OPEN KNOWLEDGE FOR THE SOCIAL SECTOR

Supportive Practices and Technologies for Open Knowledge

The following set of practices can be understood as interlocking and mutually supportive. You may choose to adopt any number of these practices, in any sequence, depending on the level of support both within your organization and your larger network of stakeholders. That said, having a clearly articulated policy for sharing knowledge products can ease the implementation of these practices. Depending on your organization (size, capacity, volume of knowledge products funded/produced), implementing an open knowledge policy at an organization-wide level might be the best way forward. Or a phased approach may be more appropriate in your case, rolling out the initiative program by program. Only you can know what approach is best for your organization. The key thing is to get started!

Open knowledge practices include:

→ Clearly articulating an **open knowledge policy** and procedure for handling and sharing knowledge products funded and/or produced by your organization.

→ Using **open licensing** on all knowledge products and implementing open licensing requirements, or recommendations, for funded knowledge products.

→ Using **open repositories** like IssueLab, to catalogue and better share funded and published works.

→ Using **Digital Object Identifiers (DOIs)** to more effectively track the use and readership of shared knowledge products.

→ Using a **shared descriptive vocabulary, such as schema.org,** on your organization's website to make it easier to discover and index knowledge products.

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Critical Questions for Adopting an Open Knowledge Strategy

1. What motivates your foundation's funding and production of knowledge products?

2. Do your current collection and sharing practices align with that purpose?

3. What role does your foundation see for itself in capturing and sharing the knowledge it funds and produces?

4. Openness is characterized by a default orientation towards sharing (rather than the promotion of select knowledge products). Do your strategic communications efforts run parallel to an open knowledge policy and protocol?

5. What are your biggest concerns and/or fears about the adoption of open knowledge practices at your foundation?

6. What sorts of exceptions to such a policy might you anticipate?

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Recommended Metadata for Knowledge Products

The following is a suggested core set of metadata points for collecting and indexing knowledge products. This core set serves as an excellent starting point for sharing data about knowledge products with external partners and interoperable platforms.

Simply put, metadata is data that describes other data. The goal of metadata is to enable end users to verify that the knowledge product they seek and the knowledge product they've discovered are one in the same. To foster discoverability and usability, every document <u>should</u> have at least the following four core metadata points indexed:

- Title
- Date Published (year, month, day)
- Publishing Organization(s)
- URL of downloadable file or filename if the file is to be shared directly.

The following metadata points round out the descriptive set that <u>could</u> be applied to a knowledge product. If you have any of these details (the more the better!), including them in the metadata for a knowledge product makes discoverability more likely:

- Author(s)
- Funder(s) - of the work itself
- Abstract/Description
- Keywords
- License/Copyright Notice - enables clear understanding of how a work may be re-used
- Language
- Document Type
- Geographic Coverage - location(s) the work focuses on
- Digital Object Identifier (DOI)
- International Standard Book Number (ISBN)

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If you have additional thematic codes applied to your knowledge products consider including them as they can be useful, particularly when helping end users to filter and sort search results. They can also be useful in the development of next generation search and retrieve tools and processes.

Schema.org for Knowledge Products

Improving discoverability

Schema.org is a data vocabulary and microdata format that can improve the discoverability of resources that are shared online. It was created and is maintained by Google, Yahoo!, and Bing.

Essentially, Schema.org let's you turn a web page into a database. All it takes is embedding bits of special HTML code, or microdata, into the HTML that displays your web content. Once augmented with Schema.org, the information available in a web page—information that we humans can understand at a glance—becomes data that a machine can parse. Search engines and other platforms, such as IssueLab, can then use the data to do things like share content more broadly and build better search tools.

Where the knowledge produced by the social sector is concerned, Schema.org's data vocabulary let's you describe everything from the title of a report, to the name of the report's author, to the web address where the report can be downloaded. To illustrate how straightforward using Schema.org can be, let's mark-up our core set of metadata points -- title, date published, publisher(s), and web address of the resource. In this example, we'll use a recent report published by the Foundation Quarterly:

Grey Matter(s): Embracing the Publisher Within

Date Published: 2015-06-30

Publisher(s): The Foundation Review

Download here: http://doi.org/67j

Here's the HTML behind this display, with Schema.org (in red) embedded in the code:

```
<div itemscope itemtype="http://schema.org/CreativeWork">
    <h1 itemprop="name">Grey Matter(s): Embracing the Publisher Within</h1>
    Date published: <span itemprop="datePublished">2015-06-30</span><br />
```

ISSUELAB
a service of Foundation Center

```
    Publisher(s):
    <span itemscope="organization">
      <span itemprop="publisher">
        <span itemprop="name">The Foundation Review</span>
      </span>
    </span><br />
    Download here:
    <a itemprop="URL" href="http://doi.org/67j">http://doi.org/67j</a>
</div>
```

In this code view, we can see that seven Schema.org microdata tags are embedded into our HTML. The microdata let's us describe the type of content being displayed (a "CreativeWork"),
the name of the CreativeWork (itemprop="name"), the date it was published (itemprop="datePublished"), the publisher (itemtype="organization" / itemprop="publisher"), and its web address (itemprop="URL"). So what does this look like to a machine?

Google's Structured Data Testing Tool output shows below*. This is what the machine "sees":

Much more than this can be described with Schema.org, including pretty much every metadata point that can be applied to knowledge products. Have a look at the Schema.org

website to get the full gist of this powerful vocabulary and microdata format: http://www.schema.org.

If you have questions about how to implement Schema.org in your own web pages, we can help! Just get in touch.

