LIBRIS - Linked Open Library Data

Anders Söderbäck National Library of Sweden







What is LIBRIS?

- Swedish union catalog
- Library directory
- Library infrastructure
- Search interface / OPAC

What is LIBRIS?

- Existance since 1970
- Online public access (for humans) since 1997
- Open (or semi-open...) bibliographic records since 1997
- Marc21 since 2001
- Linked Open Data since 2008

LIBRIS Union Catalogue

- 175 libraries
- 6 million bib records
- 20 million holdings
- 250k authority records
- National bibliography

LIBRIS Library Directory

- Roughly 2000 libraries
- ILL information
- Administrative information
- Technical information
- Geographic locations

LIBRIS as Infrastructure



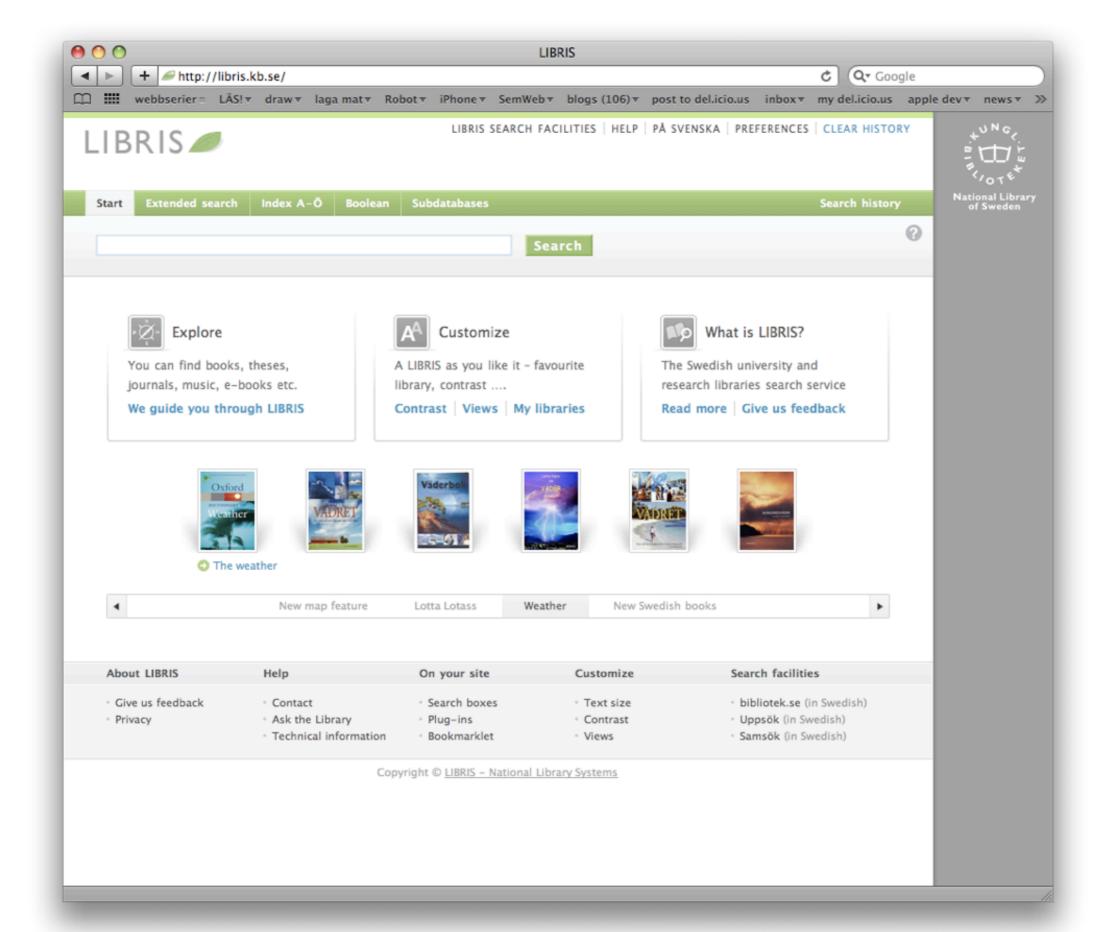
LIBRIS as Infrastructure

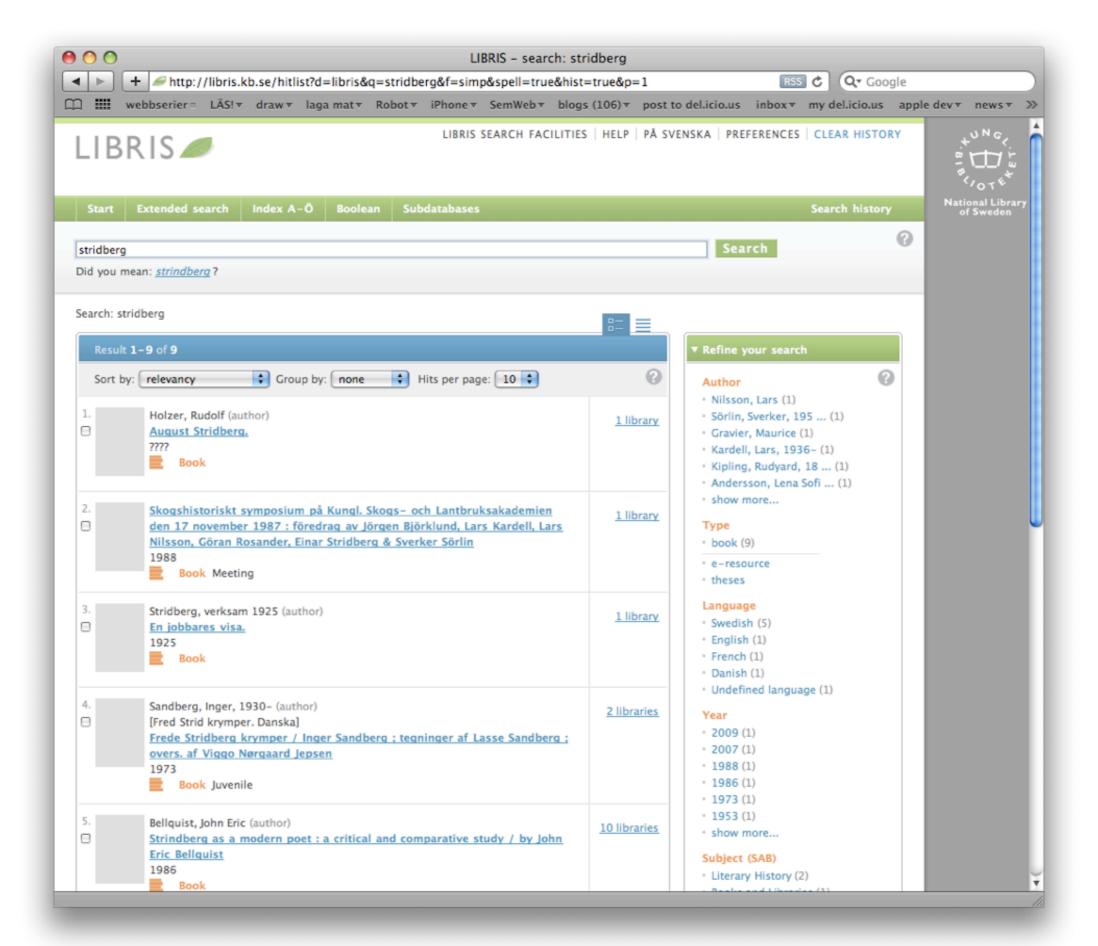
- Human Cataloging
- Automated imports of data
- Automated exports of data
- Open APIs
- LIBRIS-ID master identifier for bibliographic data in Sweden

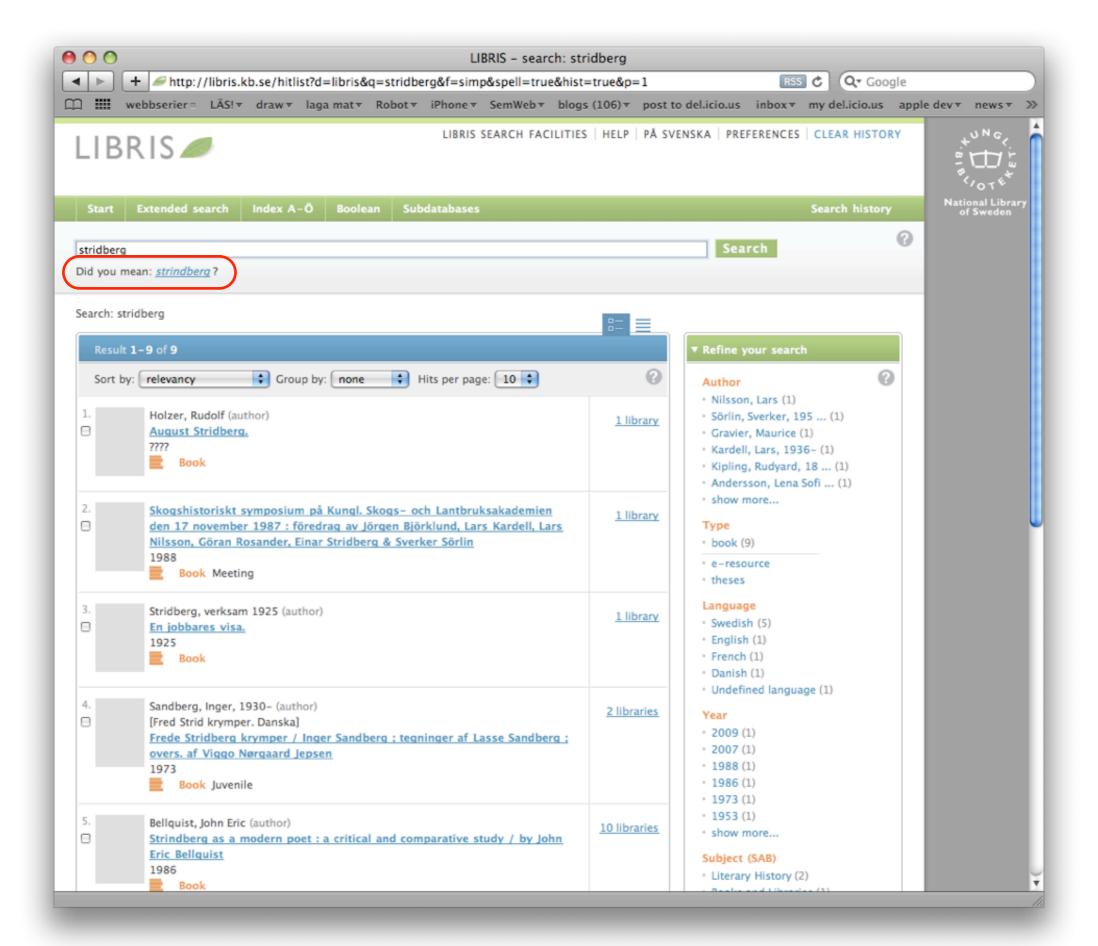
Why Linked Data?

