy making over the centuries, although increasingly overshadowed by the formal publishing industry.

In the 20th century, the volume of grey literature grew in line with the general increase in research and publishing, spurred on by two world wars and assisted by the development of typewriters, copiers and, by mid-century, computers. New services such as the Education Resources Information Centre and the National Technical Information Service were set up in USA to collect print reports and government material, while the British Library initiated a grey literature collection policy from the 1950s to acquire the numerous reports being produced, particularly in the USA, during the post-war research boom (Tillett & Newbold 2006).

### *From print to digital, scarcity to abundance*

In the digital environment the cost of producing and disseminating grey literature has reduced to the point where any person or organisation can write, publish and participate in policy discussion and debate. The historic roles of publisher, librarian, researcher, distributor and news service are converging and transforming. The scale and rate of change has been hard to predict or adapt to, and many of our institutions, infrastructures, practices and legal frameworks are still stuck in print-based paradigms. These issues compromise some of the benefits of digital technologies and present a host of new challenges.

A key issue, we believe, is the need for new ways of managing and curating digital resources of public importance. Recent investigations, such as the UK Finch review on improving access to research publications (Finch 2012) and the US Blue Ribbon Task Force on digital preservation (Blue Ribbon Task Force 2010), share our concerns and recommend improvements in the way grey literature is managed and collected, in order to maximise the benefits of publicly funded research.

> *Clarification of the long-term value of emerging genres of digital scholarship, such as academic blogs and grey literature, is a high priority. Research and education institutions, professional societies, publishers, libraries, and scholars all have leading roles to play in creating sustainable preservation strategies for the materials that are valuable to them.* (Blue Ribbon Task Force 2010, p. 3)

In Australia (and many other countries) legal deposit laws only cover print materials. This means that national and most state libraries are not able to collect copies of digital materials without permission from the copyright holder (Attorney-General's Department 2012). A complex mix of exceptions to the Copyright Act cause confusion, are regularly flouted and hinder the use and preservation of materials for research and policy making in the public interest (ALRC 2014). Infrastructure and standards for digital collecting are insufficiently developed or supported and current collecting practices are unable to keep up with the scale of production, nationally or internationally (Dempsey, Malpas & Lavoie 2014). Too often research and policy publications are published without adequate bibliographic information, reducing their utility and credibility and increasing collection costs. Website content that is managed in a haphazard way causes deadlinks or reference rot — undermining the evidence base and making research inaccessible. Users working on policy issues are overwhelmed by the amount of material they need to sift and evaluate, and experience a range of discovery and access issues, reducing productivity and compromising policy outcomes.

> *The technological developments of the last 60 years have made more information more available to more people than at any other time in human history. At the same time, however, the cost of those technologies, and the cost of gaining access to information through them, have made it often difficult and sometimes impossible for information to be obtained by its potential beneficiaries. (Feather 2013, p. xviii)*

It is in this context of rapid technological change and deformalisation of the publishing industry that we have undertaken the first detailed study of the role and value of grey literature for public policy and practice.

# 1. The role and value of grey literature in policy and practice

Our research considers public policy practice and development as a complex network of interactions within and across government, education, civil society organisations and the commercial sectors. This policy network involves the political process, government and public administration, but also policy analysts, practitioners, researchers and advocates within and outside government. Staff in government departments and agencies, advisers in political and parliamentary offices, university research centres and departments, lobby groups and think thanks, charities, professional associations and many other kinds of civil society organisations, commercial consultants, industry groups and business are all involved.

We focus on the flows of information that keep this complex network of actors and activities operating. Information and research are the currency of public policy, but what exactly gets bought and sold, produced and consumed? How is this done and how are we managing all this information in the digital era? In this section we show the kinds of resources being used for policy work, why it is produced, why it is used and what kinds of resources are the most important.

## Use of grey literature

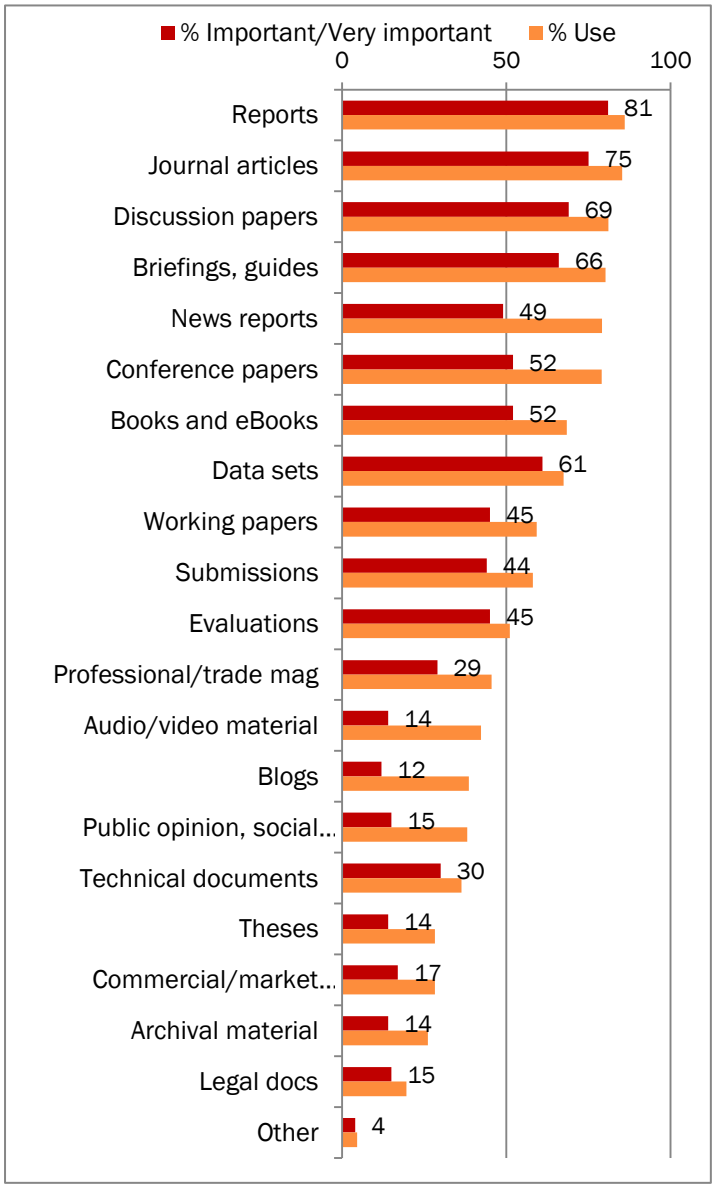
***Public policy work relies on a wide range of resources — some are traditional scholarly publications, but many are 'grey literature'.***

For those working in public policy and practice, the use of research and information is a weekly if not daily activity. As figure 2 shows, the most **common** resources, consulted regularly or occasionally by over 80% of the policy information users we surveyed, are reports (86%), journal articles (85%), discussion papers (81%), and briefings, guides and research reviews (80%). News reports and conference papers are used regularly by 79%, and two-thirds of policy workers use books and data regularly or occasionally. Working papers, submissions and evaluations are used by over half of all policy workers regularly or occasionally.

