Licensing Controlled Vocabularies

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Presented by

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About Heather Hedden

- Controlled vocabulary editor at a library database vendor, Gale, a Cengage company, 1996 – 2004, 2014 – present
- Taxonomy consultant
- Author, The Accidental Taxonomist (Information Today, Inc.)
- Instructor, 5-week online course in taxonomy creation
- ISO and NISO index/controlling vocabulary working group member
- North American representative for BARTOC (Basel Register of Thesauri, Ontologies & Classifications)
- SLA Taxonomy Division former chair of Mentoring Committee and Membership Committee.



About Gale, A Cengage Company

- Subscription databases to libraries: GVRL ebooks, In Context, Academic OneFile, Business Collection, Literature Resource Center, etc.
- Web products to the public: Questia, Books & Authors, HighBeam Research, Encyclopedia.com
- Gale Research reference books, directories, and other book imprints (Greenhaven, Thorndike, St. James Press, etc.)
- Primary Source Media digital archives (Artemis)
- Legacy library database vendor companies: Information Access Company, Predicasts



Outline

Licensed Vocabulary Uses
Licensed Vocabulary Issues
Licensed Vocabulary Sources
Licensing Out a Vocabulary
Preliminary Survey Results



Background

Controlled vocabularies include:

- Term lists
- Name authority files
- Hierarchical taxonomies
- Classification schemes
- Terminologies
- Thesauri
- Ontologies

Controlled vocabularies support:

- Consistent tagging or indexing, manual or automated
- Category browsing by users
- Filtering by users
- Search (matching search strings to concepts)
- Discovery (related concept links or contents sharing the same concepts)
- Content management workflow (rights, audience, retention, etc.)



Generally, a custom-created controlled vocabulary/taxonomy is best.

- Customized to the particular set of content
- Customized to the particular set of users

A licensed vocabulary may be considered:

- As a starting point, to be developed and customized further
- For indexing external content in certain subjects
- A term list for a single metadata field or facet (filter) in a faceted taxonomy



As a starting point

When you need a large (perhaps 500+ terms), detailed taxonomy/thesaurus quickly Examples: news topics, health topics, information technology topics Conditions

- A good controlled vocabulary exists
 - in the subject domain
 - of the desired controlled vocabulary type
 - of a sufficient size (e.g. at least 50% of the desired size)
- The license allows unrestricted modification/enhancement
- You have software that manages the controlled vocabulary
- You have skills to update end edit the controlled vocabulary
 Licensing is to save time, not substitute for expertise



For indexing external content

- When content comes from multiple sources, there is no need to customized the controlled vocabulary for a particular content set.
- Practical, if there exists a thesaurus for license in the particular subject domain/discipline (e.g. MeSH for medicine, ERIC for education)
- Such suitable vocabularies exist usually just for academic disciplines
- Suitable for subject-matter-expert users who may already be familiar with the thesaurus.
- Vocabularies may be published by international or nongovernmental organizations, trade or professional organizations
- Would not necessarily require any editing/modification.



For a single metadata field or facet in a faceted taxonomy

When you need a generic controlled vocabulary, part of a larger taxonomy set.

- Could be for one or more of:
 Geographic places, Industry types, Product categories, Genres, etc.
- Controlled vocabularies of other facets can be custom created.
- Modification of licensed vocabulary will still be needed, but usually just of adding or deleting terms
- More often the controlled vocabulary will need editing down



| Туре | Easy to modify | likely to use |
|-------------------------|----------------|--------------------|
| Term lists | yes | yes |
| Name authority files | yes | no |
| Hierarchical taxonomies | depends | yes |
| Classification schemes | cannot | in certain domains |
| Terminologies | yes | in certain domains |
| Thesauri | depends | yes |
| Ontologies | no | in certain domains |



Licensing vocabulary suitability conditions

- Vocabularies for license may not exist for specific subject domains
- Free/open-source nonprofit published vocabularies tend to prohibit commercial reuse or modification
- A vocabulary may be too large or too small

Licensing vocabulary editing issues

 If a controlled vocabulary is not large, it's less effort to create one from scratch than to edit down a licensed vocabulary



Formats for import

"Format" can mean multiple things:

- Different file format extension types; .docx, .xlsx, .txt, .csv, .xml, .html, etc.
- Different format methods for designating data markup tagged (XML or HTML and variations) or columns (CSV, Excel, comma separated in text file)
- Different data modeling types: RDF/SKOS and RDF/OWL (usually in XML)

Consider obtaining two different formats:

- 1. for initial viewing/previewing/evaluating: HTML, Word, Excel, etc.
- 2. for actual importing into your system: CSV, XML, JSON, etc.