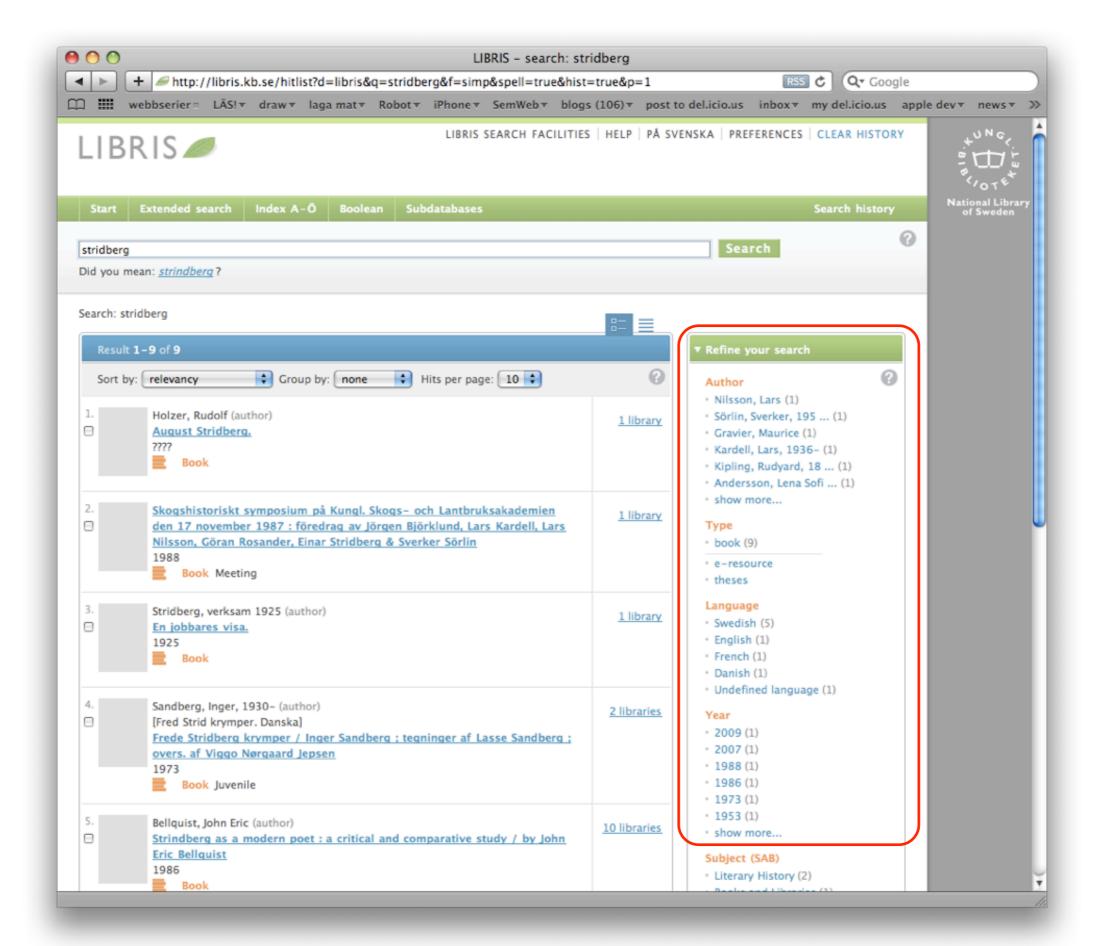
New LIBRIS web interface

