

# Dublin Core: The Road from Metadata Formats to Linked Data

Joint NISO/DCMI Webinar

25 August 2010

*Makx Dekkers and Thomas Baker*



---

# Dublin Core in the Early Web Revolution



## First steps

---

- In October 1994, informal discussion at second Web Conference, Chicago
- Identified a need for a “core” set of descriptors to help discover content on the Web
- 1-3 March 1995, OCLC/NCSA workshop in Dublin, Ohio at OCLC Headquarters



## Dublin Core: the original idea

---

- A basic description mechanism for digital information that:
  - can be used in all domains
  - can be used for any type of resource
  - is simple, yet powerful
- Making it easier to find information on the Web as it develops (1995!)



## 1995: The Dublin Core

### Elements

1. Identifier
2. Title
3. Creator
4. Contributor
5. Publisher
6. Subject
7. Description
8. Coverage
9. Format
10. Type
11. Date
12. Relation
13. Source
14. Rights
15. Language

- “Core” set, simple enough for non-experts to understand and create
- A “library catalog card” for Web objects
- Based on consensus across domains
- Standardized:
  - IETF RFC2413 (1998), RFC5013 (2007)
  - NISO Z39.85-2001, revised 2007
  - ISO 15836:2003, revised 2009



## 1996: Modular metadata

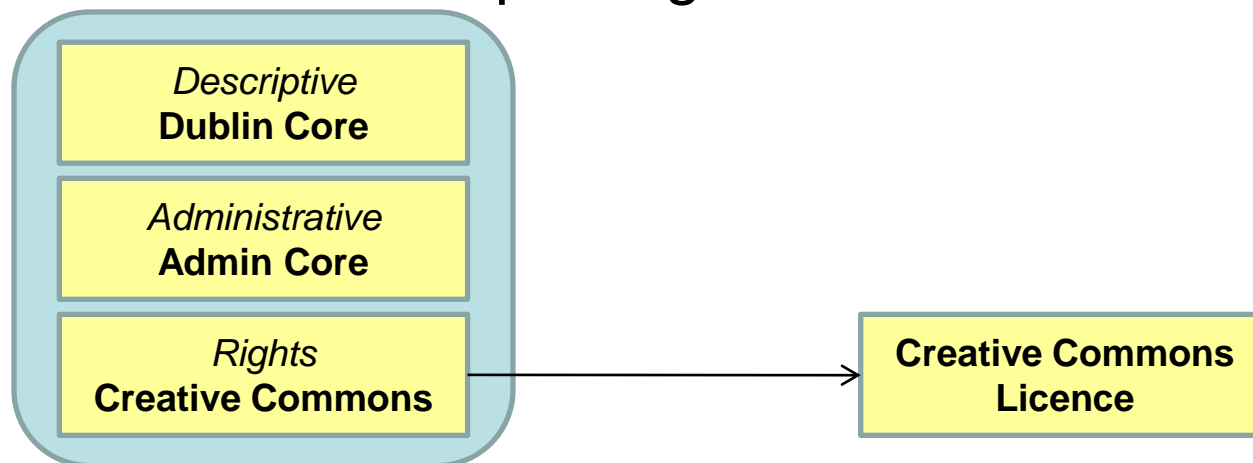
---

- Not: “One size fits all”
- Different ways to describe one object:
  - MARC records for library catalogs
  - Dublin Core for simpler descriptions
  - Specialized metadata for terms and conditions of use
- Recognized need for a general framework for different types of metadata



## 1996: Towards metadata “frameworks”

- Warwick Framework: “packages” in “containers”



- W3C Resource Description Framework (RDF)
  - Generic, interoperable expression of metadata



## 1997: Qualification to add precision

---

- Not just any Date, but a Date the resource was *Created*
- Not just any Subject, but a *Library of Congress Subject Heading*
- Dumb-down: ignore extra details to see just a “core” description





