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Possible use of DOI in eContent trade via Broad-band and 3G-Mobile

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Summary

- What the DOI is
- What the DOI is not
- The *m*EDRA applications based on DOI
- Possible business cases
- What's about Telecom?

What the DOI is

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1. DOI is a standard identifier…

DOI has a similar role for e-content trade like the Bar code has in commerce of tangible goods: it facilitates interoperability between the information systems of parties.

… for "Intellectual property entities"

Not only (any kind of) digital object but any IP entity, including abstractions, books, etc.

The more complex the value net is, the higher the value of DOI

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The DOI Metadata

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2. DOI is a tool to describe the identified entities

- Metadata schemas are required for different Applications Profiles (APs)
- Each schema includes a minimum set of metadata (*kernel metadata*)…
- … and additional metadata appropriate for the application profile. These last includes "descriptive metadata" (related to the genre of the resources) and "service and administrative metadata" (related to applications)

- DOI use existing metadata schemas and look for their interoperability within the framework of the Indecs initiative

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DOI resolution system

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3. DOI is supported by a resolution system that makes DOIs "actionable" in the Internet

- The underlying technology is the Handle System® produced by CNRI (USA)
- Handle is a resolution system: i.e. a tool to resolve a number to a source of information (typically a URL). It belongs to the n 2 l (urn to url) technologies
- Handle allows multiple resolution: i.e. a DOI can point to more than one source of information

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Resolution vs Identification

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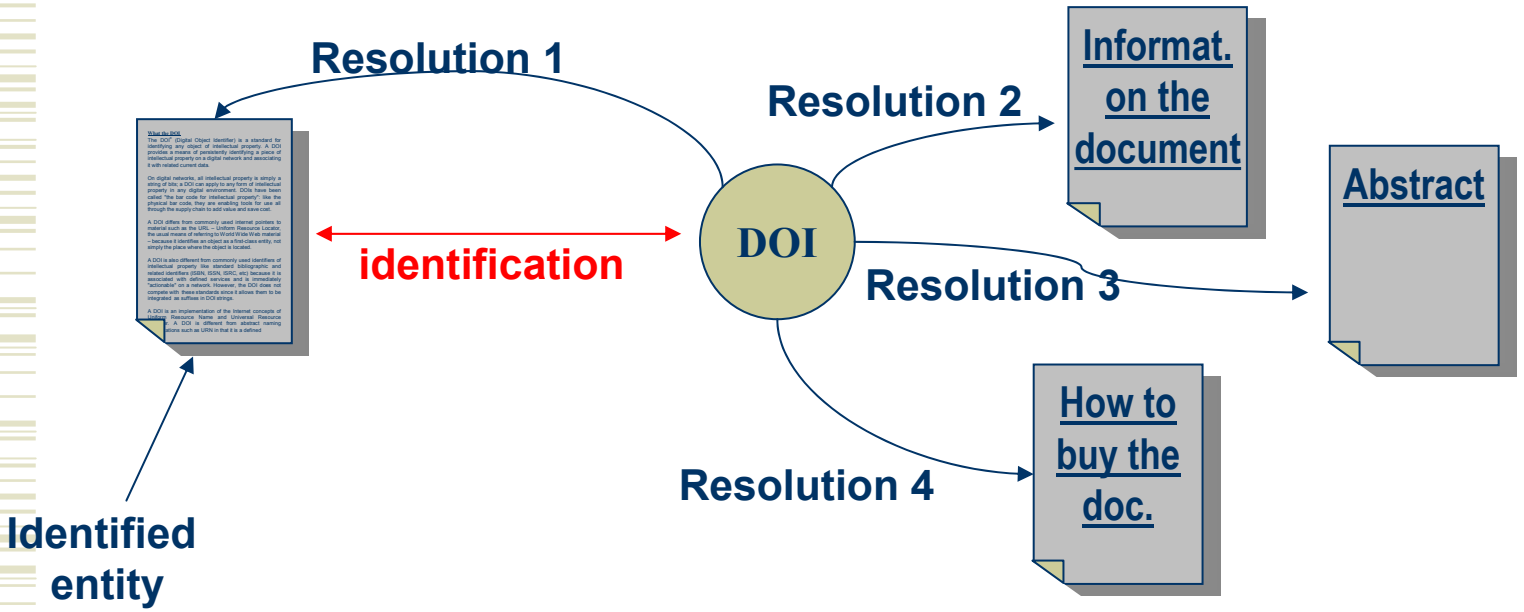
Remind that "what the DOI identifies" and "what the DOI resolves to" are two different concepts



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Resolution vs Identification