The most **important** or very important resources used are reports (81%), journal articles (75%), discussion papers (69%), briefings/reviews guides (66%) and data sets (61%) (see figure 2).

When asked to estimate, information users report that grey literature makes up 60% or more of the material they consult for their work. For a quarter, grey literature constitutes more than 80% of their source material.

**Figure 3. Resource types most used and rated important or very important by information users.**



Furthermore, those working in the policy arena estimate that around one-third of their work time each year is spent using grey literature (the equivalent of around 73 work days).

### *Public policy is driven by a complex network of knowledge exchange across and within government, universities, NGOs and business*

When it comes to the most important sources of information for policy workers, our survey results clearly show the interactive network of knowledge exchange that occurs within and between all sectors. Government departments and agencies are the most important sources of information for 94% of policy information users (examples are given in Figure 4). This was followed by university centres or departments, important for 83% of respondents. NGOs are an important source for 79%, and scholarly or commercial publishers for 78% of information users. Think tanks trailed somewhat at around 55%, and commercial research companies and consultants are important for only 31% of surveyed respondents. It is important to recognise that government is not only a consumer of information and research, it is also a major producer in its own right, as are civil society organisations. Complex information exchange networks operate within sectors as well as between them.

**Figure 4. Government departments and agencies are major producers as well as users of policy research and information.**

### *Topic and convenience are key criteria for selecting information and research for policy and practice work*

For the vast majority of surveyed users, topic (98%) and online accessibility (93%) are the most important criteria when selecting resources. This is followed by discoverability by a search engine (80%), and the date of publication (75%, most likely referring to the currency). A trusted source was the fourth most important criterion (66%), followed by relevance for the policy or practice area (64%).

Other criteria that are usually ranked highly in academic surveys came lower down the list, such as authors, citations, publishers or journals, although these were all rated more highly by those in the education sector than those in other sectors.

Peer-reviewed journals are ranked as important or very important by 75% of respondents in the education sector, but are seen as important by around half of the government sector and NGO respondents, bringing down their aggregate importance.

### *Grey literature is a unique source of information that plays specific roles in policy and practice*

As we have seen, public policy work is based on a wide range of resources and sources, including but not limited to academic scholarship and the traditional research outputs of journal articles and books. Our survey results also show that grey literature is regarded as an essential requirement in carrying out policy and practice work.

Eighty percent of respondents reported that not having access to grey literature would have a severe impact on their work. The written comments (176), have been coded and help to provide a picture of why grey literature is considered so important:

Policy and practice work depends on grey literature (36%).

> *Policy development, advisory work and program design within government requires a good grasp of domain expertise and this is greatly helped by grey literature.*
> Information user, government sector

Grey literature provides a broad view of the research environment and perspectives (18%).

> *Grey lit provides another part of the complete information picture and without it I wouldn't want to rely on only peer-reviewed material. Some of the most innovative and thought provoking material is grey lit and important in a changing world.*
> Information user, government sector

Grey literature is a unique source of information on topics, sources and issues not found elsewhere (18%).

> *A lot of women's health policy and preventative health literature is produced by small advocacy organisations and is not indexed routinely in Australian or overseas bibliographic databases.*
> Information user, NGO sector

Grey literature is essential for public policy (14%).

> *Grey literature is particularly important for policy related research because of the need to assess different stakeholder positions; to stay abreast of changes in policy and implementation.*
> Information user, education sector

Academic journals don't cover the same issues (9%).

> *Working in policy related fields and using research that requires application to policy or practice, published material is very limited in its relevance and is written for an academic audience, not a policy audience*
>
> Information user, education sector

For some surveyed users, not being able to access grey literature would not have a big impact (8%). Others would use journal or market research more if they or their organisation could afford it (5%). On a practical level, policy grey literature has the advantage of often being free and available to access online (7%), and a portion of respondents feel that it provides the most up-to-date information (7%), which they value.

### *Economic value of grey literature use*

One element of the Grey Literature Strategies Project has been to develop preliminary quantitative estimates of the value of grey literature, and the cost and scale of grey literature related activities in Australia. In order to do this, we have made estimates of the grey literature population based on occupation figures from the Australian Bureau of Statistics and other data. Based on these figures we are assuming that around one-third of the workforce potentially use grey literature (approximately 3.8 million people).

**The activity-based use value of grey literature is estimated at $33 billion to $43 billion per annum.**

There are various ways to look at **use value** (that is, the value to users) including the time and cost of access and use. To this we can add the amount paid for grey literature. Hence, scaled to the national level, we estimate the use value of grey literature to be **$33 billion to $43 billion per annum**. Production costs are estimated at around $30 billion per annum.

Another method is **contingent valuation,** which explores what users would be willing-to-pay to access grey literature and/or would be willing-to-accept in return for giving up their access. The former is limited by capacity to pay, while the latter is not.

Australian user respondents reported a willingness-to-pay of around $2.4 billion to $7.3 billion per annum nationally. When capacity to pay is limited, willingness-to-accept can be a better indicator of value, and respondents reported a willingness-to-accept of around $16 billion per annum nationally.