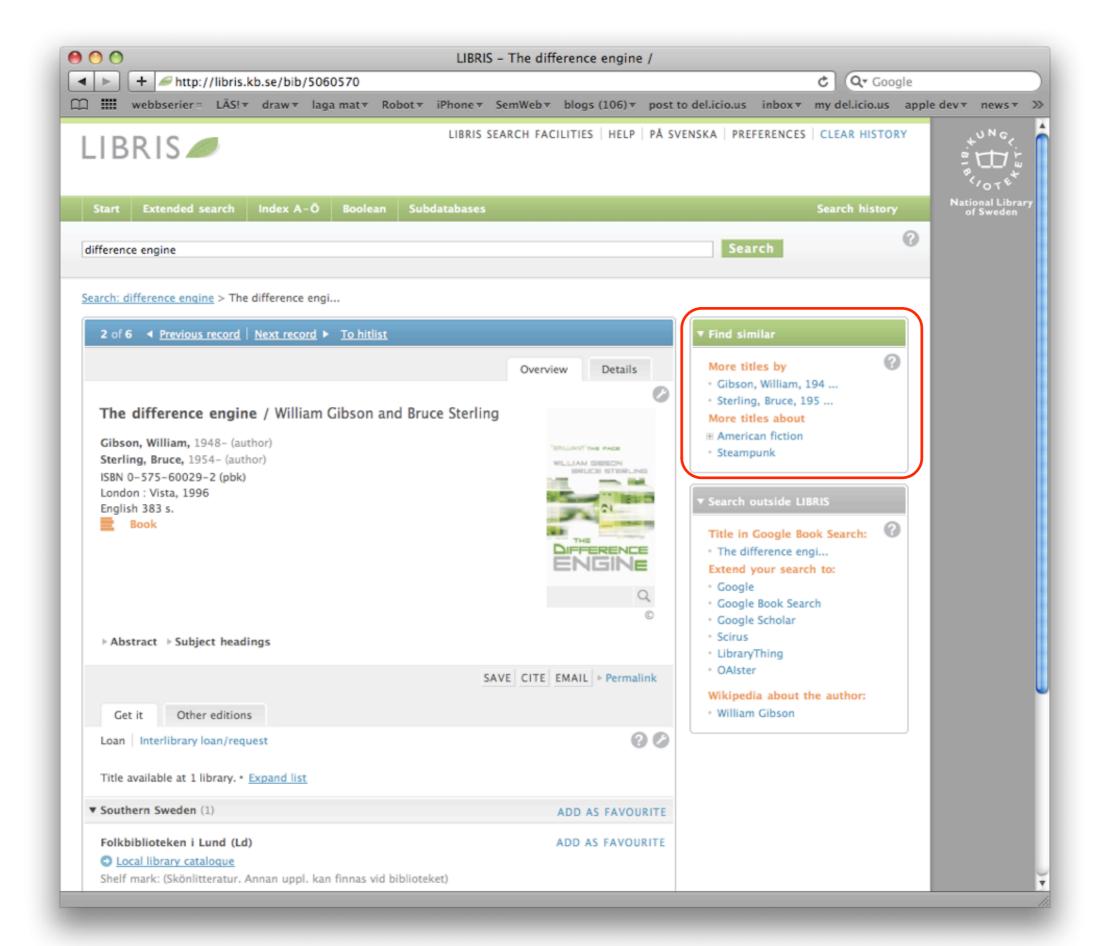
- Project 2006-2007
- Launch dec 2007
- "Next-Gen OPAC"

