

Why libraries should embrace Linked Data

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National Library of Sweden

Why LIBRIS likes Linked Data

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National Library of Sweden

LIBRIS

- Swedish National Union Catalog
- 170 libraries
- 6 million bib records
- 20 million holdings
- 250k authority records
- National bibliography

LIBRIS

- Library directory
- Library infrastructure ("metadata switch")
- Online public access (for humans) since 1997
- Marc21 since 2001
- Linked Data since 2008

What is Linked Data?

From http://en.wikipedia.org/wiki/Linked_Data:

Linked Data is a term used to describe a method of exposing, sharing, and connecting data on the Web via dereferenceable URIs.

Four principles of Linked Data (TBL 2006)

- Use URIs as names for things
- Use HTTP URIs so that people can look up those names.
- When someone looks up a URI, provide useful information.
- Include links to other URIs, so that they can discover more things.


**Why use Linked Data
for your library catalog?**

New LIBRIS, dec 2007

LIBRIS LIBRIS SÖKTJÄNSTER | HJÄLP | IN ENGLISH | ANPASSA | RENSA HISTORIK


Start Utökad sökning Bläddra ämnesvis Index A-O Boolesk Deldatabaser Sökhistorik

?

 **Utforska**


Här finns böcker, avhandlingar, tidskrifter, noter, e-böcker m.m.

[Vi guidar dig in i LIBRIS](#)

 **Anpassa**







Ett LIBRIS efter dina behov – favoritbibliotek, kontrast ...

[Kontrast](#) | [Vyer](#) | [Mina bibliotek](#)

 **Vad är LIBRIS?**

De svenska universitets- och forskningsbibliotekens söktjänst

[Läs mer om LIBRIS](#) | [Tyck till!](#)

[Charles Darwins 200-årsjubileum](#)

◀ [Ny kartfunktion](#) [Charles Darwin 200 år](#) [LIBRIS snabbguide](#) [Nya svenska böcker](#) ▶

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

- *Eliel Saarinen*

This means...

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

The question is not
"What is a catalog?"
but "What can a
catalog become?"

What is the Web?

- An infrastructure for moving bits
- An environment for communication, information dissemination, etc...
- The Web is social
- The Web is a network
- The Web is made of links
- Open system, anyone can join / link

Catalogs in Web context

- Need to be open (Get your data out!)
- Need to be linkable
- Needs to provide links
- Must be part of the network
- Can not be an end in itself
- Allow for hackability

Why APIs suck

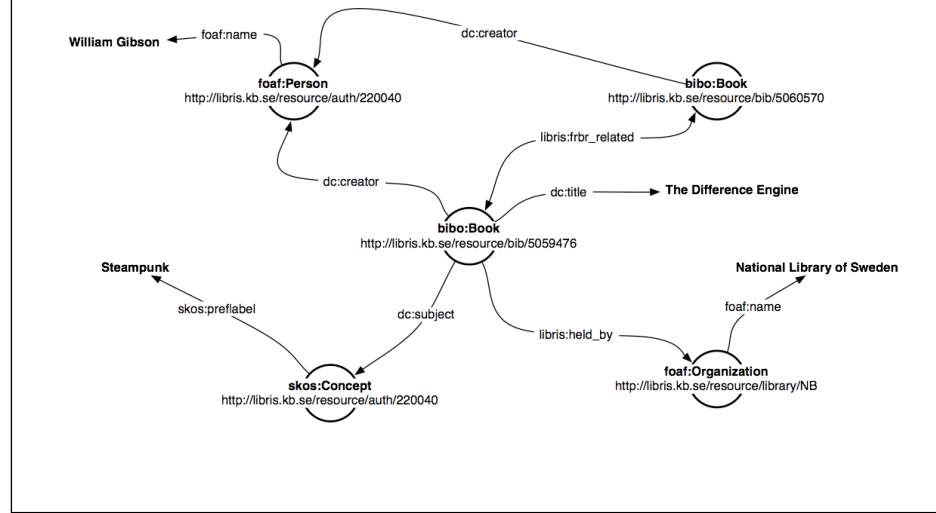
- Context specific / differ from each other
- Too much control in the hands of the producer (too dependant of the producers world view)
- Not hackable enough
- Not really weaved into the Web

- Despite this, we have built some APIs...

Linked Open Data turns the Web into an API.

- *Corey A. Harper*

So what does it look like?



How do I find it?