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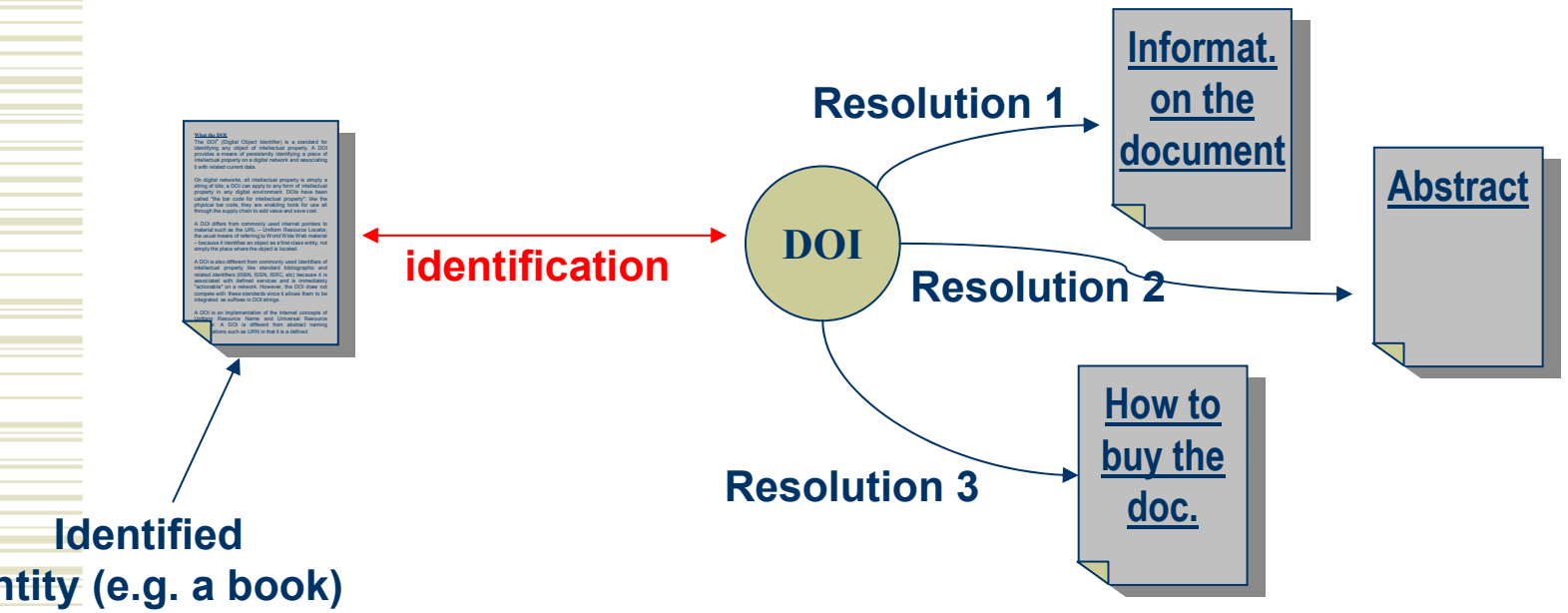
It is also possible that DOI does not resolve to the identified entity



4. The DOI is a Persistent identifier

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We now usually cite Internet content using URL

URL

URL

URL

URL

URL

URL

URL

URL

URL

URL

URL

URL

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Persistence: the current scenario

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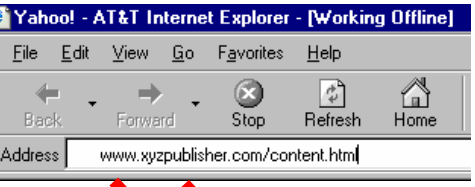

404
File not found

Content

"Linkrot": recent estimates 16% in 6 month

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Persistence: how the DOI works

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All links and citations using DOIs continue to wor

DOI directory

404
File not foun

Content

URL

DOI

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DOI Governance and structure

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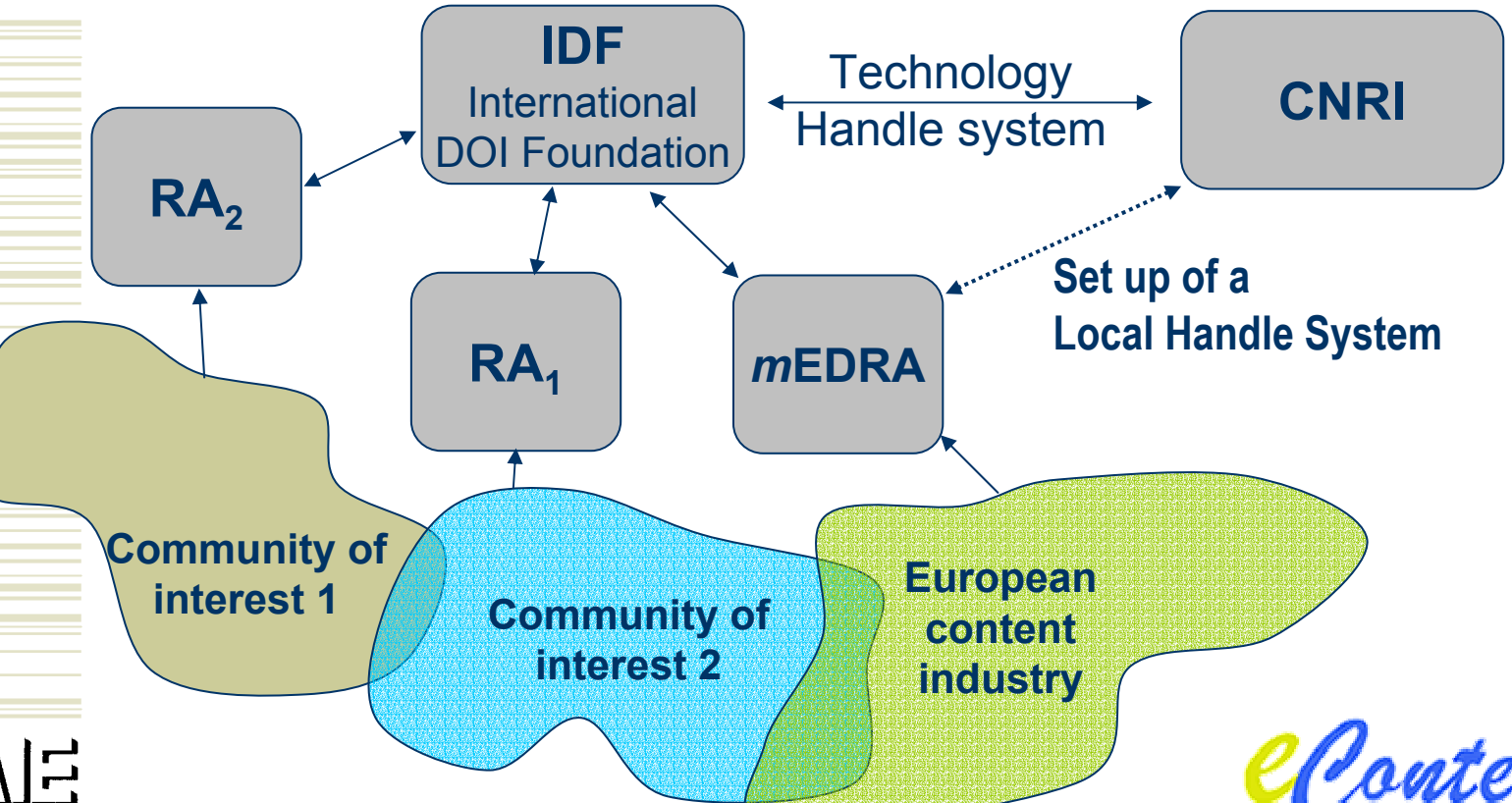
5. DOI system is based on a designed social structure