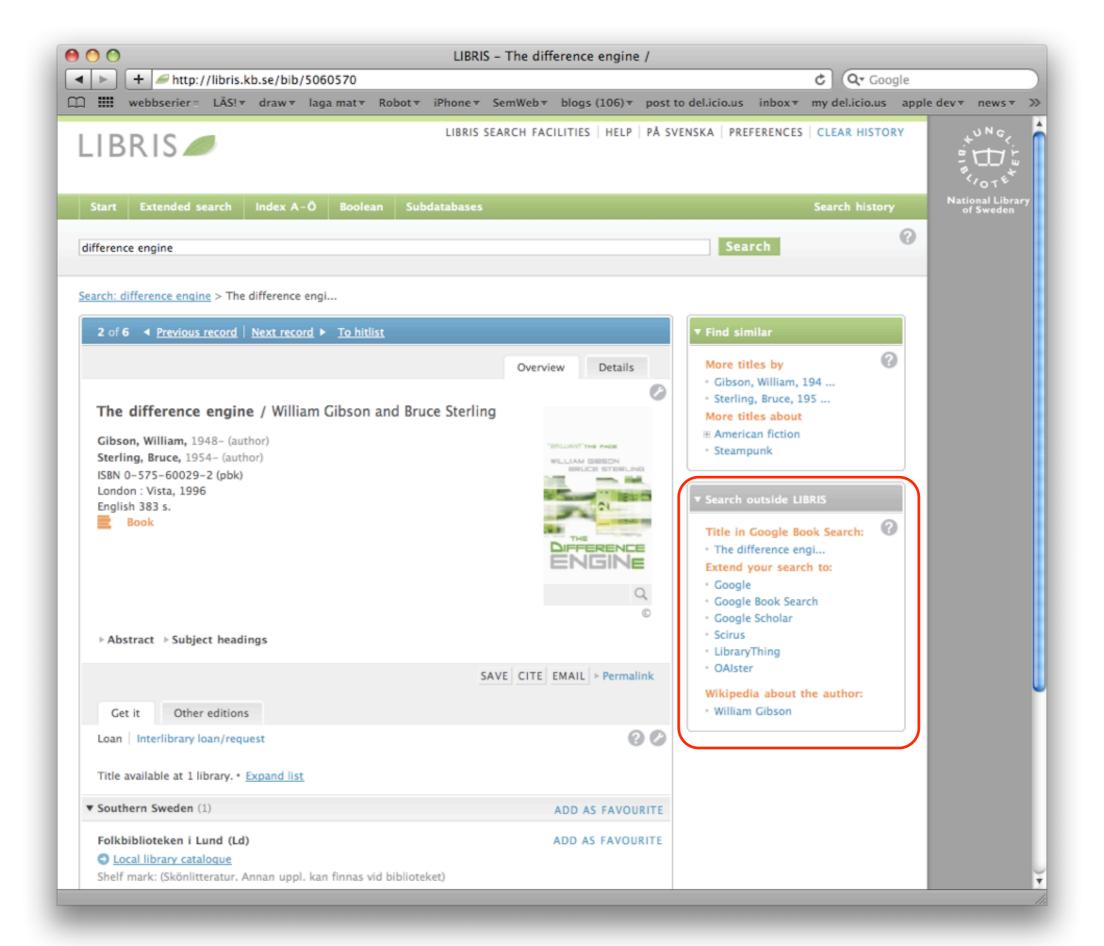


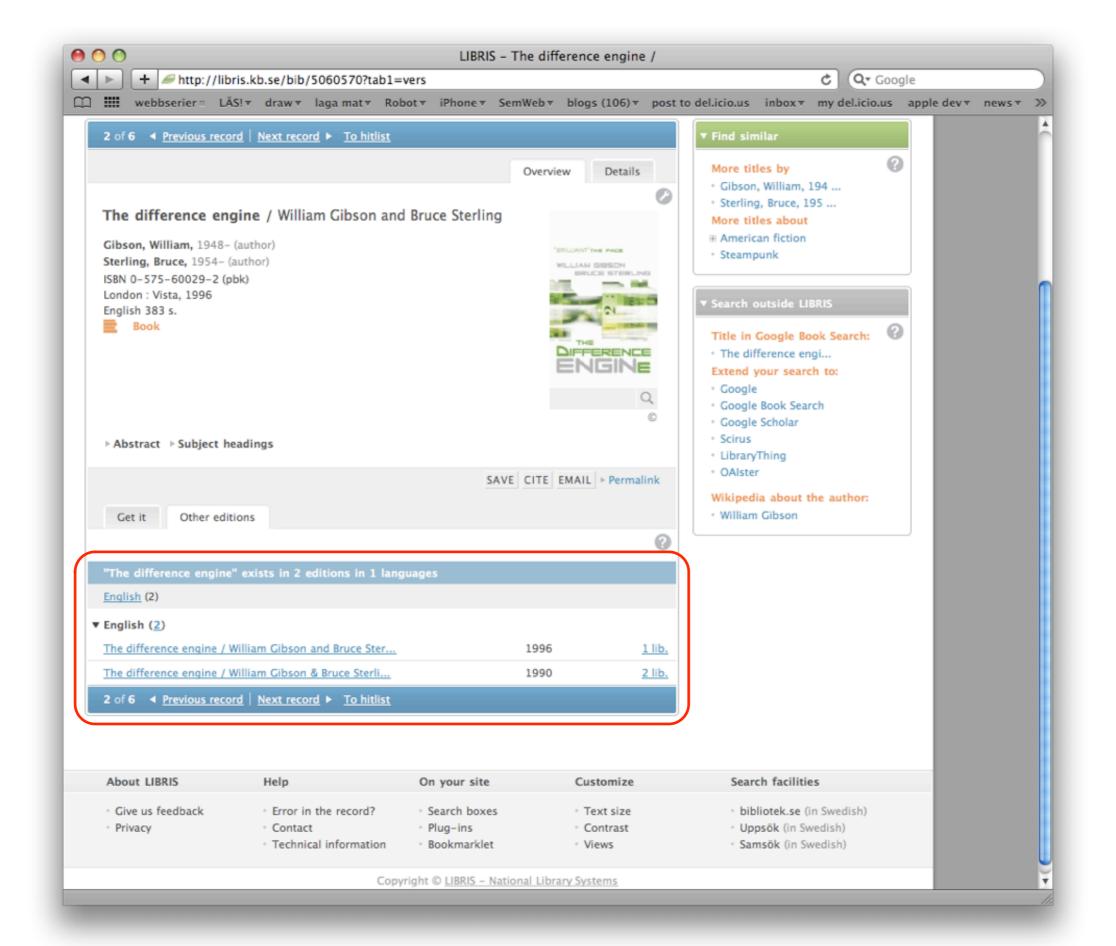












New LIBRIS web interface

- Lots of effort in design
- Lots of user testing, interviews, user centered design...
- Lots of input from mixed reference group

What does the world want from us?

- Good, usable interface
- Data
- APIs...

What doesn't the world want from us?

- Library specific protocols
- Neither z39.50 nor ISO2709

Design a thing by considering it in its next largest context - a chair in at room, a room in a house, a house in an environment, environment in a city plan.

- Eliel Saarinen

A library catalog must be designed by considering its context of the Web.

The trouble with APIs...

