Digital Contracts
The new Economy
Disruptor

The Compromise

DRM Perspectives

Business
Social
Technical
Legal

Direction
Whoops! (Adobe)

Permissions on: Through the Looking-Glass

Copy
You are permitted to copy 10 text selections every 5 days.
You have copied 0 text selections over the last 5 days.

Print
You are permitted to print 10 pages every 5 days.
You have printed 0 pages over the last 5 days.

Lend
This book can be lent.

Give
This book can be given.

Read Aloud
Book cannot be read aloud

Info

Table: Permissions

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<th>Options</th>
<th>Compatibility: Acrobat 7.0 and later</th>
<th>Encryption Level: 128-bit AES</th>
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<td>None</td>
<td></td>
</tr>
<tr>
<td>Changes Allowed:</td>
<td>None</td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Enable text access for screen reader devices for the visually impaired</td>
<td></td>
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</tbody>
</table>

REL Patent: http://www.indicare.org/tiki-read_article.php?articleId=90

History of Rights Expression

Rights Expression Languages (REL) - Circa 2000
- XrML (ContentGuard)
- ODRL Initiative (Open group)

Standardisation
- MPEG-21 (Part 5/6)
- IEEE/IMS Learning Content
- OASIS
eBook Forum
- OMA
- Editeur ONIX Books
- PRISM
- PLUS Photo
- Creative Commons (ccREL)

Patent Wars
- MPEG Licensing Authority
- Content Management License Administrator (OMA)
REL Patent: http://www.indicare.org/tiki-read_article.php?articleId=90
Open Digital Rights Language

W3C Permissions & Obligation Expression (POE) Working Group
https://www.w3.org/2016/poe/
Defines a semantic data model for expressing permissions and obligations statements for digital content, and to define the technical elements to make it deployable across browsers and content systems

Working Drafts
- ODRL Information Model
- ODRL Vocabulary and Expression
  - XML, JSON, RDF/OWL Ontology

New Use Cases
- Rights Bundles, Complex Relations, Assets Completations…

ODRL targeted as a standard contract expression language
Not enforcement

ODRL Information Model
ODRL Vocabulary

Current DRM Market

Microsoft PlayReady
Google Widevine Modular
OMA
Adobe Primetime
Marlin
Apple FairPlay
Did the big deals with Music companies
They owned the eco-system
All Proprietary
W3C HTML5 EME

Encrypted Media Extensions
W3C Candidate Recommendation
http://www.w3.org/TR/encrypted-media/

A JavaScript API that provides a method to interact with Content Decryption Modules for utilising DRM in web browsers

Enables encrypted video playback directly in HTML5 using the `<video>` tag without the need for additional third party plugins (eg Silverlight, Flash)

EME allows the same encrypted videos to be played in any compliant browser regardless of the DRM system used
The BlockChain

The BlockChain is a “Distributed Ledger”

Each block has

- Header includes some technical information about the block, a reference to the previous block, and a fingerprint (hash) of the data in this block
- The contents of the block, for example the transactions

If the fingerprints are consistent with the data, and the fingerprints join up in a chain, then you can be sure that the blockchain is internally consistent

The BlockChain is immutable (can not be changed) - only added to

https://bitsonblocks.net/2015/09/09/a-gentle-introduction-to-blockchain-technology/
BlockChain Uses

Verification

Licenses, proofs of records, transactions, processes, or events. Did this event take place? Was this service performed on this piece of equipment? Does this person have the right permit?

Movement of Assets

Transferring money from one person/entity to another. Enabling direct payments, once a work condition has been performed.

Ownership

Land registries, property titles, and any type of real estate ownership. The blockchain is a perfect keeper of the chain of custody for any physical asset.

Identities

Government, cities should issue blockchain e-identities to its citizens, enabling them to securely use services like voting. An e-identity could become similar to a passport, allowing its holder access to a variety of services and rights.

Source: https://extranewsfeed.com (William Mougayar) 2016
BlockChain+Music

Back-of-house Music Industry is complex & antiquated
Rightsholders, Intermediaries, Royalties, Collection Orgs, Licensing…

System delivers value for owners of the process by which they transact

Blockchain can provide transparency and immediacy on all transactions (and efficiency)

New Music companies using BlockChain

Music Disruption

BACKSTREET BOYS SUE FORMER MANAGER — AGAIN

SUIT MAKES A NUMBER OF CLAIMS AGAINST LOU PEARLMAN.

JENNIFER VINEYARD
11/01/2005

The battle of Backstreet still isn’t over: A new round has begun with the group filing another lawsuit against Lou Pearlman, the manager/Svengali who created them.

How Blockchain Startups Are Disrupting The $15 Billion Music Industry

Shouldn’t it be possible in a digital world for the royalties to come directly to you, instead of through a slow, inefficient, and opaque chain of collection societies and publishing administrators?