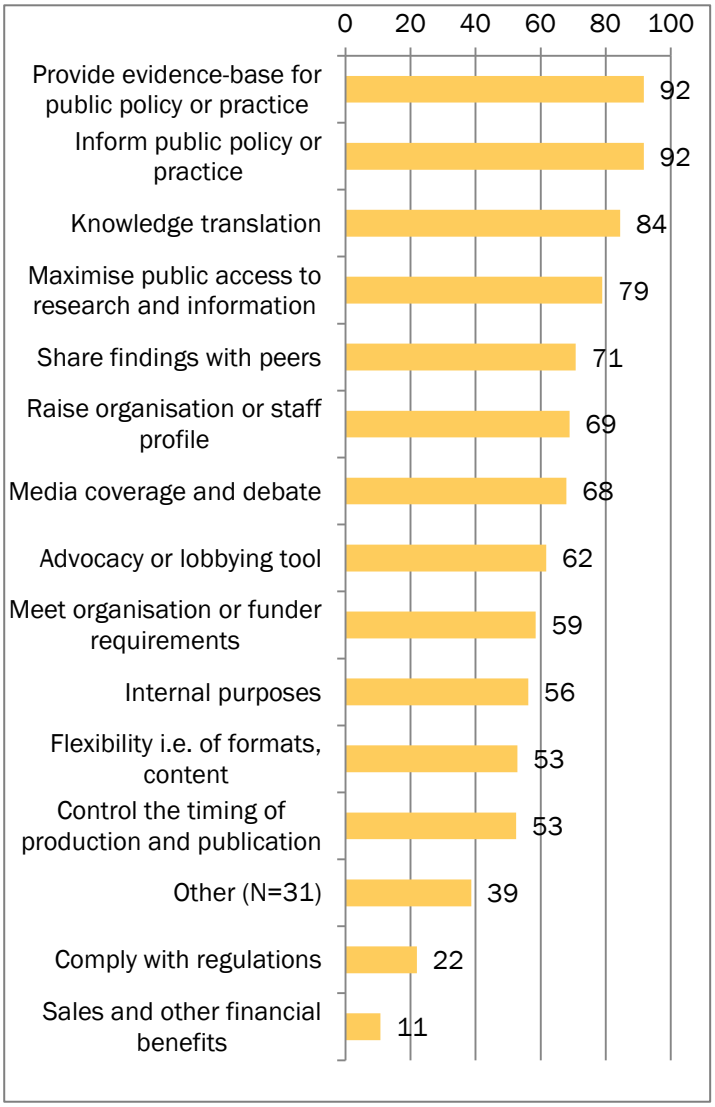
## Production of grey literature

### *Grey literature is produced for policy impact*

So where does all this grey literature come from? Online publication provides infinite flexibility in terms of format, content and style. The products are also cheap and easy to disseminate. As a result, the production of digital grey literature has been growing exponentially since the development of the internet.

Most surveyed producing organisations (84%) produce research and information quarterly or more often, with a third (38%) publishing research and information on a weekly basis or more often. Staff in producing organisations estimate that they spend around a third of their weekly work time creating grey literature each year. This is a considerable investment of time, expertise and resources, especially when there could be 30,000 organisations currently producing grey literature in Australia.

**Figure 5. Reasons organisations produce their own publications - % important or very important**




Grey literature is a key method used by surveyed organisations across all sectors of society to translate and disseminate new research or policy positions. More than 90% of producing organisations report that the most important reasons they produce material are to provide an evidence base and to inform public policy and practice. Other important aims are to translate knowledge for public use (84%), and to maximise public access to research and information (79%).

It follows, therefore, that government is the most important audience for the vast majority of producing organisations (96%). To reinforce this message, politicians are the second most important audience for 80% of organisations. The third key audience group is practitioners (74%), indicating that producing organisations are trying to influence not only policy, but also its implementation.

> *Our production of grey literature is our raison d'etre and our use of this type of material from others is essential. It seems to be the best way to be working to improve policy and services in a timely manner.*
> Producing organisation, NGO sector

### *What gets produced?*

Conference papers are the most common type of document, produced by 82% of organisations, followed by discussion papers (77%), reports (76%), briefings/reviews (67%) and submissions (63%).

This does not directly correlate with importance, as reports (93%), submissions (91%), discussion papers (89%), briefings/reviews (89%) and evaluations (89%) rated as the most important or very important material produced. Conference papers, which are produced the most, are only important for 69% of producers. It seems that conference papers are produced mainly as a requirement of participating in conferences rather than a policy output in their own right. However, conferences are an important dissemination method for 75% of producers.

### *Impact over profit is a key factor for producing organisations*

Financial gain is not an important consideration for most of the producing organisations we surveyed, even for those in the commercial sector. Just 10% of respondents identify income as an important reason for producing grey literature, and more than 70% report that they do not try to sell their content.

If selling content is not a major motivation in the production of grey literature, how is income generated? Funding agreements and contracts are the most important source of income for two-thirds (63%) of organisations, followed by grants, which were important for around a half (52%) of all respondents, but important for three quarters (77%) of those in the education sector. Only 4% report that sales are an important source of income.

While many producing organisations represent business interests, it is probable that most of the material produced by government, NGOs and education is paid for through public funds, and that it is intended to inform or influence policy debate, and is therefore deliberately made available free to access and use online.

### *Economic value of grey literature production*

Australian respondents reported their organizations/departments spends a total of $234 million per annum on projects that result in the production of grey literature, an average of $3.3 million per annum per respondent. On this basis total national grey literature related *project* spending could be around $33 billion per annum. National R&D spending in Australia is $28 billion per annum so this seems plausible.

> National grey literature production costs are estimated to be $30 billion p.a

Based on reported work hours spent creating grey literature, we estimate grey literature production costs at around $30 billion per annum. Scaling reported revenues generated from the sale and distribution of grey literature suggests national revenue of $10 billion. This implies a 32% cost recovery, with much grey literature made freely available.

# 2. Publication and dissemination, discovery and access

***If information produced by organisations is important for public policy work, then discovery and access are key tasks.***

Dissemination, discovery and access have become increasingly complex in the digital environment. While traditional print and library channels continue to provide valuable services, a whole new range of digital curation and information services have emerged, and producing organisations have taken on some of these activities themselves.

Policy information seekers follow many paths as they search for and discover resources. As the number of potential access points and information providers has multiplied and roles and services converge, it has become increasingly difficult to get a clear picture of exactly how policy workers find and access information.

Organisations provide direct website access to their research, send email newsletters, and make direct contact with key individuals. News media, specialist information services and social media alert policy networks and the wider community to notable research publications and policy issues being debated. Subject databases and clearinghouses have grown considerably in number over the last decade, responding to the need to provide more centralised discovery of the many web-based publications being produced. These services curate and provide access to resources, either by linking or uploading full text (so collecting the resource is not a necessary current function of curation services). They also often send email newsletters and provide other alert services.

Many special and government libraries have also taken on more active roles promoting new resources via email and on their websites, but few have digital repositories to store copies, so print remains an important consideration. Google operates as a giant aggregator, providing discovery and access to organisation websites and online collections, without collecting any of it.

In this situation, any account of publication, dissemination, discovery and access will involve overlapping practices and platforms that cannot be readily disambiguated. For example, email newsletters disseminating information about new resources (with links directly to the content wherever it may be) may come from a producing organisation, a third party organisation, a subject database/clearinghouse, or a library. Similarly, Google is a discovery platform in its own right, providing access to resources or information about those resources either directly or via various intermediary services, including media reports, references and citations, and clearinghouses.

We asked information users, producers and collectors to indicate, first, the most important methods they used to find out about new resources (discovery); second, how they accessed resources; and third, which specific services they used. The results should be read within this context of overlapping categories and functions that the internet allows.