- We have made quite a few of them...
- Bigger demand for APIs than we could meet.
- APIs tend to limit use to what was intended by the creator of the API
- Context specific
- "What if there was a good way to provide all the data..? And all the relations..?"

What is the Web?

- An infrastructure
- An environment
- The Web is social
- The Web is made of links
- The Web is a network
- The Web is an open system

Catalogs in Web context

- Need to be open
- Need to be linkable
- Need to provide links
- Need to be part of the network
- Can not be an end in itself
- Must allow for hackability

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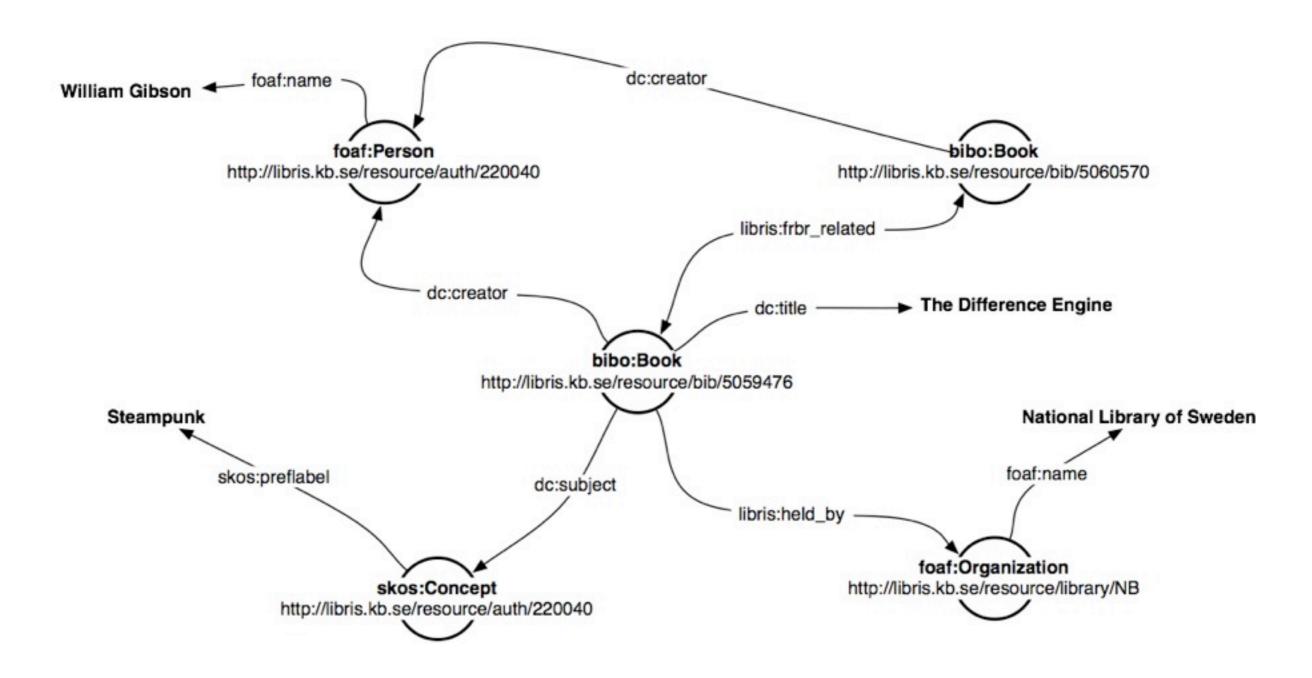
What infrastructure can support this?