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What the DOI is not

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1. DOI is not a technical measure to protect copyright

- The DOI may be used within DRM system *but* it is not a DRM solution per se
- The mEDRA Deposit application (see below) allows certified copyright declaration *but* it is not a way to constitute the right
- The DOI may be potentially combined with watermarking technologies *but* it is not a technology to track illegitimate use of a content

The DOI is a facilitate to facilitate the trade, useful (necessary) but not sufficient for the development of eContent market

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What the DOI is not

2. DOI is not a technology to search content in the Internet

- The DOI does not compete with Google: it would be integrated and improve the Google performances
- Resolution, per se, is not searching
- DOI metadata may be used to create catalogues and search engines, but these are additional applications that someone has to implement

What is *m*EDRA

- **mEDRA was born as a project co-funded by the European Commission (eContent programme)**
- **It will be a commercial company by mid 2004**
- **Partners are:**
  - AIE (Italian Publishers Association) – co-ordinator
  - SNE (French Publishers Association)
  - MVB (company owned by the German PA, ISBN agency in Germany)
  - Editrain (a private company in Spain)
  - Cineca (a consortium of Italian universities) – technological provider

The mEDRA blueprint

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1 July 2002 – Start up of the European project

1 July 2003 – Start up of the agency: pilot phase

1 December 2003 – Launch of the system first release. Experimentation with early adopters

1 July 2004 – Launch of the system second release. Start up of the commercial phase…

…and start up of new implementations

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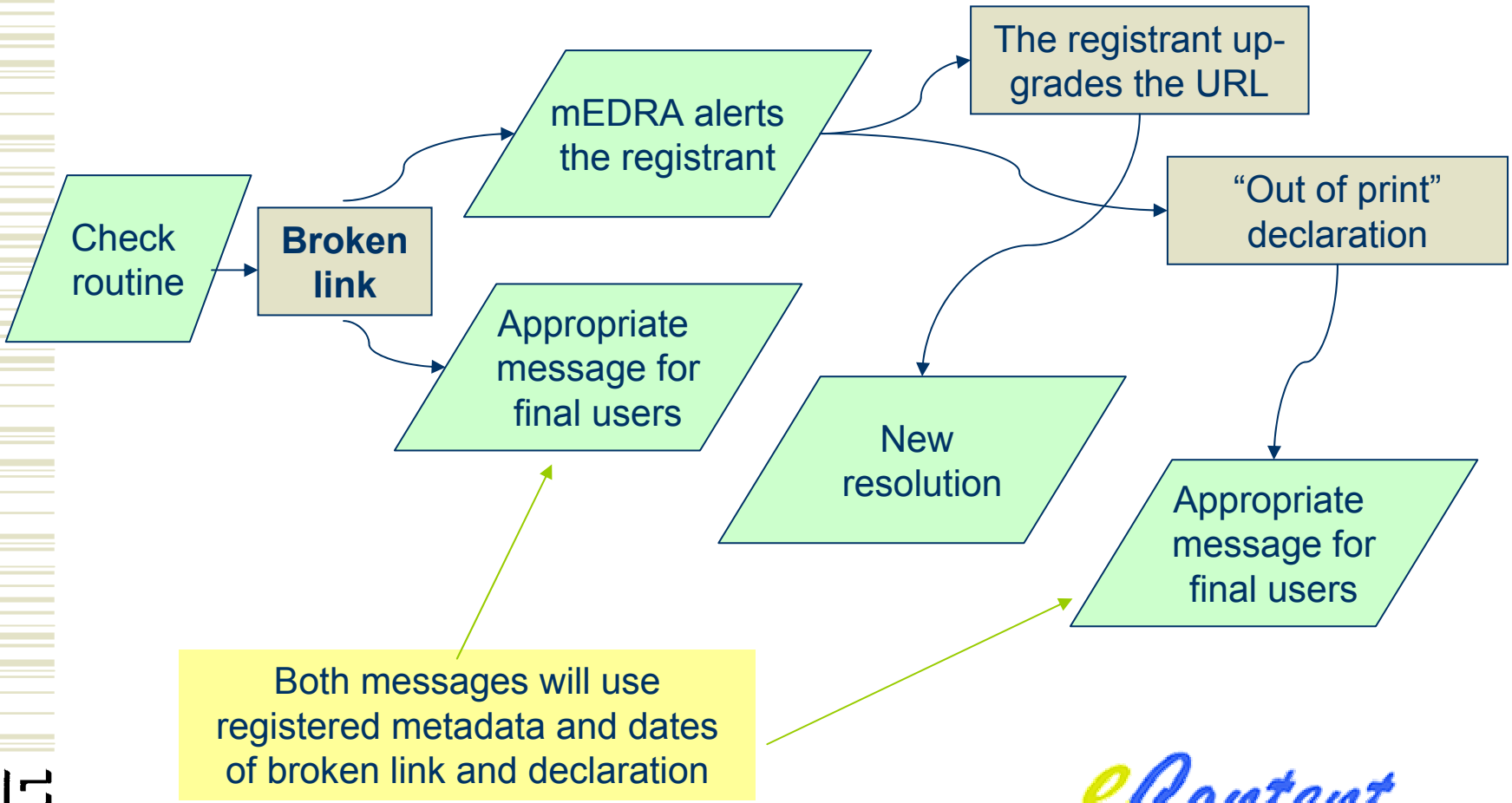
mEDRA Application 1: Persistent citation system

- Persistence is a basic feature of DOI technologies that however:
  - allow publishers to up-grade URLs registered in the DOI repository
  - but neither impose nor control publishers' behaviour
- It is a very simple application, exploiting one of the key features of DOI, but providing further value added:
  - Pragmatic definition of persistence: "*users always reach the best available information about the location of the identified entity*"
  - Check routines to control persistence
  - Automatic procedures when a URL is broken down, including appropriate messages to final users
  - Procedures and discipline for publishers

Application 1: what's happen in case of broken link?