Formats for import

Too many options (BARTOC - Basel Register of Thesauri, Ontologies & Classification)

ASCII BS8723-5 CD-ROM ClaML CLIPS CSV DC DjVu DOC DOCX DTD E-Book **EPUB** ESRI Floppy Disc G2KI GeoJSON HTML Isabelle **JSON**

PCC PDF Printed RDF RSS RTF SGML SKOS SPS TAB TIFF TriG TriX Turtle TXT USMARC VDEX

OWL UNIMARC XHTML



Formats for import: selecting

- If using commercial taxonomy/thesaurus/ontology management software, consider the formats accepted for input (options from menu).
- If using proprietary taxonomy/thesaurus/ontology management, check with your system's developers.
 - CSV is simpler and should work. May require administrator access to import.
 - XML will require more work, perhaps scripting for conversion, but can enable additional data models (RDF, SKOS, OWL).

CSV is standard. XML has customized tags, so there are multiple standards.



- Vocabulary publishers
 - WAND www.wandinc.com
- Government agencies
- Associations, nonprofits, nongovernmental organizations
- Indexed content publishers
- Taxonomy software vendors
 - Both open source vocabularies and licensed partner vocabularies



Government agencies with vocabularies available for download include:

- NAL Agricultural Thesaurus <u>agclass.nal.usda.gov/download.shtml</u> (XML, SKOS-XML Word, MARC)
- DTIC (Defense Technical Information Center) Thesaurus <u>discover.dtic.mil/thesaurus/</u>
 (Excel, HTML, TXT, XML, SKOS TTL)
- NASA Thesaurus <u>www.sti.nasa.gov/nasa-thesaurus/</u> (SKOS, OWL, ZThes, CSV/Text)
- USGS Thesaurus <u>www2.usgs.gov/science/about/</u> (RDF-XML, SQLite)
- NLM Medical Subject Headings (MeSH) <u>www.nlm.nih.gov/databases/download/mesh.html</u>
 (XML, ASCII, MARC 21, RDF)
- ERIC Thesaurus (Education Resources Information Center, U.S. Dept. of Education)
 eric.ed.gov/?download (XML)

(Listed at https://www.cendi.gov/projects/proj terminology.html)



Governmental agencies: rights

"As a work of the U.S. Government, the **NAL Agricultural Thesaurus and Glossary** are in the public domain within the United States. Additionally, the U.S. Government waives copyright and related rights in this work worldwide through the CCO 1.0 Universal Public Domain Dedication."

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"The ERIC thesaurus and ERIC database are available for use by the general public." **EMPOWER**™ LEARNING



Government agencies - Library of Congress:

- Library of Congress Subject Headings (LCSH)
 http://id.loc.gov/authorities/subjects.html
- Library of Congress Children's Subject Headings <u>http://id.loc.gov/authorities/childrensSubjects.html</u>
- Library of Congress Genre/Form Terms (LCGFT)
 http://id.loc.gov/authorities/genreForms.html
- Thesaurus for Graphic Materials
 http://id.loc.gov/vocabulary/graphicMaterials.html



Non-profit and non-governmental organizations:

- Getty Vocabularies (Art & Architecture, Geographic Names, Cultural Objects Name Authority, Iconography Authority, Union List of Artist Names www.getty.edu/research/tools/vocabularies (JSON, RDF, N3/Turtle, N-Triples, XML)
- American Economic Association: JEL (Journal of Economic Literature) Classification system <u>www.aeaweb.org/econlit/jelCodes.php</u> (XML)
- ACM Computing Classification <u>www.acm.org/publications/class-2012</u> (SKOS XML, Word, HTML)
- Unified Astronomy Thesaurus, American Astronomical Society <u>astrothesaurus.org</u> (CSV, JSON, RDF)
- UNESCO Thesaurus <u>vocabularies.unesco.org</u> (RDF, SKOS-LX RDF, TTL)
- World Bank Thesaurus vocabulary.worldbank.org/thesaurus.html (TTL, RDF/XML, TriG)