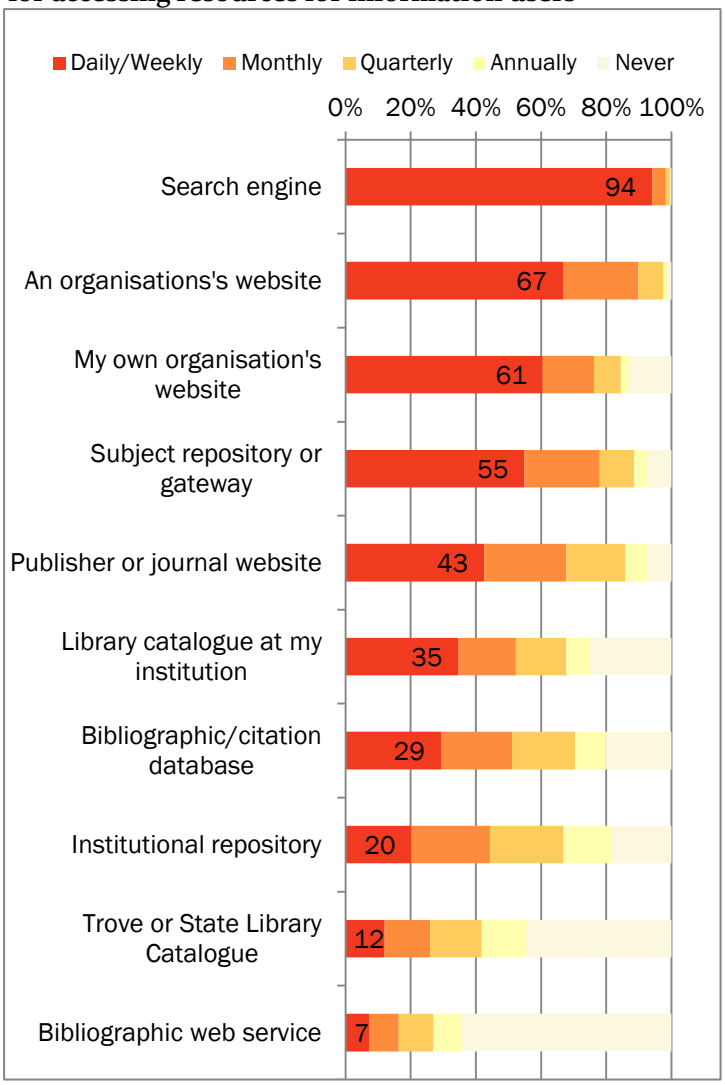
## Information seeking and access

Our results confirm the findings of other researchers, indicating that public policy information users turn first to known or trusted sources — either organisations or people (Innvaer et al. 2002; Nutley, Walter & Davies 2007, pp. 63–65). Websites of key organisations, email newsletters, and colleagues sharing information are the most important means of finding out about new information and research for over 75% of information users. Close behind is asking colleagues — important for 69% of information users. Alerts services and the news media are also an important source of new information (63%), indicating the importance of timeliness in keeping up with policy information. Libraries, publishers, and subject databases or clearinghouses are important as a news source for just over half of policy information users. Perhaps surprisingly, social media is fairly low in importance as a source of new information, with only 22% indicating it is important or very important.

In terms of access, our survey affirmed that search engines are the place 95% of information users turn to on a daily or weekly basis (figure 6). Around two-thirds use their own organisation's website (67%) or that of another organisation (61%) daily or weekly, and just over half (55%) use a subject repository or clearinghouse. These are followed by publishers' websites (43%), and organisation libraries (35%).

We asked for the top three services used to find out about new research and information for policy work. There were 822 written responses, with a huge range of organisations and services mentioned as well as many generic terms, such as government website or clearinghouse. Organisations (38%) and government departments (20%) featured heavily, and together account for over half (58%) of the sources used. Specific organisations mentioned in order of frequency were: the Australian Bureau of Statistics (6% of the total), Australian Housing and Urban Research Institute (AHURI), the Australian Institute of Health and Welfare (AIHW), and the National Centre for Vocational Education Research (NCVER).

**Figure 6. Most frequently used services or entry points for accessing resources for information users**




Subject databases/clearinghouses[1] were also mentioned frequently (45% of responses). The Policy Online service, a subject database, is important for 30% of information users overall, and for 66% of those who use subject databases.[2] Other clearinghouses mentioned include the Australian Institute of Family Studies clearinghouse, Homelessness Clearinghouse and the Closing the Gap clearinghouse. Subscription databases/journals and news media were mentioned by a quarter of information users, with the ABC nominated as a source by 36% of news media users and 9% of information users overall. The internet/Google was listed by 21% of users. Libraries were nominated by 18% of information users, with Trove accounting for 29% of these.

### *Publication and dissemination*

Surveyed producing organisations clearly favour direct online publication of their material on their own website and free to access. Two-thirds of producing organisations made 50–100% of their material available online or in print for free in the last 12 months. The vast majority made at least some of their material open access. Seventy

[1] In some cases there is an overlap between the two, such as the Australian Institute of Family Studies, which is both an organisation that produces grey literature and one that also provides a clearinghouse information service. These have been categorised based on the written response.

[2] All three surveys were promoted via the Policy Online email newsletter and website and therefore these results may reflect a sampling bias.

percent (70%) of producing organisations had something commissioned by a third party in the last 12 months. Half the producing organisations responding had published in a journal, either open access or subscription.

The directness of the publication methods carries through to dissemination and storage. The three most widely used methods of dissemination, rated important or very important by more than 80% of respondents, are posting content to the organisation's website, sharing material directly with contacts, and sending out their own email newsletter.

> *As a peak body, our ability to develop and disseminate grey literature is a key function in representing the interests of our member organisations and the broader sector.*
> Producing organisation, government

Around 75% of surveyed producing organisations regard presenting at conferences or events and sending out email newsletters as important or very important. However, NGOs rate these methods considerably higher than other sectors. Social media and news reports are also used by more than 50% of producing organisations to find an audience for their work. Clearinghouses and repositories are regarded as important for dissemination by around a third of producers, and libraries by only 15%.

### *Storage, collection and access*

In the internet era, publication, dissemination, access, storage and collection/preservation may either be closely related activities, or they may be distinct, outsourced to other service providers, such as publishers, libraries, subscription or open access databases, commercial storage solutions, libraries and archives. One of the distinct aspects of grey literature is that it tends to operate outside other professional publishing and curatorial systems — it is often controlled directly by producers who may or may not have the capacity to adequately manage all of these professional roles and responsibilities to ensure effective and long-term discovery, access and preservation.