Application 1: What is the value added?

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- Finally: users never receive an “error 404” message but always richer information: the best available on that content
- The objective: to substitute URLs to cite any resource in the Internet
  - Similar to Crossref system for certain extent
  - But different because it is not transparent for final users
- We’ll take care persistence (a technological problem) and elegance (a semiotic problem) of citation

Application 2: Tracking relations between IP entities

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- We have defined five (*plus one*) kinds of “parent-child” relations between IP entities
  - A is part of B (a chapter of a book…)
  - A is a different product form of B (pdf and doc file of the same content)
  - A is a new edition of B (different in content)
  - A is a different language version of B
  - A is a resource about B (a press release or a cover of a book)
  - *A is an abstraction of B (the abstract work of a book)*
- In principle, publishers register one relation and mEDRA will create the map of relations

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Application 2: the need

- mEDRA will assign identifiers to manifestations (two product forms shall have two distinct DOIs)…
  - This is also coherent with the ISBN Revision as far as electronic publications are concerned
- … as well as to abstractions (possible integration with ISTC)
- Relation tracking between manifestations is a need for producers, intermediaries, retailers and libraries. *It would be particularly important in rights market*
- It is also the base for further implementation in the field of multiple resolution

Application 3: Voluntary deposit

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- Functionalities:
  - To allow the deposit of every kind of digital file
  - To create a presumption in case of contest on rights ownership or on authorship
  - To certificate (using time stamping technologies) that a certain content was registered by a certain party at a certain date

- Access to deposited content is reserved to registrant: we will not implement any DRM solution
- N.B. This is not a “legal deposit” system (although it is possibl to look for possible collaboration)

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Content genres

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- We are starting from *monographs* and *journal articles*
  - In collaboration with Editeur mEDRA implemented ONIX based metadata schemas both for manifestations and abstractions
  - We are now mapping these schemas with Crossref and CAL metadata declarations, within the iDD project
- Further possible developments:
  - Digital images (photograph archives, etc.)
  - Software
  - Legislation (is it necessary a specific metadata scheme?)
- We are also exploring
  - Learning objects

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Collaboration with other RAs

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- Objective: to have fully compatible metadata schemas (also through the iDD) and interoperable systems
- Crossref: the final objective is
  - To allow cross-linking between content registered in mEDRA and in Crossref
- CAL (Australia): the final objective is that
  - content registered in mEDRA will be accessible for Australian universities through CAL
  - We are also exploring the possibility to localise the CAL system in Europe
- TSO (UK)
  - Comparison of metadata schemas for PSI, and possible collaboration for services

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Business case 1: the DOI and e-Content aggregators

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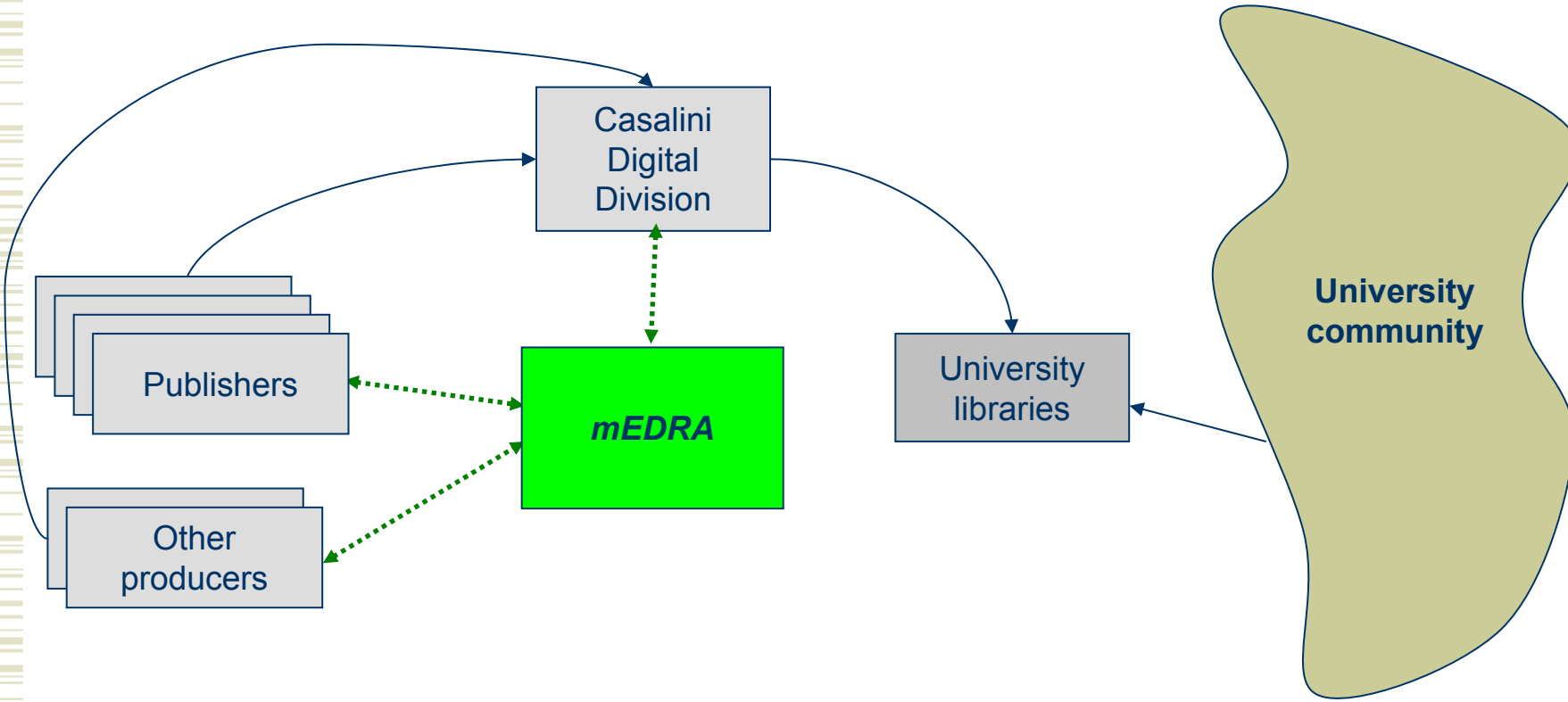