## 2000: Application Profiles

---

- **Customized implementations**
  - Use “the Dublin Core” with **other vocabularies**
  - **Local rules** and guidelines
- Application profile provides documentation so that others can follow
- Not “take it or leave it”, but “**take what you want, create what you need**”



## Dublin Core usage

---

- The Web exploded (now over a trillion pages!)
- Search engines took care of the open Web
- Dublin Core metadata came to be used widely in “controlled environments”
  - As a basic description mechanism
  - As a basic exchange format
- But never intended to be a “complete” solution



## Interoperability in the early Web

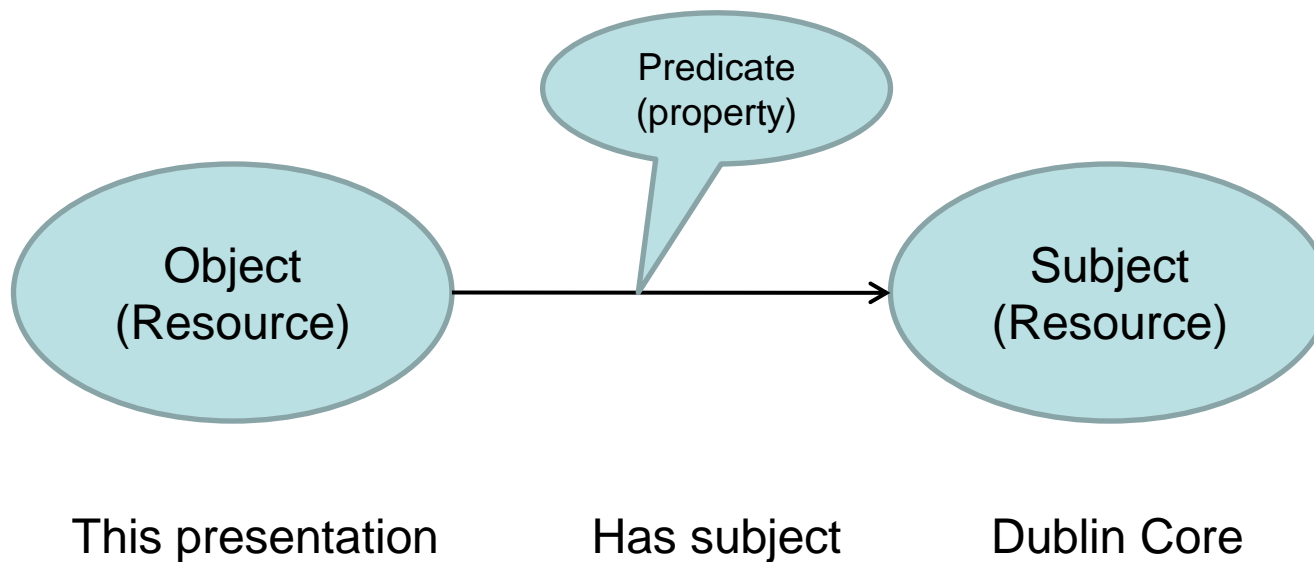
---

- No interoperability of **data** in the Open Web
  - Mostly pages with links for human navigation
- Controlled environments: “intra-operability” (cooperation between known partners)
  - But “intra-net” can be quite large, e.g. OAI-PMH
- Semantic Web/Linked Data intends to “open up” controlled environments (“silos”)
  - Global interoperability across silos through typed links



## Linked Data basic principle

---





## Dublin Core principles and Linked Data

### ➤ Dublin Core principles (1995-2005)

- One-to-one (describe one and one thing only)
- Dumb-down
- Appropriate values

### ➤ Corresponding Linked Data design principle

- A statement is “about” a named resource
- Sub-property relations
- Choice between text strings and links to other resources

Dublin Core was one of the inspirations for RDF



## Dublin Core development

---

- Started from a vision for the open Web (HTML)
- Came to be widely deployed in controlled environments (XML)
- Further developed since 2000 in conjunction with Semantic Web and Linked Data (RDF)
- From a “Core Metadata Element Set” for the Web to a “core vocabulary” for Linked Data