Indexed content publishers:

- Gale <u>www.gale.com/license/partners/taxonomies-and-vocabularies</u> (CSV, Excel)
- Associated Press <u>developer.ap.org/ap-metadata-services</u> (RDF/XML, RDF/TTL, HTML)
- PLOS github.com/PLOS/plos-thesaurus (XML, Excel)



Directories and repositories of controlled vocabularies

Comprehensive:

- Taxonomy Warehouse <u>www.taxonomywarehouse.com</u>
- TaxoBank www.taxobank.org
- BARTOC (Basel Register of Thesauri, Ontologies & Classification) <u>bartoc.org</u>
- Research Vocabularies Australia https://vocabs.ands.org.au
- Open Metadata Registry http://metadataregistry.org/vocabulary/list.html

Domain-specific (examples):

- NCBO BioPortal biomedical ontologies <u>bioportal.bioontology.org/ontologies</u>
- Open Biological and Biomedical Ontology (OBO) Foundry www.obofoundry.org
- VEST Directory of AIMS (Agricultural Information Management Standards) portal of the FAO aims.fao.org/vest-registry/vocabularies
- Heritage Data (UK cultural heritage) <u>www.heritagedata.org/blog/vocabularies-provided/</u>

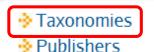
Blog post: "Directories and Databases of Published Controlled Vocabularies"
accidental-taxonomist.blogspot.com/2016/09/directories-and-databases-of-published.html GALE
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21



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Everything You Need to Know About Taxonomy in One Place

This free online information resource is **all about taxonomy**: Content and links to everything you need to know about taxonomy in one convenient website. Explore our subject-oriented directory of taxonomies and their publishers; peruse blogs and events about taxonomies; discover taxonomy books and standards; research taxonomy software products; and connect with experts and consulting services.





Featured Events



Taxonomy Boot Camp London 2018 will be held October 16-17. Attendees will explore and debate the growing use of taxonomies to drive data, content, information processes and more. Participants of all

Featured Blog

SynapticaCentral provides a well balanced round up of news and views on all aspects of taxonomy, information management, and the organization of digital knowledge. A must read blog on the web at: http://www.synapticacentral.com.

Featured Book

Synaptica. <a>Synaptica. <a>Software







Taxonomies Publishers

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E F G H I J K L M N O P Q R S T U

ACM Computing Classification System (Taxonomies)

The 2012 ACM Computing Classification System has been developed as a poly-hierarchical ontology that can be utilized in semantic web applications. It replaces the traditional 1998 version of the ACM C...

Aerial Photography Glossary (Taxonomies)

Aerial Photography is a multi-discipline profession that requires knowledge of not only photography but also aircraft, flying, navigation, and so on. This glossary is presented to give the viewer a gr...

Aerospace & High Technology Thesaurus (Taxonomies)

The Aerospace & High Technology Research Database (now known as the Advanced Technologies Database with Aerospace) covers such topics as aeronautics, astronautics, and space sciences, as well as techn...

African Studies Thesaurus (Taxonomies)

The African Studies Thesaurus is a structured list of English terms covering the broad field of African studies, with an emphasis on the social sciences and humanities. It contains 12824 terms (5417 d...

AGIFT (Taxonomies)

<u>Agricultural Communications Documentation Center Thesaurus</u> (Taxonomies)

The ACDC Thesaurus is used to index and retrieve documents in the Agricultural Communications Documentation Center (ACDC) literature collection and information service. The collection deals with commu...

Synaptica. < **Taxonomy Software**





TaxoBank Access, deposit, save, share, and discuss taxonomy resources

Navigation

View Terminologies

- Create content
- Recent content

User menu

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To make available a space for sharing controlled vocabularies and discussions about their use Search Search

Welcome to the TaxoBank Terminology Registry

The TaxoBank contains information about controlled vocabularies of all types and complexities. We invite you to both browse and contribute. Enjoy term lists for special purpose use, get ideas for building your own vocabulary, perhaps find one that can give you a quicker start.

