



ICT and the Management of Creative Content

“The Answer to the Machine is in the Machine”

Frequently Asked Questions

What is “The Answer to the Machine is in the Machine”?

It is a project led by the [European Publishers Council](#) to (1) advance essential work in standardising rights expressions and automated transactions, including licensing and (2) to demonstrate the feasibility and benefits of implementing and integrating this in order to build an open communications infrastructure to support the development of content businesses online.

What is the origin of the project?

“The Answer to the Machine is in the Machine” was proposed in response to the European Commission’s DG InfSo competition for “[Big Ideas for the Digital Agenda](#)” – where it was one of seven “[winning ideas](#)” that was selected to go forward as part of that agenda. The project phase will culminate with a workshop and presentation at the [Digital Agenda Assembly](#) in Brussels in June.

Beyond the Digital Agenda Assembly, we will examine the scope for establishing the ground for a major cross-media initiative to adopt common standards for automating rights management online, and to that end anticipate organising conferences on both sides of the Atlantic during the summer.

Why now?

The primary thesis of the project is straightforward. Copyright as law is entirely fit for the new environment of networks and digital dissemination. But traditional practice for the management of copyright – individually lawyer-crafted licences, communication on paper, people-heavy processes – is a thing of the past. The internet inevitably brings with it the end of traditional ways of doing business, of high barriers to entry, of incumbency rights. Nevertheless, this does not imply that copyright has somehow become an outmoded concept. Copyright was conceived as a tool to encourage creativity; over three centuries, it has become the engine of a hugely diverse media sector, a society which values the role of author and composer, of photographer and musician and recognizes their right to decide on how their creations are used. Without copyright (and related intellectual property rights), the media as we know it today – whether in entertainment, education or the delivery of news or other factual information – would not exist. Almost all the businesses that are making real money out of content on the internet are dependent on other people’s investment (of time and money) in creating that content and have become adept at avoiding the responsibilities and liabilities that go with content creation. Platitudes about the value of “the link economy” count for nothing in the real world. Unless the individuals and businesses which create content can find a way of making a return on their investment (whether or not the return they seek is financial), they will inevitably cease to create a diverse range of content (and those with time and money to invest will put it elsewhere). Copyright is what makes it possible to make a return on creativity – and it is critical to the development of a thriving and diverse creative culture on the internet. Currently, the diversity and richness of content on the internet is subsidised by content delivered in other – physical – distribution channels. When that subsidy is no longer available, or at least becomes less significant – as must inevitably be the case – the internet will come to be a drab and uninteresting place. But how can we make copyright work in an environment where to make perfect copies and to republish content of any kind is so simple that we can all do it? The answer to the machine is in the machine. As we move into a machine-to-machine environment, the business of managing copyright must become a machine-mediated process, in which the complexity of copyright is completely hidden from the individual user, as it always has been in the past.

Why “The Answer to the Machine is in the Machine”?

The name of the project is drawn from the word of [Charles Clark](#) (1933 – 2006), one of the late twentieth century’s foremost thinkers on and shapers of copyright. Charles recognised at a very early point that digital developments – particularly the internet – would completely change the way in which copyright needs to be administered and that the answer to the machine is indeed in the machine (a statement he is believed to have first uttered during the negotiations leading to the 1996 WIPO copyright treaty). His now famous aphorism was also used as the title of a chapter that he contributed to a book published in the same year *The Future of Copyright in the Digital Environment* (ed: P. Bernt Hugenholtz).

What is the project aiming to do?

There is a window of opportunity created by the European Commission’s Big Idea for the Digital Agenda process to demonstrate the potential for automated licensing and end-to-end processing in what has effectively become a three month project. We are concentrating on two strands of work between now and the Digital Agenda Assembly:

- To build support around our idea across as broad a range of stakeholders as possible: our [Community of Interest](#) is diverse and growing – and our broader and less formal support network is even larger
- To build some technical “demonstrations” of what it might mean – for creativity and economic growth – to have a “copyright aware” internet

It is anticipated that the ideas which are demonstrated in the project can then be picked up and developed into the infrastructure that will be required.

What is the basis for the demonstrator?

The demonstrator will be based on a set of over 20 Use Cases submitted to the project, covering a highly diverse range of media (publishing, music, audio-visual, software). Three themes were identified in these Use Cases:


- The requirement to pass permissions information through the supply chain from creator to intermediary: this is needed, for example, in ebook publishing (where publishers may have markedly different requirements for different books when it comes to onward licensing) and to streamed audio-visual (where an intermediary may have limited rights to stream in particular territories or at particular times). Currently this information is typically passed through the supply chain using relatively cumbersome systems – we will aim to show how this could be automated
- The requirement to provide information to end users about what they are permitted to do with content to which they have access. The use cases submitted included, for example, open access scientific journal articles (where the precise permissions granted to a reader may vary from one paper to another), aggregated scientific data sets (where different permissions may apply to different parts of the same aggregated content), and software (where the precise terms of licences applying to a particular implementation may be very hard to ascertain, particular if the licence itself has changed)
- The requirement to create rights clearance and (where appropriate) payment systems that allow users to acquire permissions to use online content which are otherwise not available to them; a good example of this is User Generated Content – individual users may want to licence permission to use others’ content but may equally wish to licence their own content to others

Can’t all this be done already?