In keeping with the direct and open methods of much grey literature publication and dissemination, storage and access is also often managed by organisations themselves. Most surveyed producing organisations (85%) 'often or always' use their organisation website to store and provide access to their content. Less than half (46%) report having repository software to manage these functions.

Just over half of our surveyed producers based in education deposit their material with their institutional repository, suggesting that these systems could be better utilised for grey literature produced by universities' centres and departments. Beyond this there is little take-up of external databases, libraries or other curatorial services. Only 20% comply with their obligation under legal deposit to provide a print copy to the National Library or a state library, and only 12% upload works to a subject database or clearinghouse.

It would appear from these results that producers prefer the ease and immediacy of their websites, rather than other, potentially more stable, options for their content, despite the risks of losing access when content is moved or websites are upgraded or changed.

In this context, the National Library's collections of web content including the selective PANDORA web archive and the Australian Government Web Archive – both of which are full-text searchable and accessible – together with their annual whole Australian web domain harvest play a critical role in ensuring the preservation and long-term access to a substantial amount of the grey literature made available on producers websites.

# 3. Information hide and seek — the challenges of discovery & access, evaluation & collection

***Policy makers and practitioners are struggling to find and access relevant resources. Collecting services are hampered in their ability to help.***

> *Finding the latest and most relevant research to my topic can be time-consuming at best, a nightmare at worst.* — Information user, education sector

The move from scarcity to abundance is in principle a good thing, bringing with it a diversity of voices, a breadth and depth of knowledge and expertise, and instant access to facts and figures, to name just a few of the benefits of the internet. However, the net also brings challenges, particularly for those looking not just for any information, but also for the right information to do their work. It has also created new challenges for those whose task it is to support policy work through effective resource provision and information management.

We now have a needle-in-the-haystack problem, where users have trouble finding relevant content and spend a lot of time sifting, evaluating and managing the material that is found. With so many organisations producing material, evaluating the credibility of their work often requires knowledge of organisations in the field and their role and legitimacy. The task is often made harder because many organisations do not include adequate bibliographic information in their publications, and do not work with collecting services to improve discovery and long-term accessibility.

## Issues for information users finding and accessing policy resources

Of the top three materials rated as the most important for users, a quarter (25%) have trouble finding reports, and 20% listed journal articles, discussion papers and briefings as difficult to find. Data is difficult to find for around one-third, and 43% have difficulty finding evaluations, indicating that these materials in particular need focused attention. The most difficult material to find is archival material, regarded as difficult to find by 57% of respondents.

> *I would use journal articles more often. My workplace has discontinued its library service so finding and accessing journals is now more difficult. I would also be interested in using more conference papers if they were easier to locate.* Information user, government sector

Just under half of surveyed information users (44%) would use some types of resources more often if they were easier to find or access, with the most requested being journal articles (32%), data and statistics (23%), reports (20%), and government material in many forms (14%). Many information users indicated that they can find plenty of resources, too many in fact. The trouble lies in finding relevant, well-produced, timely, high-quality resources.

When we asked what issues information users had accessing information and research, we received 575 written responses and a long list of complaints. Such a high response rate (60% of respondents) to a free-text question indicates strong feelings and a highly engaged group of respondents. Users reported a wide range of issues in accessing the information and research that they need to do their work — an astonishing result given we are living through an age of unprecedented free access to a wealth of information. Responses have been coded into a number of key themes:

Finding relevant resources, including knowing what exists and where to look, and the amount of time required to sift and evaluate are major issues for 45% of information users.

> *With regard to grey literature, it is very hard to know what exists and how to find it. For the most part, reports produced are generally held on individual websites and there is no way to search for particular subjects across separate websites other than search engines like Google but they also pick up a lot of chaff as well making it frustrating. Unless you know it exists it is very hard to find new products.*
> Information user, NGO sector

> *Hit and miss when using Google to find these sorts of materials but I am not familiar with many suitable search mechanisms.*
> Information user, government sector

Accessing resources, particularly the cost of journal articles and market research and problems accessing government content, are problematic for 43% of information users.

> *Issues around subscriptions to peer reviewed academic journals. They are too expensive for NGO's to maintain comprehensive subscriptions, and most researchers I know rely on their personal university enrolments to access them.*
> Information user, NGO sector

The poor production quality and related difficulty evaluating the credibility of material are issues for 14% of users.

> *Accessing older policy literature (understanding policy cycle can be useful context). Having to spend significant time searching and assessing quality. Lack of publication information (e.g. dates, authors) on documents.*
> Information user, NGO sector

> *Multiple subscriptions and memberships are required. Sometimes the information is not peer-reviewed or the extent of scrutiny/peer review is not evident. Conflicts of interest and funding sources are not always evident.*
> Information user, NGO sector

A lucky few (4%) had no issue to report, with many of these enjoying the benefits of being based at a university, with a well-stocked library and access to a wide range of journals.

## Production and reviewing

A quick look through a selection of recent policy publications produced by government, think tanks, academic centres or NGOs will demonstrate a huge range of document types, production standards and content quality. Evaluating grey literature is a big issue for our surveyed information users and collectors, as there is a huge variability in the material produced by organisations. Producers need to be more professional in their production practices.

**Fifty five percent of producing organisations often or always have their material peer reviewed.**

Yet while concerns about the quality of grey literature are often raised, a surprisingly large number of the organisations producing material for public policy indicate that they do either conduct an internal review, use an advisory group, or have their work peer-reviewed or reviewed by an external board prior to publication.

Almost all surveyed producing organisations (90%) undertake basic editing and formatting of their content in-house. Nearly two-thirds (60%) of organisations conduct internal reviews or use an advisory group 'often or always', and 55% 'often or always' have their material peer-reviewed. Forty percent (40%) of producing organisations 'often or always' use professional editing, and 25% use external review boards.

While this is good news, and an indicator of a fairly high level of scrutiny and credibility going into some policy grey literature, the issue remains that even professionally produced and peer-reviewed material may not include all the information required by information users and collectors to evaluate the document they have discovered through search engines, social media or their email inbox.

Just under half of surveyed information users complain about the time it takes to find, sift and evaluate. A further 10% mentioned specific problems of poor production making it difficult to ascertain the credibility of a document, or cite it. Clearly there is considerable scope for producers to improve standards. Simple steps would be to ensure basic bibliographic information is included in all their work, together with a clear statement of any reviewing process.

### *Non-publication*

Some policy research and information is never made public, considerably reducing its potential benefit for other users and producers. The extent of this issue is unknown, but our research enables us to begin to quantify it.