Linked Open Data

Linked Open Data turns the Web into an API.

- Corey A. Harper, at code4lib preconf 2009

- Exposes name and subject authorities as foaf:Person, skos:Concept
- Bibliographic records as bibo:Book, bibo:Article, etc.
- dc:creator, dc:subjects, etc.



HTTP URI for every resource, e.g. http://libris.kb.se/resource/bib/5059476 http://libris.kb.se/resource/library/S

```
000
                                             Terminal — bash — 110 \times 31
Last login: Tue Feb 24 02:37:56 on ttys000
Anders:~ bcd$ curl -L -H accept:text/rdf+n3 http://libris.kb.se/resource/bib/5059476
@prefix dc: <a href="http://purl.org/dc/elements/1.1/">http://purl.org/dc/elements/1.1/> .
@prefix owl: <http://www.w3.org/2002/07/owl#> .
@prefix rdf: <a href="http://www.w3.org/1999/02/22-rdf-syntax-ns#">http://www.w3.org/1999/02/22-rdf-syntax-ns#</a>.
@prefix rdfs: <a href="http://www.w3.org/2000/01/rdf-schema"> .
@prefix libris: <a href="http://libris.kb.se/vocabulary/experimental#">http://libris.kb.se/vocabulary/experimental#</a>.
@prefix bibo: <a href="http://purl.org/ontology/bibo/"> .
<http://libris.kb.se/resource/bib/5059476>
                                                  rdfs:isDefinedBy
                                                                         ♦http://libris.kb.se/data/bib/5059476> .
<http://libris.kb.se/resource/bib/5059476>
                                                  rdf:type
                                                                bibo:Book .
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                                                  dc:title
                                                                "The difference engine"@en .
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                                                                  "Gibson, William, 1948—" .
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                                                   dc:creator
                                                                  "William Gibson" .
                                                                  "Sterling, Bruce, 1954-" .
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                                                                      <http://libris.kb.se/resource/library/Vvt> .
Ibris.//libris.kb.se/resource/bib/5059476> libris:frbr_related <a href="http://libris.kb.se/resource/bib/5060570">http://libris.kb.se/resource/bib/5060570</a>>.
Anders:~ bcd$
```

```
000
                                          Terminal - bash - 106×31
Last login: Tue Feb 24 02:50:30 on ttys000
Anders:~ bcd$ curl -L -H accept:text/rdf+n3 http://libris.kb.se/resource/auth/220040
@prefix owl: <http://www.w3.org/2002/07/owl#> .
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
@prefix foaf: <a href="http://xmlns.com/foaf/0.1/">...
@prefix dc: <a href="http://purl.org/dc/elements/1.1/"> .
@prefix rdfs: <http://www.w3.ora/2000/01/rdf-schema#> .
@prefix dbpedia: <a href="http://dbpedia.org/property/"> .
@prefix skos: <a href="http://www.w3.org/2004/02/skos/core#">http://www.w3.org/2004/02/skos/core#</a>.
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
@prefix libris: <a href="http://libris.kb.se/vocabulary/experimental#">http://libris.kb.se/vocabulary/experimental#</a>.
<http://libris.kb.se/resource/auth/220040>
                                                 rdfs:isDefinedBv
                                                                       <http://libris.kb.se/data/auth/220040>

http://libris.kb.se/resource/auth/220040> owl:sameAs <a href="http://dbpedia.org/data/William_Gibson">http://dbpedia.org/data/William_Gibson</a>.

http://libris.kb.se/resource/auth/220040> rdf:type <a href="http://xmlns.com/foaf/0.1/Person">http://xmlns.com/foaf/0.1/Person</a>.
http://libris.kb.se/resource/auth/220040> foaf:name "Gibson, William, 1948-" .
http://libris.kb.se/resource/auth/220040> libris:key "Gibson, William, 1948=" .
http://libris.kb.se/resource/auth/220040> foaf:name "William Gibson" .
<http://libris.kb.se/resource/auth/220040> dbpedia:birthYear "1948" .

¬http://libris.kb.se/resource/auth/220040> rdf:seeAlso ¬http://en.wikipedia.org/wiki/William_Gibson> .

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<http://libris.kb.se/resource/bib/5045207>
                                                                 <http://libris.kb.se/resource/auth/220040> .
                                                  dc:creator
```

- Links to dbpedia.org
- Links to id.loc.gov
- Links to Icsubjects.org

LIBRIS Linked Data Strategies

- Data first
- Represent ILS state
- Use existing vocabularies when possible (DC, SKOS, FOAF, Bibo, Geo, ...)
- Make up vocabularies if needed
- Learn by doing









So, what about the future?