* Access Google's Structured Data Testing Tool at https://developers.google.com/structured-data/testing-tool.

The Open Licensing of Knowledge Products
Improving usability

There is a limit to the funds available to even the largest foundations, and so most try to use their resources in a way that will have the greatest impact on the problems they hope to solve. One avenue to greater impact is the use of open licenses by foundations and their grantees, making grant-funded works, and/or works published by foundations themselves, freely available for broad use by others. Open licenses enable you to not only distribute knowledge products for education and research purposes, they enable others to improve and build upon your works to create new works—and new knowledge—in potentially unlimited and unforeseen ways.

There are many benefits to applying open licenses on foundation-funded and foundation-produced resources. Your foundation can increase the impact, reach, and scalability of its grants, creating the conditions for maximum access and re-use of funded materials. Open licenses can also enable novel, innovative, and entrepreneurial uses of grant-funded materials.

Licenses that give people the right to download, print, and distribute an article, or to translate or otherwise adapt an article to local needs, multiply the value of access. Here's an example: foundations often fund research that is relevant to the welfare of the world's poorest people who often live in countries where their own researchers can't afford to subscribe to the journals in which the work is published. Making articles on advances in medicine freely available through the internet can speed the transfer of knowledge, often by years, to places where it is urgently needed.

Increasingly, government agencies and intergovernmental organizations are adopting open policies for copyrightable works and data they create or commission. For example, all grants under the U.S. Department of Labor's Trade Adjustment Assistance Community College and Career Training Program require that copyrightable materials produced through a grant be licensed under a Creative Commons Attribution license (CC-BY). In this

way materials may be freely used by all, eliminating the need for costly duplication of effort as community colleges put together courses to train workers for new jobs.

Creative Commons offers one of the more popular **options for open licensing**. CC licenses are public copyright licenses that grant permission to the public to use the licensed materials, and typically contain a minimal set of conditions, such as requiring that a user provide attribution to an author. CC licenses are built on top of, and encourage respect for, copyright and copyright holders; they are the global standard for sharing open content. With over [880 million CC-licensed works](#) available on the web CC licenses have become ubiquitous, having been adopted globally by foundations, governments, scientific publishers, and cultural heritage institutions such as national museums and libraries.

Many foundations are beginning to make the same requirement for works produced with their grant funds. The William and Flora Hewlett Foundation has recently begun implementing its own open licensing policy and is sharing its "Open Licensing Toolkit for Staff". Any foundation considering a similar move can access this guide at https://drive.google.com/file/d/0BwDMshYbD.

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The Use of Open Repositories

Improving shareability

Open repositories, like IssueLab, allow for free and open access to publications and data—not just by human beings accessing websites but also by machines that can mine and share data between repositories. This interoperability, where one repository can harvest data from another, opens the door to exchanging and sharing knowledge across a distributed system of entry points that we as funders and producers may not even know about.

Sharing knowledge products through an open repository can be done in a variety of ways. If your website currently includes a publications section, consider using an open repository to serve up this content. There are a number of off-the-shelf software packages and cloud-based services, like IssueLab, that can handle this task. Here are a few other ideas for your consideration.

1. Coordinate with IssueLab and use our open access platform to store, collect, and share knowledge products. This can also include a customized feed of titles and other metadata back to your foundation's website, the implementation of a searchable, browseable Knowledge Center on your website, and possible tie-ins with grants management software.

2. Identify additional open repositories where your foundation and grantees can share knowledge products, either by coordinating with repository owners directly, or setting up a data share through IssueLab.

3. Require that organizations you fund to build repositories (or clearinghouses, or "knowledge hubs") use an open access protocol so that the work shared through their websites can be easily harvested and repurposed elsewhere. This can be accomplished by ensuring that, for example, metadata is freely accessible to machines via an Application Programming Interface (API) that supplies data in a popular data format such as XML or JSON. Another approach could be to set up a

data provider service that follows the Open Archives Initiative - Protocol for
Metadata Harvesting (OAI-PMH) protocol (see https://www.openarchives.org/pmh/).

Digital Object Identifiers (DOIs)

Improving trackability

In it's simplest form, a Digital Object Identifier, or DOI, is a unique identifier that can be attached to a digital object (in the case of social sector knowledge products these are often a publication). The DOI provides a permanent record of that object and a permanent link to it. DOIs are maintained by the DOI Foundation and the DOI system has been around since 1998.

There are currently more than 100 million DOIs in existence. In fact, you would be hard-pressed to find an academic or scientific journal article that doesn't have a DOI. DOIs are so ubiquitous in other sectors because they provide enormous value to authors, publishers, and the organizations they work for in tracking interest in and use of their knowledge products. Until now, confidently tracking interest is not something that the social sector has been able to do. Instead we have relied on proxy measures such as counting downloads across websites.

Here are capabilities that DOIs provide your organization:

- **Provide a permanent link to a document**, giving users easy and ongoing access regardless of whether a micro-site is retired, a website is redesigned, or an organization closes its doors.
- **Track "click metrics"** collected by the DOI Foundation and reported as a cumulative measure to the publisher, no matter where on the Internet a user clicks the DOI link.
- **Track citations** by using DOIs to capture how many, and which, articles have cited a work.
- Access **alternative metrics**, or "altmetrics", to better measure and visualize social media, and new media, attention around a digital object.

Until now it hasn't been possible for foundations and nonprofits to request DOIs on individual works. But, as

of 2015, you can request DOIs directly from IssueLab. When you share your work through IssueLab's open repository you can also request that it be given a DOI for free. Visit doi.issuelab.org for complete details.