Three-quarters (74%) of surveyed producers did not make public at least some portion of their policy research in the last 12 months. Around half (48%) indicated that this represented 10–20% of their research output, with a further quarter keeping anywhere from 20% to 100% of their research output unavailable for public access.

Privacy issues are the reason for just over half of surveyed producers (57%) not making material public in the last 12 months. Lack of time and resources to publish, and sponsor refusal are the next two most common reasons, given by more than 40% of producers.

> *Project evaluations from agencies running targeted programs — a lot of these are undertaken (by consultants such as myself) but never publicly released and would make a great contribution to knowledge of effective interventions if they were.*
> Information user, commercial sector

Clearly a considerable amount of valuable, publicly funded research material is not being made available, despite commitments from federal and many state governments to open government and open access. Unpublished or hidden content is a particular issue in public policy where resources are scarce, research expensive and information the main currency. Sometimes unnecessary restrictions are placed on commissioned research, especially when these are based on pre-existing contracts. Government departments and agencies should have clear reasons for not making research or reports public, including material commissioned by other organisations. Further consideration could be given to ways in which content could be made public while ensuring privacy.

**Three-quarters (74%) of producers did not make public at least some portion of their policy research in the last 12 months.**

## Deadlinks

***'Reference rot' and deadlinks cause productivity losses through the unnecessary duplication of research and the loss of valuable and irreplaceable resources.***

> *Frustrating when a link doesn't work, if it's something I really want to view I can waste a lot of time looking for it.*
> Information user, NGO sector

> *How long I spend looking for an item with a dead link and whether it is a problem varies with how important I think the material is.*
> Information user, education sector

Studies estimate that the rate of loss of digital content is around 30% within a few years of publication online (Bugeja & Dimitrova 2010). Link rot, or reference rot, involves the loss of access to content previously available online through deadlinks created by the removal or moving of content. One notable example in recent years was the upgrade to the Australian Parliament House website, which saw deadlinks created to all content, including senate reports and parliamentary inquiries, as well as all Parliamentary Library resources.

**Deadlinks are costing Australia up to $5 billion per year.**

Deadlinks are caused by content moving from its original web address — sometimes it is moved to another location online, sometimes it is removed completely from online access. A portion is archived by Pandora or the Internet Archive and therefore available through those specific sites but not via a Google search. As we have seen, most grey literature producers publish, disseminate and store their own materials, and most information users search an engine, so it is essential that these organisations are aware of the need to maintain stable internet addresses.

Link rot is a regular experience for most policy information users, with around half reporting being unable to access an online resource because of a deadlink on a weekly basis or more often. It is also time-consuming, with more than 50% of surveyed workers continuing to search for the item after they came across a deadlink on a weekly basis, and spending an average of around 17 minutes doing so. Calculated at the national level, we estimate that deadlinks are costing Australia $5 billion a year.

### *What are publishers doing to prevent deadlinks?*

Despite posting most of their content on their own website, only 26% of the producing organisations we surveyed have a strategy in place to prevent deadlinks. Of the rest, 42% know they have no strategy in place and a third don't know either way. Unfortunately, these results suggest the problem may get worse before it gets better.

> *Managing our material is an ongoing challenge for our organisation due to lack of technical expertise and time constraints — we would like to give it more priority as effectively disseminating our research findings more widely is important.*
> Producer, education sector

When asked why they don't have a strategy, the most common reason given by around a third of respondents was that they hadn't had the time or resources to deal with it. Another third either hadn't thought about it or didn't consider it important.

When asked how concerned they are about deadlinks, surveyed producers and users had fairly similar views, indicating that producers do take the threat posed by deadlinks seriously despite their lack of action. The loss of

online content is a serious issue for just over a third (37%) of information users and producers. A further 37% were somewhat concerned, while a quarter thought it was not that much of a problem. In comparison, 60% of collecting services think deadlinks are a serious issue.

In fact, 55% of producing organisations responding to our survey agreed with the statement that 'Providing long-term access to our online content is not an issue for my organisation'. So if it is not a priority for over half of all producers, who is going to provide long-term access to policy research? The time seems right for new forms of digital curation to occur, through partnership between policy producers and collecting services.

## Collecting grey literature

When it comes to collecting, grey literature has long been a challenge for libraries and collecting services. Print grey literature often requires special collection teams and collecting policies. Whether print or digital, grey literature is time-consuming to find and catalogue. It isn't distributed through established channels and it doesn't fall into standardised categories of document classification.

> *I appreciate that there is a significant volume of socially valuable research, scholarship, communications and educational practice that relies on so-called grey literature. It is essential that this phenomenon be brought to light and the conditions around securing ongoing access and conserving such resources be publicly addressed, negotiated and supported by appropriate resourcing.*
> Information user, Education sector

Print grey literature is, however, relatively easy to store, requiring little more than some shelves and a computer to catalogue items. The original idea of a 'clearinghouse' was the special collection of print documents curated to serve the interests of an interest group, often associated with specific policy domains. It could be based in an existing library, but was often no more than a room or part of an office building with some space marked out for grey literature, such as pamphlets, reports, working papers and information sheets. Many organisations and libraries still have shelves of valuable print grey literature, with many older items in need of digitisation.

Print grey literature also comes under legal deposit legislation, which requires producers to provide copies of their published material (anything made public) to the National Library and a state library in their jurisdiction. Copyright is also often not a major issue with print copies, as their use and distribution is limited and they are generally not copied by the collecting organisation. However many educational libraries do still have to pay a fee to the Copyright Agency Limited (CAL) if freely available, non-commercial publications are copied by patrons.

The story is somewhat different for digital grey literature. While most people can easily download a report in commons formats such as PDF or Microsoft Word and store it on a hard drive, collecting and providing access to full-text digital content requires specialist software. This is not complex or necessarily expensive (there are open source solutions), but it does require planning, set-up costs, and ongoing maintenance and management.

A further major issue is that Australian copyright legislation unduly limits the collection and preservation of copyrighted material, including orphan works (where the copyright owner is unknown or no longer exists), 'unpublished' material and non-commercial, publicly funded research and information in the public interest. There are many legal obstacles preventing libraries and archives from making available full-text copies of free, non-commercial, open access digital documents for research and public interest purposes.

There are, then, a series of factors that make the collection of digital grey literature difficult, despite the value users place on it: copyright; the lack of digital infrastructure planning and management; the difficulty of discovery and evaluation; and the lack of standards in production and cataloguing.

### *What research and information for policy and practice is collected?*

Our survey asked collecting organisations and services similar questions to information users and producers, in order to compare results across each group.