There are many individual instances where each of these ideas is already being implemented. Some embedded permissions information is passed through supply chains. [Creative Commons](#) is a good example of how

permissions information can be made available to end users. There are a number of services offering online clearance for permissions which go beyond those that a user has acquired through a standard licence. Our aim is to make these more universal and – critically – based on open standards which do not dictate a particular commercial implementation.

Where are standards needed?

Many of the standards we need already exist – ways of identifying content, ways of describing and communicating about rights and permissions. However, these are not widely implemented, and are often poorly integrated. Our key “integrating principle” is the invention of a new symbol: the digital copyright symbol:  This symbol – both human and machine readable – is used to indicate that the content with which is associated is covered by copyright and has permissions associated with it. By “clicking” on the symbol – or through automated following of the links that lie behind it – people and machines can access services which allow them to understand what permissions are associated with the content and how to clear permissions where this is necessary. We will also be exploring what gaps exist in the standards landscape and how these gaps can be filled. Most importantly, we recognise that all the different media have to come together around a single standards framework; we cannot expect users to know or care whether the content they want to use comes from a record label, a publisher, or a movie studio – a single rights management landscape is essential. In particular we need to develop common semantics – so that we can communicate without ambiguity. Our aim is framework which is:

- Transparent
- Protective of both user and rightsholder rights (including privacy and confidentiality)
- Open standards based – non-proprietary, globally interoperable
- Cross media
- Not predicated on a single business model or a single work flow

What is the role of rights registries in your project?

Data systems depend on data – and the management of rights and permissions in this respect is no different to any other data system. Information about rights and permissions may be stored and managed in many different ways: it may be directly associated with content in particular digital file by embedding the metadata, or it may be referenced from within the file through a link to externally held data. The same set of licensing data may be referenced from with many content files – the principle demonstrated by Creative Commons – or a particular file may be governed by an individual licence. Where it is necessary to “refer out” from a file to information held elsewhere, then the concept of a rights or licence registry becomes essential. At its simplest it may simply be a repository for a small number of licences which apply to a very wide selection of content. At its most complex it may be a highly complex central registry like the [Global Repertoire Database](#) which is currently being developed for the management of rights information by the music publishing industry. In between there is room for myriad different models of data management, from individual large organisations establishing their own registries through commercial and community efforts on behalf of smaller organisations and individuals for whom solo data management is not a realistic option. However, participation in online markets requires data.

How does this impact on copyright law?

The Berne Convention makes it clear that no formalities ought to apply to creation of copyrights. Copyright exists in a creation – provided it passes the necessary hurdles of creativity and a “fixed” expression – without registration and without any need to attach the © copyright symbol. Nothing proposed in The Answer to the Machine is in the Machine in any way alters this. There is no requirement to register – let alone to register in a

central database – to claim a copyright. However, as we have already underlined, participation in online markets requires data. The rightsholder is free to choose – which is the essence of copyright law.

Who is building the demonstrator?

The technical partner for The Answer to the Machine is in the Machine is [CNRI](#) (Corporation for National Research Initiatives) based in Reston Virginia (USA). Among other features, CNRI's Handle System allows for "multiple resolution" of a single internet link (so what is returned from the link can be determined by the context of the request). This technology is widely used in the identification of online content, through implementations of the [Digital Object Identifier](#) (or DOI), including [DataCite](#) (for the identification of research information) [CrossRef](#) (for the identification of academic publications, particularly journals) and [EIDR](#) (for the identification of movie and television assets). But this technology is not a prerequisite for the project: we selected CNRI to build the demonstrator not because we believe that the management of copyright online is dependent on a particular identification or resolution mechanism (although identity is a key element of the requirement). Rather we chose CNRI because of their knowledge and understanding of the space in which we are working, and their existing working models of elements essential to making the system work.

What is the anticipated outcome of the project?

Our intention is to use the project to raise awareness of the potential for automating and standardising rights management on the internet. This awareness raising is essential among all stakeholder groups: creators and media businesses; intermediaries and technology companies; rights users (all of us); regulators and legislators. We are not building a one-size fits all solution or platform; but rather we are pointing the way.

Do you have a particular future rights and permissions architecture in mind?

No. Our aim is to create an open standards framework in which many different business models and institutional architectures are enabled rather than mandated. The market should be allowed to take care of the process through which the standards framework is implemented.

What are you expecting from legislators and regulators?

Above all, we are asking for their support and facilitation in moving this "big idea" to reality. A crucial role for them is bringing to the table the key players needed to build the communications infrastructure and to apply and integrate the necessary standards. We see a standards-based integrated infrastructure as a key element of policy to encourage growth and creativity in the copyright industries to the benefit of society as a whole. However, there will be those who whether ideologically or for commercial reasons oppose the application of fully functioning rights management and licensing systems online following two decades of wide scale re-use of copyright content without permission or remuneration of the rightsholders. We will need help at government level if we are to succeed in overcoming the inertia inevitable in a system that has grown up over two decades outside the normal permissions-based rights trading supported by copyright.

Who will be the winners and who the losers?

We do not see this as a zero-sum game. The primary winners should be society as a whole, through the re-establishment of copyright as the driver of economic growth – and of creativity – in all sectors of the media. To the extent that there will be losers, these will be businesses which have established themselves on the internet through parasitism on other peoples creativity and investment. There is plenty of opportunity for the development of legitimate new businesses on the network without unfair competition from those who choose to appropriate content rather than licence it properly. All users of copyright material will benefit from the availability of services to provide them with the licences they need – and the reassurance of the certainty that what they are doing is legal.