DOI assignment and metadata provision

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A short term evolution…

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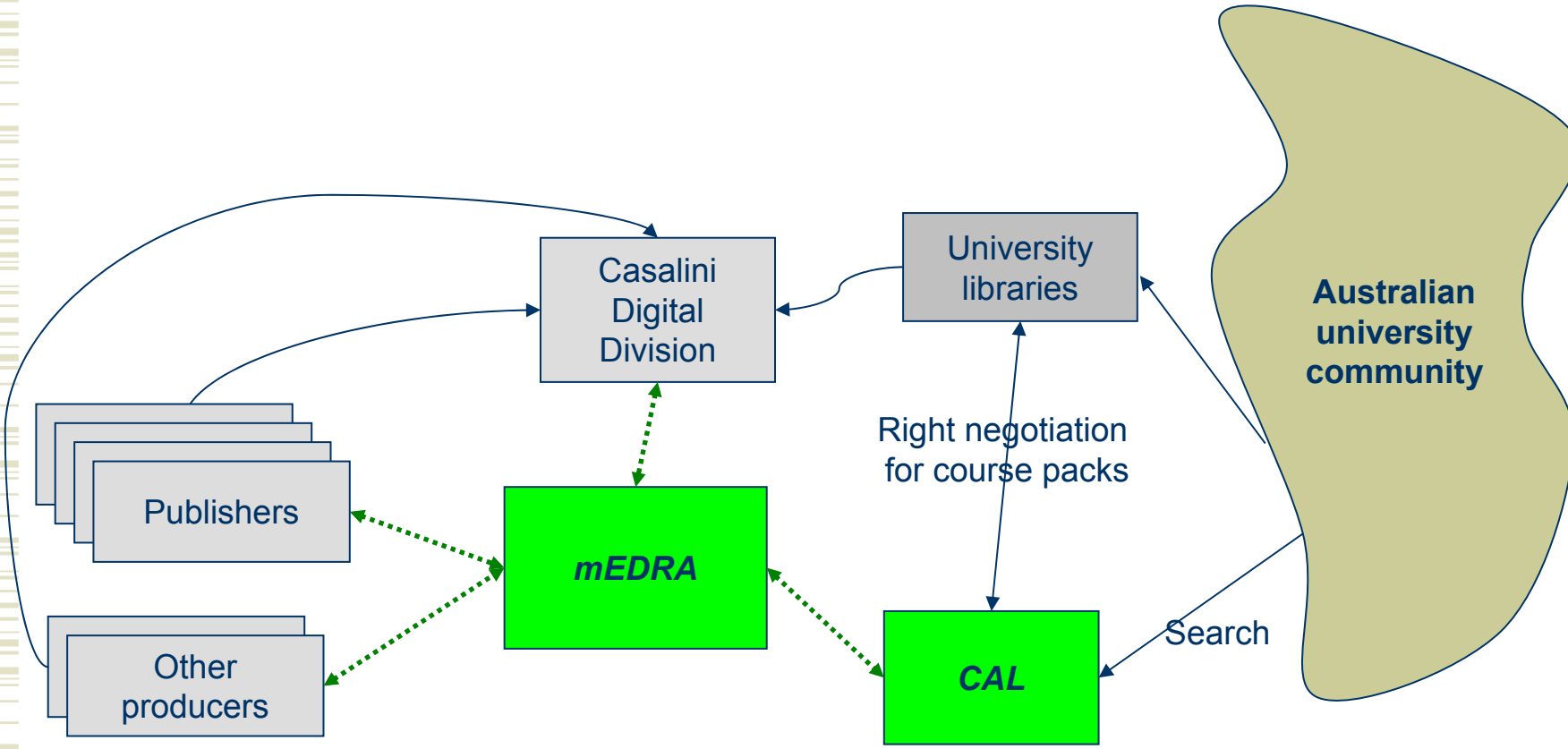

… and future development

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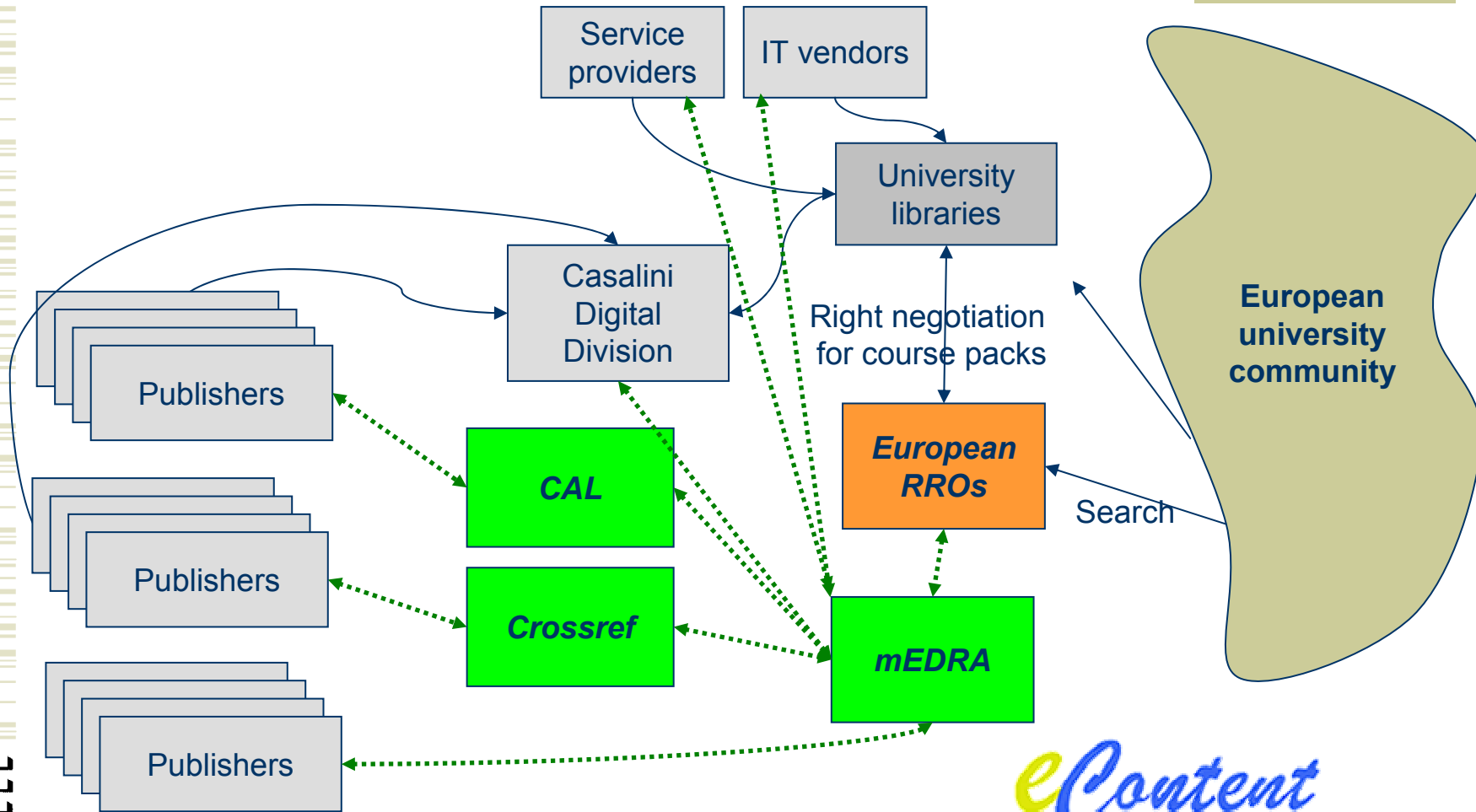