- HTTP URI for every resource, ex:
<http://libris.kb.se/resource/bib/5059476>
<http://libris.kb.se/resource/auth/220040>
<http://libris.kb.se/resource/library/S>

HTTP content negotiation

- HTTP 303 See other
- text/html -> <http://libris.kb.se/bib/5059456>
- text/rdf+n3 -> <http://libris.kb.se/data/bib/5059456>

text/html-view

LIBRIS 

LIBRIS SÖKTJÄNSTER | HJÄLP | IN ENGLISH | ANPASSA | RENSÄ HISTORIK

Start Utökad sökning Bläddra ämnesvis Index A-O Boolesk Databaser Sökhistorik


onr:5059476

Sökning: onr:5059476 > The difference engli...

1 av 1 ◀ Föregående post | Nästa post ▶ Till träfflistan

Oversikt Detaljer

The difference engine / William Gibson & Bruce Sterling

Gibson, William, 1948- (författare)
Sterling, Bruce, 1954- (författare)
ISBN 0-575-04762-3
London : Gollancz, 1990
Engelska 383 s.
 Bok

▶ Sammanfattning ▶ Ämnesord

SPARA | SKAPA REFERENS | MEJLA ▶ Länka till posten

Hitta Andra utgåvor

Låna | Fjärrlåna/beställ

Titeln finns på 2 bibliotek.  Visa karta ▶ Expandera lista

Y Hitta liknande

Fler titlar av

- Gibson, William, 194 ...
- Sterling, Bruce, 195 ...

Fler titlar om

- Steampunk

Y Sök utanför LIBRIS

Sök vidare i:

- Google
- Google Book Search
- Google Scholar
- Scirus
- LibraryThing
- OAlster

Wikipedia om författaren:

- William Gibson

text/html-view

LIBRIS

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Start Utökad sökning Bläddra ämnesvis Index A-O Boolesk Databaser Sökhistorik

onr:5059476

Sök

```
<script type="text/javascript" src="js/showcoord.js"></script>
<script type="text/javascript" src="js/wiki.js"></script>
<!--<script type="text/javascript" src="js/authorityExpander.js"></script-->
<script type="text/javascript" src="js/showMore.js"></script>
<script type="text/javascript" src="js/ob.js"></script>
<script type="text/javascript" src="js/ae/googleBooks.js"></script>
<!--libris.kb.se-->
<script src="http://maps.google.com/maps?file=api&v=2&key=ABQIAAAA7fEQxiqYokwtSpHanjF8rTevPMz12F8kh_JAlnkvHbFivt8"
</script>
<script type="text/javascript" src="js/ae/getitMap.js"></script>
<script type="text/javascript" src="js/ae/plotMap.js"></script>
<link rel="alternate" type="text/rdf+n3" title="RDF Representation" href="http://libris.kb.se/data/bib/5059476?format=text"
<link rel="alternate" type="application/rdf+xml" title="RDF Representation" href="http://libris.kb.se/data/bib/5059476?for
<link rel="icon" href="/images/favicon.ico" type="image/x-icon" >
<link rel="shortcut icon" href="/images/favicon.ico" type="image/x-icon" >
<!--[if lt IE 8]>
<style type="text/css" media="screen, projection">
@import "null?";
@import url(css/kb_ie2.css);
</style>
</if-->
```

Sammanfattning → Ämnesord

SPARA | SKAPA REFERENS | MEJLA | Länka till posten

Hitta Andra utgåvor

Låna | Fjärrlåna/beställ

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- Google
- Google Book Search
- Google Scholar
- Scirus
- LibraryThing
- OAlster