The most common materials, either print or digital, collected by more than 80% of surveyed services, are journal articles, books, reports and conference papers. These are followed by audiovisual material, discussion papers, professional magazines and essays, which are collected by 70–80% of organisations.

Material collected the least includes social media and blogs (12–15%), commercial research (23%), legal documents (27%), evaluations (30%), information sheets (33%), submissions (40%), and data sets (41%).

The most important or very important materials for collecting services are also journal articles and books (78%), reports (68%), and conference papers (57%). These are followed by archival materials and professional magazines (both 54%), and, policies, standards and regulations (53%).

Only one-third of the surveyed collecting organisations consider briefings, data sets or technical reports important. Submissions are important for 27%, and only 21% consider evaluations important. On the other hand, where these items are collected they are considered very important. There are also clear differences across the sectors, with education institutions prioritising working papers, theses and book chapters, while NGOs value briefings and reviews, submissions and evaluations. This may provide a guide to how a distributed network of collecting could be developed to ensure all valuable materials are collected across a range of services.

A related issue of importance is how easy content is to find and collect, with the degree of difficulty increasing with the time involved, and therefore the cost of collecting. Many resources that are collected by a large number of services and are considered important are not regarded as easy to find. Reports, which are regarded as important by most of the collecting services and information users surveyed, are only regarded as easy to collect by 50% of surveyed collectors. Evaluations are considered the hardest item to find, with only 31% of respondents rating them as easy or very easy to collect.

### *Amount of digital grey literature collected*

In terms of the number of items held, about 20% of responding collecting services have more than 100,000 print items, and around two-thirds have 10,000–100,000 print items.

In comparison, only five (6%) collections hold more than 100,000 digital items, and 18% have from 10,000 to 100,000 digital documents. Put another way, of the organisations surveyed, only a quarter of the collecting services working in the policy and practice area have more than 10,000 digital documents. Around a third (30%) of services have fewer than 1,000 digital documents. A further 28% have up to 10,000. Fifteen percent (15%) have no digital content, and 20% were unable to say how many digital items they held, suggesting a need to review how libraries and collection services audit their holdings. Some comments highlighted the issues for collectors in answering these questions:

> Managing and collecting grey literature more could mean an efficiency dividend of around $17 billion p.a. nationwide.

*Sorry — not able to estimate these costs/amounts — not able to distinguish the 'grey literature' from rest of collection.*
Collector, government sector

Digital infrastructure and collecting practices not designed to store copies of digital content is one reason for the surprisingly slow adoption of digital collecting after 25 years of the internet. However, there is clearly considerable activity in this space, with 27% of collection services reporting that they are developing digital infrastructure at the time of the survey.

In addition to collecting survey data, we have also been conducting a count of databases and clearinghouses in Australia and internationally. We estimate that there are at least 80 subject specialist online databases/clearinghouses operating in Australia now (a full list will be published online in due course). While these may appear to contribute to the collection of digital content, it is difficult to know how much full-text content is held. Given copyright restrictions, all would have some catalogue records that link back to resources located on producing organisation websites. Unfortunately, this leads inevitably to some deadlinks and a skeleton resource.

In summary, digital curation of policy information is inadequate, ad hoc and under-resourced. It requires new infrastructure, agreed standards, legislative reform, and collaboration across collecting and curatorial services. While there are a range of new digital collections forming, not enough are collecting full-text resources, and there is a great deal of duplication with many cataloguing the same reports but few focusing attention on hard-to-find materials, such as evaluations, submissions and local government material.

Most digital databases and clearinghouses operate using web-based metadata schemas such as Dublin core, rather than the library standard for computer cataloguing (MARC). This has meant less sharing of metadata for the new generation of repositories and clearinghouses, as they have not been able to benefit from established metadata sharing systems such as Libraries Australia. There are various one-way metadata aggregation systems, such as Trove and WorldCat, but not yet established systems for the two-way exchange of metadata across collections. Such two-way exchange would reduce the cost of metadata creation for grey literature as records would only need to be created once allowing for more value-added curation services.

Digital publishing is changing the nature of the problem that libraries and collecting services must solve for information users. In a time where many existing services, such as government libraries, are being closed, and new databases and clearinghouses appear and disappear with similarly unstable funding, we must consider how collecting and digital curation services can work together efficiently and cost-effectively to help policy workers find and access the information that they need. The availability of full-text indexed and preserved versions of government online grey literature in the Australian Government Web Archive and other grey literature archived in PANDORA and searchable via Trove, are an important step in this process and need to be made better known to information users.

# 1. Opportunities for change

### *Improve productivity and support evidence-based policy*

> *Grey literature can still be constituted as 'evidence' and help to build the evidence base. Without access to such material, we would be on an ongoing 'loop' of demonstrating the same evidence over and over, without room for innovative practice or new understandings of emerging trends.*
> Information user, government sector

> *The disappearance of reports etc. that form grey literature from online is like an erasure of history. There has to be a mechanism of maintaining continuity of major corporate documents even if they do no longer have status within an organisation. Libraries are important for this but they are becoming reduced in capacity and capability within government agencies.*
> Information user, government sector

Finding and accessing policy information is a time-consuming task made harder by poor production standards and a lack of large-scale collection services able to help find relevant, high-quality resources quickly and efficiently. Information users estimate that on average they could save 16% of their work time if grey literature were more readily accessible. This is equivalent to six hours a week based on an average working week of 35 hours, or 288 hours a year per person — a significant amount of time. When calculated at the national level, the efficiency impact of grey literature being more readily accessible and systematically preserved would be worth around $17 billion per annum nationwide.

A very small fraction of this amount could be spent improving production standards and establishing large-scale digital collection infrastructure and a collaborative cataloguing system.

### *Reform outdated copyright restrictions and allow collecting services to do their job*

There is wide support from information users, producers, and collecting services for the role of collections and the need for changes to the Copyright Act. More than 80% of the information users, producing organisations, and collecting services surveyed support the view that 'Libraries and information services should be able to store copies of print and digital material, including grey literature, for long-term access and use'.

Two-thirds of surveyed collecting services felt strongly that not being able to copy, store or redistribute online information because of copyright law was a problem for their collection. Over 80% of surveyed collection services believe that introducing fair use copyright law is the most important strategy for improving collection and access to grey literature.

With reviews of copyright exceptions and legal deposit currently under way, there is the opportunity to make necessary system-wide changes. Without law reform in this area, the cost of collecting will continue to be a barrier to effective management of policy resources. The costs of production, use and collection will continue to escalate, diverting scarce public and private resources from more productive use.

### *Agree on standards, produce better publications, collaborate and build*

Around 80% or more of surveyed collecting services regarded further strategies as important: standard bibliographic information on publications (85%), agreed metadata standards (82%) and collaborative collecting (80%). Three quarters (75%) of collecting services identified improved software and infrastructure, and sharing metadata as important.