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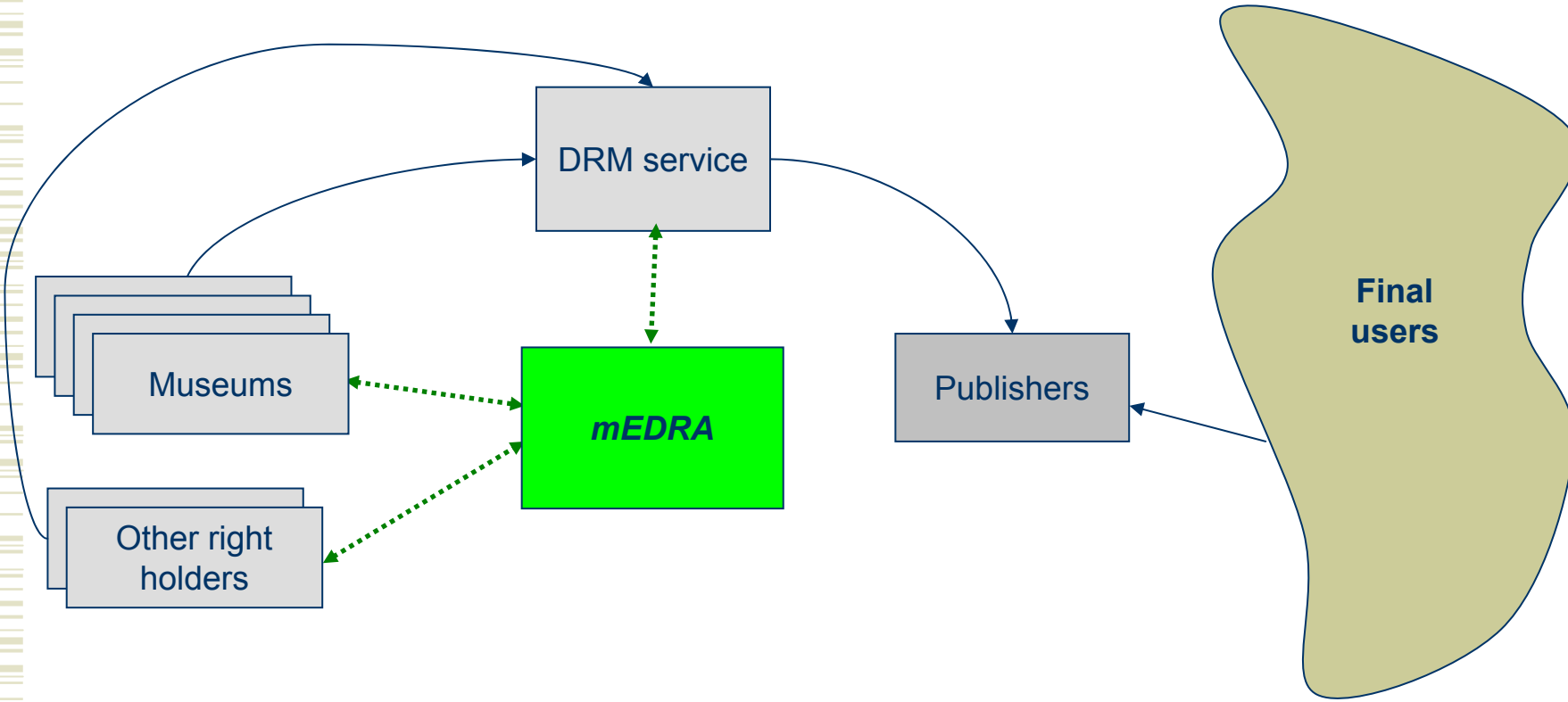
Business case 2: Rights market for images reproduction