The information collected about each vocabulary follows a study (TRSS) conducted by JISC, the Joint Information Systems Committee of the Higher and Further Education Funding Councils. All of the recommended fields included in the study's final report are included; some of those the study identified as *Optional* are not. See more about the Terminology Registry Scoping Study (TRSS) at their site. In addition, input from other information experts was elicited in planning the site.

Contact us through the *Contact* page, with suggestions, corrections, vocabulary descriptions, event news, or to discuss displaying your vocabulary on this site (particularly important if it was created on a college server and faces

Vocabulary spotlight

Check out this
vocabulary: Antarctic
Thesaurus

Check out this

Thesaurus

vocabulary: Antarctic

Vocabulary spotlight

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Search Search

List of Vocabularies

| Post date | Title |
|------------|---|
| Wed, 2009- | A Lexicon of Learning |
| Mon, 2013- | Aboriginal Affairs and Northern Development Subject |
| Fri, 2013- | ACDC Thesaurus |
| Tue, 2009- | ACM Computing Classification System |
| Thu, 2009- | Affineur's Concept Map |
| Mon, 2009- | African Studies Thesaurus |
| Wed, 2009- | AGIS Network taxonomy |
| Mon, 2012- | Agriforest Ontology |
| Thu, 2009- | AGROVOC Thesaurus |
| Mon, 2013- | AGU Index Terms |
| | 1 2 3 4 5 6 7 8 9 next > last » |



ILC Title Finder KOS Registries Download

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DDC

<Any>

EuroVoc

Language

<Any>

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Currently indexed vocabularies 2,960 Currently indexed registries 89

Content by discipline

| Social sciences | 1, 028 |
|---|-----------|
| General works, Computer science and Information | 594 |
| Technology | 483 |
| History and Geography | 471 |
| Pure Science | 413 |
| Arts and Recreation | 306 |
| Language | 143 |

Attendee Poll

Would you more likely:

- Pay a premium to license a controlled vocabulary, to have no restrictions on modification, reuse, creation of derivative works, external/public publishing, etc.
- Pay less to license a controlled vocabulary, but have restrictions on use and modification
- Only license a controlled vocabulary if it is free, but be prohibited from commercial use and modification
- Don't know or none of the above, because there are no plans to license a controlled vocabulary



Licensing Out a Vocabulary

Considerations

- License type
- Price, if not free, and price modeling
- Updates to clients, if not to be modified
- Formats to be available
- Marketing (in addition to vocabulary directories) and partnering

Guidelines for vocabulary reuse:

 Discussed within "Issues in Vocabulary Management, Technical Report (TR-06-2017) published by the National Information Standards Organization (NISO) https://www.niso.org/publications/tr-06-2017-issues-vocabulary-management



"Taxonomy Licensing Interest Survey"

- Survey to gauge interest in licensing taxonomies and other controlled vocabularies
- Survey URL: https://www.surveymonkey.com/r/DWQW5TY
- Still open
- Opened at Taxonomy Boot Camp, November 5, 2018
- Will stay open through SLA, June 18, 2019



Questions

- 1. Would you consider licensing controlled vocabularies/taxonomies/thesauri?
- 2. If no, why not?
- 3. What is the status of considering taxonomies for license?
- 4. What are your concerns about taxonomy for license?
- 5. What type of controlled vocabulary are you most interested in licensing?
- 6. What subject area(s) of a controlled vocabulary might you be interested in licensing?
- 7. What purpose(s) would a licensed vocabulary for you serve?
- 8. If you were to license a vocabulary, what size would you be interested in?
- 9. What is your industry?
- 10. In what format(s) would you most likely want to license a controlled vocabulary?