Wikipedia om författaren:
• William Gibson

text/rdf+n3

```
Terminal — bash — 110x31
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: <http://purl.org/dc/elements/1.1/> .
@prefix owl: <http://www.w3.org/2002/07/owl#> .
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
@prefix libris: <http://libris.kb.se/vocabulary/experimental#> .
@prefix bibo: <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 .
<http://libris.kb.se/resource/bib/5059476> dc:title "The difference engine"en .
<http://libris.kb.se/resource/bib/5059476> dc:creator "Gibson, William, 1948-" .
<http://libris.kb.se/resource/bib/5059476> dc:creator "William Gibson" .
<http://libris.kb.se/resource/bib/5059476> dc:creator "Sterling, Bruce, 1954-" .
<http://libris.kb.se/resource/bib/5059476> dc:creator "Bruce Sterling" .
<http://libris.kb.se/resource/bib/5059476> dc:type "text" .
<http://libris.kb.se/resource/bib/5059476> dc:publisher "Gollancz" .
<http://libris.kb.se/resource/bib/5059476> dc:date "1998" .
<http://libris.kb.se/resource/bib/5059476> dc:subject "steampunk" .
<http://libris.kb.se/resource/bib/5059476> dc:identifier <IRN:ISBN:0575047623> .
<http://libris.kb.se/resource/bib/5059476> bibo:isbn10 "0575047623" .
<http://libris.kb.se/resource/bib/5059476> dc:creator <http://libris.kb.se/resource/uth/220040> .
<http://libris.kb.se/resource/bib/5059476> dc:creator <http://libris.kb.se/resource/uth/307779> .
<http://libris.kb.se/resource/bib/5059476> dc:subject <http://libris.kb.se/resource/uth/308073> .
<http://libris.kb.se/resource/bib/5059476> dc:subject <http://libris.kb.se/resource/uth/308074> .
<http://libris.kb.se/resource/bib/5059476> libris:held_by <http://libris.kb.se/resource/library/Sk> .
<http://libris.kb.se/resource/bib/5059476> libris:held_by <http://libris.kb.se/resource/library/Vvt> .
<http://libris.kb.se/resource/bib/5059476> libris:frbr_related <http://libris.kb.se/resource/bib/5060570> .
Anders~ bcd$
```

text/rdf+n3 again

```
Terminal — bash — 106x31
Last login: Tue Feb 24 02:50:30 on ttys000
Anders~ % 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: <http://xmlns.com/foaf/0.1/> .
@prefix dc: <http://purl.org/dc/elements/1.1/> .
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
@prefix dpedia: <http://dpedia.org/property/> .
@prefix skos: <http://www.w3.org/2004/02/skos/core#> .
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
@prefix libris: <http://libris.kb.se/vocabulary/experimental#> .
<http://libris.kb.se/resource/auth/220040> rdfs:isDefinedBy <http://libris.kb.se/data/auth/220040> .
<http://libris.kb.se/resource/auth/220040> owl:sameAs <http://dpedia.org/data/William_Gibson> .
<http://libris.kb.se/resource/auth/220040> rdf:type <http://xmlns.com/foaf/0.1/Person> .
<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> dpedia:birthYear "1948" .
<http://libris.kb.se/resource/auth/220040> rdfs:seeAlso <http://en.wikipedia.org/wiki/William_Gibson> .
<http://libris.kb.se/resource/bib/2716170> dc:creator <http://libris.kb.se/resource/auth/220040> .
<http://libris.kb.se/resource/bib/2793076> dc:creator <http://libris.kb.se/resource/auth/220040> .
<http://libris.kb.se/resource/bib/4465470> dc:creator <http://libris.kb.se/resource/auth/220040> .
<http://libris.kb.se/resource/bib/4574314> dc:creator <http://libris.kb.se/resource/auth/220040> .
<http://libris.kb.se/resource/bib/4897748> dc:creator <http://libris.kb.se/resource/auth/220040> .
<http://libris.kb.se/resource/bib/4898022> dc:creator <http://libris.kb.se/resource/auth/220040> .
<http://libris.kb.se/resource/bib/4936825> dc:creator <http://libris.kb.se/resource/auth/220040> .
<http://libris.kb.se/resource/bib/4936856> dc:creator <http://libris.kb.se/resource/auth/220040> .
<http://libris.kb.se/resource/bib/4936872> dc:creator <http://libris.kb.se/resource/auth/220040> .
<http://libris.kb.se/resource/bib/4969449> dc:subject <http://libris.kb.se/resource/auth/220040> .
<http://libris.kb.se/resource/bib/5044419> dc:creator <http://libris.kb.se/resource/auth/220040> .
<http://libris.kb.se/resource/bib/5045207> dc:creator <http://libris.kb.se/resource/auth/220040> .
```

Strategies

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

Read

- "Making a Library Catalog Part of the Semantic Web", Martin Malmsten 2008
<http://libris.kb.se/resource/bib/11306748>
- "LIBRIS - Linked Library Data", Anders Söderbäck and Martin Malmsten 2008, in Nodalities #5, www.talis.com/nodalities

Coming up next...

- Dbpedia links
- Open Source project for turning ILS:s into linked data (e-mail martin.malmsten@kb.se)
- Hope for network effects

Contact

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