The future is a work-in-progress...

Links, links, links...

- DbPedia
- MusicBrainz
- id.loc.gov
- VIAF
- Open Library
- ...

Ontologies

- Use of existing ontologies will be improved
- More information will be added

• ...

Problems

- Current library systems are not adapted for linked data
- Current legal system is not adapted for linked data
- Current bibliographic thinking is not adapted for linked data
- All this will change...

Library data in the Age of Biology

It is likely that biotechnology will dominate our lives and our economic activities during the second half of the twenty-first century, just as computer technology dominated our lives and our economy during the second half of the twentieth.

- Freeman Dyson

Principles of Organization

Principles of Organization

Economic era

Paradigm author Metaphor

Values

Control

Development

Designer as
Designer's role
Client as

Relationship

Stopping condition

Result End-state Tempo Mechanical-object

Industrial age Newton Clock-works Seek simplicity

Top-down

From outside

Externally-assembled

Made

Author Deciding

Owner Request for proposal

Almost perfect More deterministic Completed Editions Organic-system

Information age

Darwin Ecologies

Embrace complexity

Bottom-up From inside Self-organizing

Grown

Facilitator

Building agreement

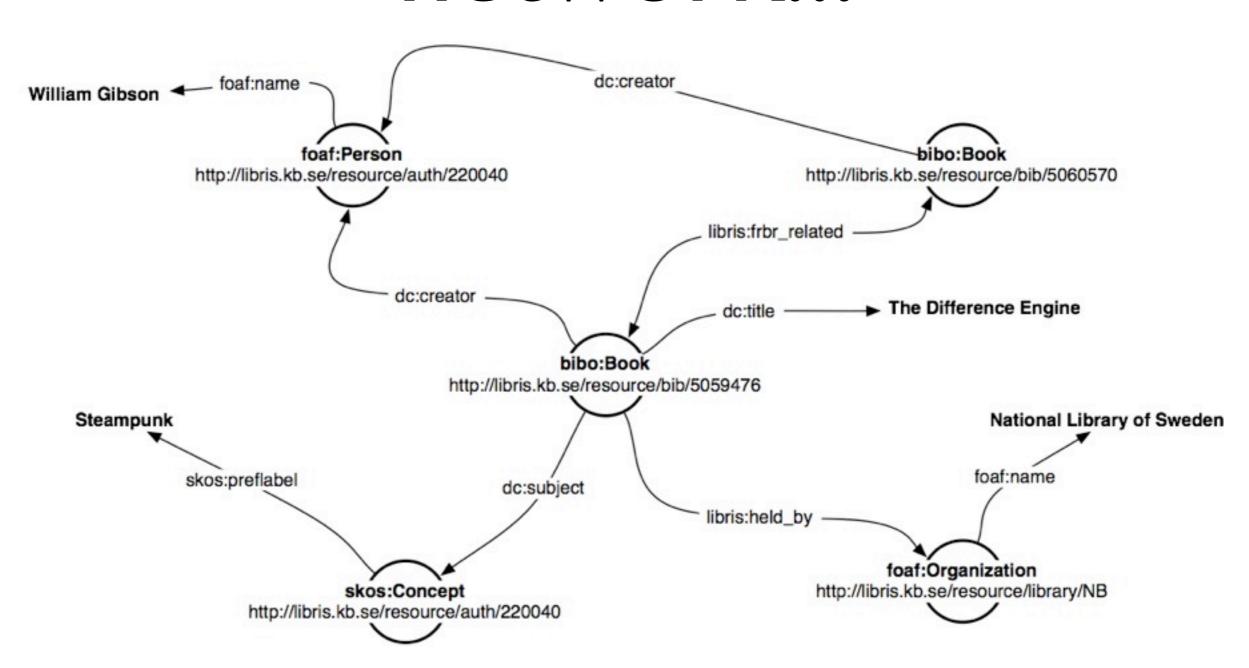
Steward Conversation

Good enough for now Less predictable Adapting or evolving Continuous updating

-adapted from Hugh Dubberly and Paul Pangaro [5]

From Hugh Dubberly, Design in the Age of Biology http://www.use8.net/magazine.php?ArticleId=101

Viewing the catalog as a network...



... raises a lot of questions!

- What is a record?
- When is a record?
- What kind of network is the library catalog?

Network effects arise when the act of participation makes the entire network more useful for everyone.

- Ian Davis, Talis

Things to remember

- Open networks outpaces walled gardens
- Strong networks require more than only one hub
- Systems built for delivery of records on magnetic tape (i.e. MARC, LIBRIS in the 70's) need to change
- 'Good enough' beats perfection

For what the body catalog can do noone has hitherto determined, that is to say, experience has thought no one hitherto, what the body catalog, without being determined by the mind library, can do...

- adapted from Spinoza, Ethics

Thanks!

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