



DOI Outreach: Closing Remarks

Closing remarks by Norman Paskin, International DOI Foundation, at the Dec 3 DOI Outreach meeting, Tokyo, Dec 3 2015.

1. I would like to thank our hosts at JaLC; the speakers from DOI Registration Agencies; speakers from the DOI user community; and especially the audience for the extremely informed and engaging question and answer session. Their well-informed participation today has made the sessions very stimulating.
2. The meeting demonstrated the developing range of DOI technologies. We have seen in the presentations how DOI began with the idea of simple linking, to provide simple citation persistence, and is now moving to the complex functionality available through tools such as multiple resolution, data types, metadata sharing, workflow interactions, rights statements, expressing structured relationships, and feedback from usage from resolution. Fifteen years ago, the IDF published a discussion paper: "*From one to many: the next stage in the development of DOI functionality*"¹, which called for exactly this move: from one-to-one (link an identifier to citation), to one-to-many (link an identifier to many different types of information). We have succeeded in our goal; although we are still in the early stages of developing the appropriate governance for this, for example to ensure consistent naming of data types and interoperable metadata from many different sources, we have a clear architectural vision to guide us.
3. We have seen today DOI successfully applied to projects and problems, some in pilot or theoretical investigations and some in practical implementations and full scale working solutions, built on a consistent and extensible basis because they share a solid common Foundation in the LCC (Linked Content Coalition) *Principles of Identification*². The Principles of Identification are also extremely helpful in providing guidance on some of the questions raised in the Q&A sessions today, such as when to assign an identifier to a different or related referent, and I commend them to you.
4. A key theme we have seen in the presentations is that of Digital Convergence. For some years this has been something everyone recognises but which does not always impinge on

¹ "*From one to many: the next stage in the development of DOI functionality*": Norman Paskin (International DOI Foundation) & Laurence Lannom (Corporation for National Research Initiatives), August 2000. <http://doi.org/10.1000/190>

² *Linked Content Coalition: LCC Principles of Identification*, v1.1, April 2014. Editors Norman Paskin & Godfrey Rust. <http://doi.org/10.1000/283>.

their own particular silo. But today we have seen discussion of many types of digital content and global scope – during today’s talks I noted the following: scholarly articles; data; instruments and people used to create items; historical precedents and artefacts; movies and TV episodes; books; government papers; music tracks; and metadata about all of these. And several of these different things are often encountered in one application, so our core mechanism for interoperability is invaluable. This uses the *LCC Rights Reference Model*³, which is applicable beyond rights to all sorts of information: it is a formal, general and extensible reference data model for representing metadata, e.g. intellectual property rights and entitlements, for any media or content. Different content types are not separated stand-alone things: rather we see something akin to a living biological ecosystem. Not everything in this ecosystem will, or should be, identified with a DOI, but those that do will have many advantages of co-operation and collaboration open to them.

5. It has been encouraging to see the interest and the volume of potential DOI applications discussed today. Although we now have over 120 million DOIs assigned, this is just the tip of a very large iceberg. There are huge opportunities for everyone here, and there is a network effect: the more we assign, the more opportunities are revealed. I encourage you all to think about expanding your DOI registration activities.

6. What the digital ecosystem suggests is that beyond technical convergence, it is important that we collaborate, communicate, and work together: so that we can provide local answers for local needs, but answers which are part of a global digital solution, not isolated national efforts. In a global system, national standards can become part of the problem, not the whole solution.

7. The vision of what DOI could facilitate started some twenty years ago in the publishing industry⁴. If those of us discussing DOI then had a time machine and could have been here today we would have been very pleased – though perhaps surprised that it took so long!

Thank you all for your participation today.

³ *Linked Content Coalition: The LCC Rights Reference Model*. v1.0, April 2013
Editor Godfrey Rust. <http://doi.org/10.1000/284>

⁴ *The Digital Object Identifier: From Ad Hoc to National to International*. Norman Paskin, 2015.
http://www.doi.org/topics/150628_DOI_Case_Study_Paskin.pdf