DOI assignment and metadata provision

Business case 3: the eLearning value chain

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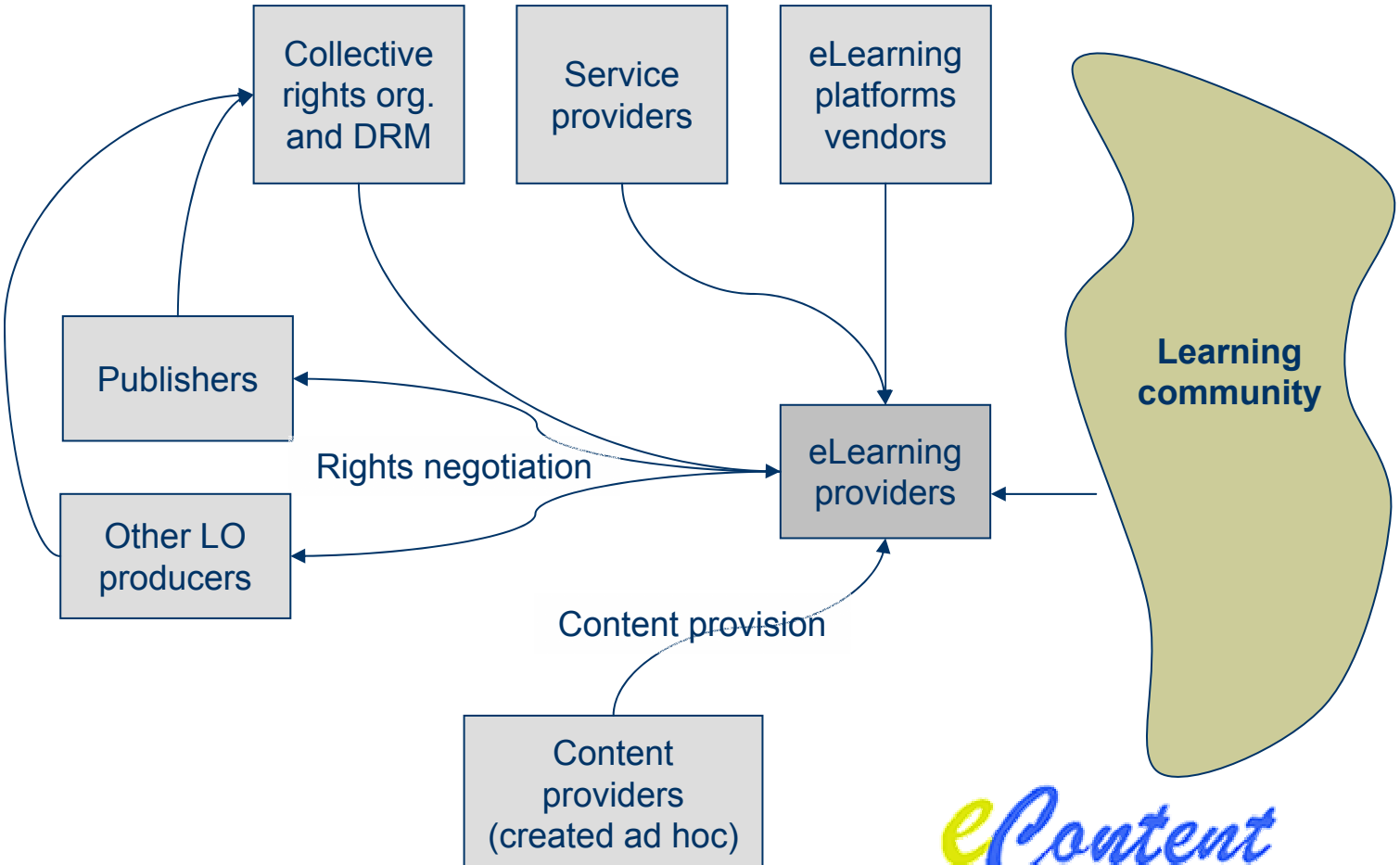