Preliminary results (survey is still open)

1. Would you consider licensing controlled vocabularies/taxonomies/thesauri?

| • | Yes or maybe. (Skip to question #3) | 74.14% | 43 |
|---|-------------------------------------|--------|----|
| • | No. | 25.86% | 15 |

2. If no, why not?

| Custom-created taxonomies would best serve my purposes. | | 57.14% | 12 |
|--|-----------|--------|----|
| Licensed taxonomies that are modifiable and permit commercial reuse are too expensive. | | 14.29% | 3 |
| Suitable free taxonomies are not worth the trouble to find, implement, etc. | | 4.76% | 1 |
| ▼ We are all set with our taxonomies and have no additional needs. | | 4.76% | 1 |
| ▼ Other (please specify) | Responses | 19.05% | 4 |
| | | | |



Preliminary results

3. What is the status of considering taxonomies for license?

| ▼ I/we have not yet looked for taxonomy to license. | 41.07% | 23 |
|---|--------|----|
| ▼ I/we have looked, but have not successfully found something suitable. | 21.43% | 12 |
| ▼ I/we have identified possible taxonomies for license, but have not done it yet. | 17.86% | 10 |
| ▼ I/we have licensed a taxonomy already. | 19.64% | 11 |
| TOTAL | | 56 |





Preliminary results

4. What are your concerns about taxonomy for license?

| ii vviiat a | , , , , | | | <u></u> | , | | | |
|--|---------------------|----------------------|----------------------|--------------|--------------|--------------|---------|---------|
| • | 1 * | 2 | 3 • | 4 ▼ | 5 🔻 | 6 | TOTAL ▼ | SCORE ▼ |
| ▼ Difficulty finding or lack of a suitable taxonomy | 56.25% 27 | 12.50% 6 | 4.17% 2 | 10.42% 5 | 8.33% 4 | 8.33% 4 | 48 | 4.73 |
| Difficulty integrating into an existing taxonomy or taxonomy set | 15.22% 7 | 23.91% 11 | 23.91% 11 | 21.74% 10 | 10.87% 5 | 4.35% 2 | 46 | 3.98 |
| Effort to modify, adapt, and/or expand | 8 . 51% 4 | 21.28% 10 | 23.40% 11 | 25.53% 12 | 17.02% 8 | 4.26% 2 | 47 | 3.66 |
| Features of taxonomy lacking | 6.67% 3 | 8.89% 4 | 20 . 00% 9 | 22.22% 10 | 17.78% 8 | 24.44% 11 | 45 | 2.91 |
| ▼ File format and system implementation issues | 6.67% 3 | 15 . 56% 7 | 8.89% 4 | 6.67% 3 | 28.89% 13 | 33.33% 15 | 45 | 2.64 |
| Licensing fee cost | 17.02% 8 | 21.28% 10 | 19.15% 9 | 8.51% 4 | 12.77% 6 | 21.28% 10 | 47 | 3.57 |

Preliminary results

5. What type of controlled vocabulary are you most interested in licensing?

| ▼ Hierarchical taxonomy | 60.38% | 32 |
|--|--------|----|
| ▼ Controlled vocabulary for part of a faceted taxonomy | 50.94% | 27 |
| ▼ Thesaurus | 37.74% | 20 |
| ▼ Ontology | 39.62% | 21 |
| ▼ Classification scheme (such as with alpha-numeric codes) | 15.09% | 8 |
| ▼ Name authority file (companies, places, organizations, person names, etc.) | 26.42% | 14 |
| Total Respondents: 53 | | |





Preliminary results

6. What subject area(s) of a controlled vocabulary might you be interested in licensing?

| ▼ Humanities & social sciences | | 15.09% | 8 |
|--|-----------|--------|----|
| Occupations or job titles | | 15.09% | 8 |
| ▼ Engineering & design | | 18.87% | 10 |
| ▼ Law and policy | | 18.87% | 10 |
| ▼ Science & math | | 18.87% | 10 |
| ▼ Health/medicine | | 20.75% | 11 |
| ▼ Geographic places | | 22.64% | 12 |
| ▼ Products/services | | 24.53% | 13 |
| Company or organization names | | 26.42% | 14 |
| Information technology/computing | | 28.30% | 15 |
| ▼ Other (please specify) | Responses | 28.30% | 15 |
| ▼ Industries | | 30.19% | 16 |
| ▼ Business/management/enterprise functions | | 37.74% | 20 |
| | | | |