Forbes
Dot Blockchain Music Project

New music codec containing a Minimum Viable Data Set that would create a globally distributed database of music rights

http://dotblockchainmusic.com

Codec is a wrapper: Metadata (+rights) + Media

DotBC Project Scope

- Make sure the media and metadata are packaged together and never separated
- Start with available data & media and build up bundle as linkages are established
- Check against known data sources to improve data quality and reduce fraud
- Put an immutable record of activities in distributed ledgers for transparency

DotBC Concept

- ZIP File
  - Manifest
    - What is included
    - How to look up additional details in blockchain/cloud
    - How to report activities that trigger payments
  - Signed Bundles (3)
    1. MUSIC BUNDLE (WITH SAMPLES)
    2. VIDEO BUNDLE (STREAMS)
    3. VR BUNDLE

- JSON-LD Graph
  - Activities or "Obligations"
    - Full Play
    - Partial Play
    - Replay
    - Share
    - etc.
  - Licenses or "Permissions"
    - VR to Music Bundle
    - VR to Video Bundle
    - Music Bundle to Sample

- Smart Contracts
  - Contract 1
    - Viewer Deal
    - Sponsor Deal
  - Contract 2
    - VR Deal (Bundler)
  - Contract 3.4.5
    - Music deal
    - Video deal
    - Sample deal

- Payment Accounts
  - Payee(s)
    - MUSICIAN
    - VIDEOPHOTOGRAPHER
    - VR ARTIST
    - SOUND DESIGNER
  - Payee(s)
    - VIEWER
    - SPONSOR
  - Payment Accounts
    - Traditional Banking or Bitcoin

https://monegraph.com/m6788760298
This particular document represents a CONTRACT DOCUMENT. This document is registered with the Bitcoin address 14HsTjW0KAnBEaVoC4NFLDbGf4fU4Use.

This contract grants the following rights:

Title Amendment
The right to amend the title.
rightbase 174bM0JobPwzU2uBiK6aGQmgq24YFuUK

Transfer Sublicense
The right to transfer the "Sublicense" right to another entity.
rightbase 1FASweduFHrY7YbZ5C5S9NedqZL21e1

Transfer Remix
The right to transfer the "Remix" right to another entity.
rightbase 1665s6fWAXK2WY95we2eK2PbleYQffnU

Remix
You have the right to create a derivative work using this media as source material.
rightbase 12Q56dFv4hOY77w5mO5c4ybQQUtL

Recall
You can sell this work to another person, transferring all relevant rights to them.
rightbase 1G1R23EBFzweGSpTHuAekw249NYfLA

Use
The right to use a work based on the classification of the work.
rightbase 1CQS4wYaBb6S6bX56m7WbC39wSsn9Q

Ownership Title
The title of the work.
rightbase 136RIsolJBPcfrwMN5NshsA489m3sYHc

Sublicense
The right to sublicense the work.
rightbase 1NHHdCspT14H5K8a7A76BqpmYm7qY

Title Amendment
The right to amend the title.
rightbase 174bM0JobPwzU2uBiK6aGQmgq24YFuUK

Transfer Sublicense
The right to transfer the "Sublicense" right to another entity.
rightbase 1FASweduFHrY7YbZ5C5S9NedqZL21e1

Transfer Remix
The right to transfer the "Remix" right to another entity.
rightbase 1665s6fWAXK2WY95we2eK2PbleYQffnU

Remix
You have the right to create a derivative work using this media as source material.
rightbase 12Q56dFv4hOY77w5mO5c4ybQQUtL

Recall
You can sell this work to another person, transferring all relevant rights to them.
rightbase 1G1R23EBFzweGSpTHuAekw249NYfLA

Use
The right to use a work based on the classification of the work.
rightbase 1CQS4wYaBb6S6bX56m7WbC39wSsn9Q

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The title of the work.
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The right to sublicense the work.
rightbase 1NHHdCspT14H5K8a7A76BqpmYm7qY
In the context of blockchains and cryptocurrencies, smart contracts are:

- Pre-written logic (computer code)
- Stored and replicated on a distributed storage platform
- Executed/run by a network of computers
- Can result in ledger updates (e.g., payments, etc)

They are small programs that execute on specific events.

Blockchains
- Distributed trustworthy storage

Smart contract
- Distributed trustworthy calculations

https://bitsonblocks.net/2016/02/01/a-gentle-introduction-to-smart-contracts/

Barclay’s Smart Contract Templates

Reproduced with permission of ISDA
Blockchain 'smart contracts' to disrupt lawyers

Commercial lawyers are watching the arrival of Ethereum closely given the potential for smart contracts in the future to disintermediate their highly lucrative role in drafting and exchanging paper contracts. Smart contracts are currently being used to digitise business rules, but may soon move to codify legal agreements.

"Now is the time for agreements to be transferred to digital era," he says. "What the internet has done for information, blockchain will do for value. It will remove the friction and frustration in the current system of networks and build a new trust system."
But…

Blockchain Company's Smart Contracts Were Dumb

We talked this morning about a hack at the DAO, the Distributed Autonomous Organization that lives on the Ethereum blockchain and has millions of dollars of investment in it. The descriptions didn’t matter; only the code did. The descriptions didn’t allow for today’s hack, but the code did. (By definition! If the code could be hacked, the code allowed for the hack.) Any vulnerabilities in the DAO’s code were not flaws in the code; they were flaws in the descriptions -- which were purely for entertainment purposes. The DAO’s websites failed to explain to investors that the code allowed a hacker to take $60 million by using a "recursive splitting function." But the recursive splitting function itself is part of the DAO’s code, and therefore part of the DAO. Using it isn’t a "hack," and using it to take money isn’t a "theft"; it is just using the DAO as intended. Where the only measure of intent is what is allowed by the "immutable, unstoppable, and irrefutable" code.

“Code is Law”

Bug is Law!

Smart Contract - Computational
eg Payments

ODRL Contract - Logical
Policy Semantics
The Disruption Compromise

Digital Rights to Manage?

Digital Contracts are evolving fast... Disruption is inevitable...

Questions?