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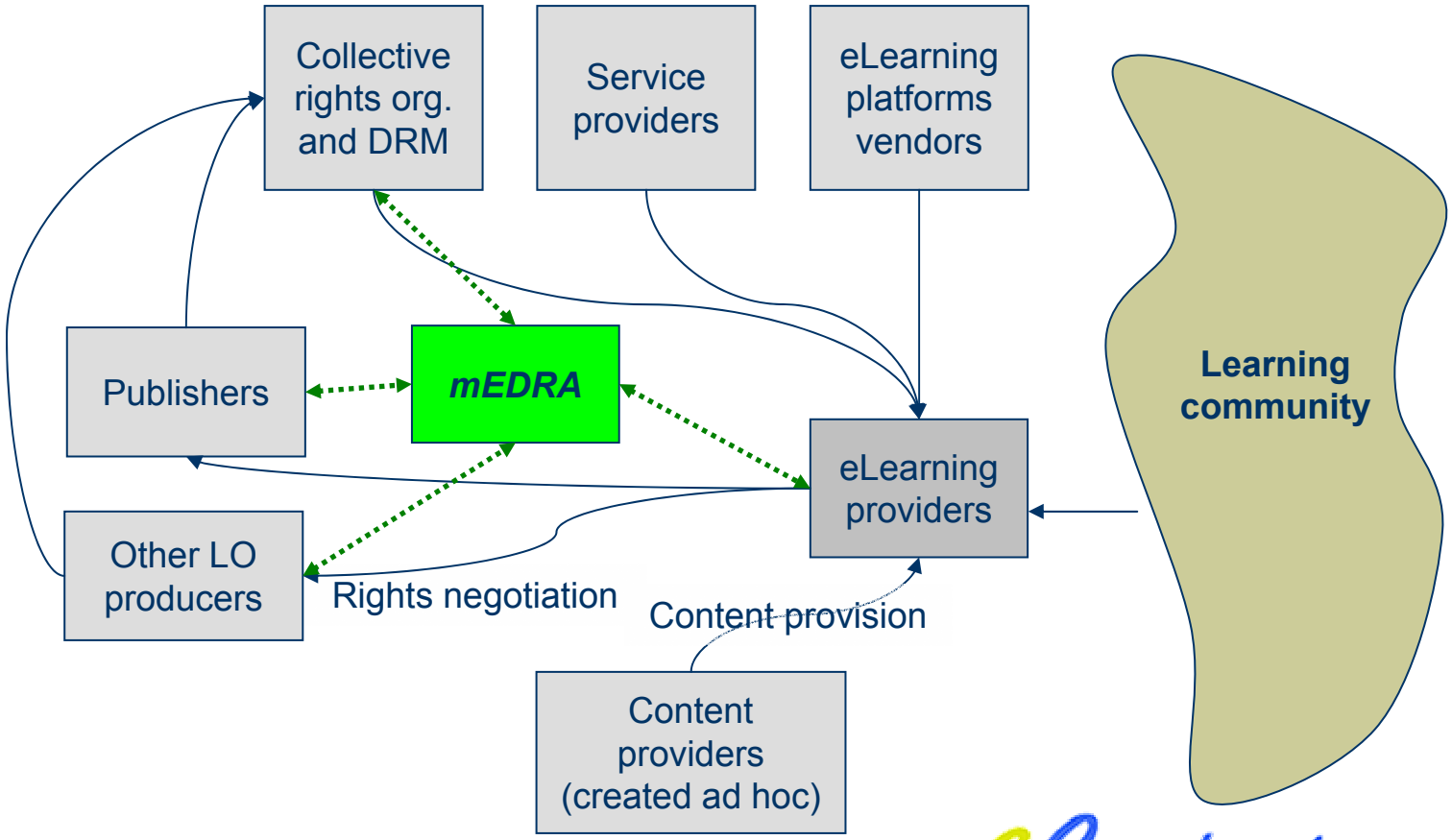
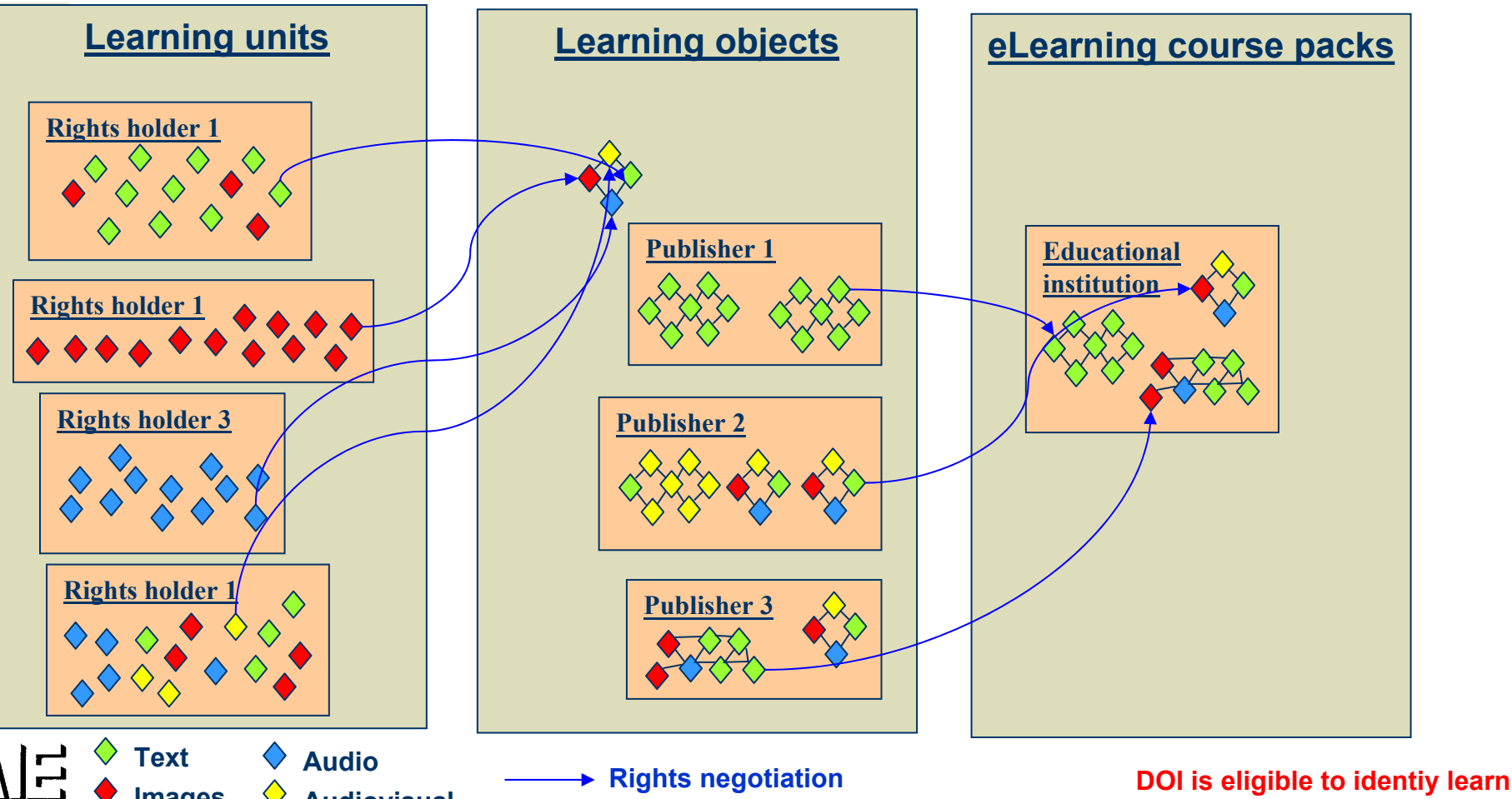
The role of DOI in the eLearning value chain



Learning objects and rights market



DOI is eligible to identiy learn

The DOI and the Telecoms

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- Does Telecoms' evolution imply (e-)content trade?
  - If yes: "*you need to identify what you trade*"
- Are the content providers expected to be many?
  - If yes: *you need a* ***common identification system***
- Are the content of different genres?
  - If yes: *you need a* ***multiple media*** *identifier*
- Is the market a monopolistic one?
  - If no: *you need a* ***standard*** *identifier*
- Is the market international
  - If yes: *you need an* ***international*** *standard*

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mEDRA – Telecom co-operation?

- mEDRA is in a leading position in the development of the standard
  - Co-operation will imply the advantage of first movers
  - *For the industry building a standard is better than adopting a standard*
- mEDRA is representative of (at least part) of content industry
  - Co-operation may result in joint R&D projects (e.g. in eLearning field)
- mEDRA is European
  - Co-operation imply the European dimension

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- For further information:

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