Preliminary results

7. What purpose(s) would a licensed vocabulary for you serve?

| ▼ Internal content management and search & retrieval | | 81.48% | 44 |
|--|-----------|--------|----|
| ▼ Business intelligence/market research/competitive intelligence/data analysis | | 27.78% | 15 |
| ▼ Expertise identification | | 25.93% | 14 |
| ▼ Education/research | | 20.37% | 11 |
| ▼ Ecommerce or B2B | | 16.67% | 9 |
| ▼ Public/website content findability - commercial | | 20.37% | 11 |
| ▼ Public/website content findability - government | | 9.26% | 5 |
| ▼ Public/website content findability - nonprofit | | 14.81% | 8 |
| ▼ Other (please specify) | Responses | 7.41% | 4 |
| Total Respondents: 54 | | | |





Preliminary results

8. If you were to license a vocabulary, what size would you be interested in?

| ▼ Less than 100 concepts | 20.59% | 7 |
|-----------------------------|--------|----|
| ▼ 100 - 500 concepts | 11.76% | 4 |
| ▼ 500 - 1,000 concepts | 17.65% | 6 |
| ▼ 1,000 - 5,000 concepts | 32.35% | 11 |
| ▼ 5,000 - 10,000 concepts | 23.53% | 8 |
| ▼ More than 10,000 concepts | 23.53% | 8 |
| Total Respondents: 34 | | |



Preliminary results

9. What is your industry?

| ▼ Consulting/professional services | | 19.35% | 6 |
|--|-----------|--------|---|
| Manufacturing/Construction/Engineering | | 12.90% | 4 |
| ▼ Nongovernmental Nonprofit | | 12.90% | 4 |
| Marketing/Advertising | | 9.68% | 3 |
| ▼ Retail/Wholesale/Ecommerce | | 9.68% | 3 |
| ▼ Software/Hardware/IT | | 9.68% | 3 |
| ▼ Publishing | | 6.45% | 2 |
| ▼ Education/Libraries | | 6.45% | 2 |
| ▼ Finance/Insurance/Real estate | | 6.45% | 2 |
| ▼ Biomedical/Science R&D | | 6.45% | 2 |
| ▼ Government/International agency | | 6.45% | 2 |
| ▼ Other (please specify) | Responses | 6.45% | 2 |
| ▼ Media/Broadcasting/Entertainment | | 3.23% | 1 |
| ▼ Healthcare | | 3.23% | 1 |
| ▼ Energy/Utilities/Transportation | | 3.23% | 1 |



Preliminary results

10. In what format(s) would you most likely want to license a controlled vocabulary?

| ▼ XML | | 43.33% | 13 |
|--------------------------|-----------|--------|----|
| ▼ Excel (XLS or XLSX) | | 36.67% | 11 |
| ▼ Unsure | | 36.67% | 11 |
| ▼ CSV | | 33.33% | 10 |
| ▼ SKOS | | 30.00% | 9 |
| ▼ JSON | | 23.33% | 7 |
| ▼ RDF | | 20.00% | 6 |
| ▼ OWL | | 13.33% | 4 |
| ▼ Turtle | | 10.00% | 3 |
| ▼ Other (please specify) | Responses | 10.00% | 3 |
| ▼ ZThes | | 6.67% | 2 |
| Total Respondents: 30 | | | |

Preliminary conclusions

- Concerns around licensing are shared, and there is no dominant single concern.
- Hierarchical taxonomies and vocabularies for facets of faceted taxonomies are the types most of interest.
- The subject area of greatest interest is business/management/enterprise functions
- Internal content is the leading purpose for controlled licensing
- Size of vocabularies of interest includes all but the mid-rage dominates
- Industries interested in vocabulary licensing vary; none dominates
- XML and CSV/Excel or the formats of greatest interest, but a significant number are unsure of format desired.



Conclusions

It's not a simply build vs. buy question

You may build some of your vocabularies and buy/license others

- For different facets, metadata properties
- Internal vs. external use
- You may license vocabularies and then modify them
- You may license for a temporary period, while you build your own (if license precludes modification)



Questions/Contact

Heather Hedden

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