Applying these strategies would create considerable new efficiencies for both information collectors and users. They would also facilitate the development of new specialist services for particular domains, with the potential to add value to larger aggregated services, such as Trove or Google Scholar.

### *Set up a mechanism for collaboration and knowledge sharing*

Australia lacks a body that can advise and liaise on best practice for digital information production, use and collection across government, education, civil society and industry. Internationally there are many organisations engaged with these issues: the Online Computer Library Centre (OCLC), the Coalition for Networked Information, and SPARC in the US; the Joint Information Systems Committee (JISC), SPARK, and in Europe by SURF (Netherlands), and Knowledge Exchange (Denmark). Without any equivalent to these organisations in Australia, it is difficult to engage or cooperate at an international level on these issues.

Such a function could be performed by one or more staff members based within an organisation in any of the key sectors: within a university research centre or library, or association such as the Council of Australian University Librarians; within the Office of the Information Commissioner, the Australian Government Information Management Office or the National Library of Australia; or within a civil society organisation or think tank. The key task would be to facilitate and advise on systems and practices for all sectors.

### *Use technologies and international standards of interoperability*

Investment now in quality metadata and full-text collecting will have long-term benefits, especially in the light of new emerging research techniques. There is the potential to create systems that enhance sifting, evaluating and reusing resources. Collection and information services need to consider what new aggregation or linked systems could be developed using linked data and international standards for interoperability. The time is right to investigate options for interoperable metadata across the whole policy information ecosystem in Australia.

Metadata can be produced in many ways, including author/producer generated, user generated, crowdsourced, harvested, extracted, or mined. It is possible to create resource guides for experts to assist information seekers, and personalisation systems for peers to share their resources and the rating of those resources.

Collecting services need to work with producers and users to collaborate on metadata and aggregation services. Collection and information services need to consider how to work with Google, WorldCat, Wikipedia/DBPedia, Trove, and other major systems.

### *Evaluation and selection can be made easier by improving production standards*

As we have seen, most surveyed producing organisations in the policy space apply some level of editing and desktop publishing to their work, and many also conduct a review process of some kind, including peer review.

This is a solid base on which to build, with producing organisations already investing a considerable amount in the production and dissemination of their work. Many organisations may simply be unaware that certain information is essential for users and collectors to be able to make an assessment of a document. Given this, it would be relatively easy to improve publication standards of grey literature with the development and adoption of clear publishing guides. By including essential bibliographic information — date of publication, authors, producing organisation, a copyright or creative commons statement, page numbers, and a web address — producing organisations could reduce use and collection costs and have a major impact on the accessibility and credibility of their work.

Another opportunity presented by the high level of review applied to policy grey literature is to formalise review procedures into a code or standard that producing organisations can agree to make public. A series of special symbols or terms could be developed for inclusion on grey literature, indicating the level of review that has been applied, and a link to more information on what this means. Such a system of symbols could play a role analogous to that of the kitemarks that designate compliance with safety standards, or the Creative Commons symbols that designate intellectual property controls.

In order to support these opportunities, a series of one-page guides have been developed by the Grey Literature Strategies Project on best practice for digital publications, web publishing, grey literature evaluation, and a proposed Review Code. These are available at apo.org.au/tools

### *Improve impact and value for money in publicly funded research*

Open access policies and practices are important, but on their own they are not sufficient to maximise the benefits from public investment in research and knowledge transfer. Publicly funded research should include provision for the sustainable management of outputs and a collection strategy. Expectations tied to funding create incentives for large-scale change that can be managed flexibly and with discretion at the individual and organisation level.

## 2. Recommendations

Our recommendations for maximising the value of grey literature fall under five headings:

1. Improve production standards and transparency
2. Ensure greater discovery and access
3. Recognise the value of grey literature for scholarly communication
4. Improve collection and curation of policy resources
5. Reform copyright and legal deposit legislation

### 1. Improve production standards and transparency

1.1. Encourage producing organisations to include standard bibliographic details on all online publications.

1.2. Explore the development of standard typologies of quality review processes.

### 2. Ensure greater discovery and access

2.1. Encourage funding and commissioning bodies to consider the removal of default privacy clauses in research contracts.

2.2. Encourage funding and commissioning bodies to enable the use of creative commons licences by default.

2.3. Develop effective training programs for all those engaged in online publishing, on why and how to effectively produce and publish online, including required bibliographic information and the use and application of creative commons licences.

### 3. Recognise the value of grey literature for scholarly communication

3.1. Further encourage the publication of academic research in open access journals or open access digital collections.

3.2. Encourage researchers to make work available in formats and styles applicable to policy and practitioner audiences.

3.3. Integrate grey literature into future assessments of research impact and quality, such as the Excellence in Research Australia program conducted by the Australian Research Council.

## 4. Improve collection and curation of policy resources

4.1. Increase the amount and type of digital and print grey literature catalogued and collected by libraries and information services. Revise collecting policies to include a wider range of digital materials, particularly those that are hard to collect and in demand, such as reports, discussion papers, data, evaluations, and submissions and other resources.

4.2. Increase investment in collection services and infrastructure for digital grey literature. Develop sophisticated discovery tools and interfaces that allow users to interrogate collections more effectively.

4.3. Improve auditing capabilities of collections to provide accurate reporting on materials collected.

4.4. Establish systems for collaborative collection of digital and print grey literature and adopt common standards of metadata based on international best practice. A national digital collection strategy for policy and practice resources could be developed to articulate agreed aims and approaches.

4.5. Develop and adopt common standards of usage metrics and citation systems for repositories and databases, and make these publicly available to assist producers and others to monitor use and impact.

4.6. Work with existing aggregating services such as Trove, WorldCat, Internet Archive and Google/Google Scholar on new initiatives for global collecting.

4.7. Develop sustainability and exit strategies for publicly funded digital collections to ensure provisions are in place to transfer data to another service if necessary.

## 5. Reform copyright and legal deposit legislation to support access to non-commercial public interest information

5.1. Amend Australian copyright legislation in line with the ALRC's recommendations (ALRC 2014), to provide greater flexibility for collecting and information services to use, provide access to and manage for the long term, non-commercial resources for educational or public interest purposes.

5.2. Amend Australian legal deposit legislation for the National Library and state libraries, to enable the collection of digital resources for long-term access and preservation.

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Guides developed by this project including the Tap Dance guide to online publishing, and the Review Code and are available from the Policy Online Tools section <apo.org.au/tools>.

For more information on this project and publications are also available at

Grey Literature Strategies <greylitstrategies.info>

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