Let’s create a

“Centre for Decentralised Law”

Collaborative Codification of Legal Documents

CommonAccord.org

OpenTrustFabric.org

Northwestern – Framing Big Legal Issues

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Centre for Decentralised Law:

- A small organization:
  - Curating, moderating, managing **legal document sources**
  - NFP
  - Global but thin, coordinating with similar national, local and domain-specific organizations
- Based in civil society, with connections to business and legal organizations, and indirectly to governments
- Promoting open, inclusive, efficient, human-based self-determination (A2J, rule-of-law, law-of-the-parties, society-in-the-loop)
- Linux|Apache Foundation-like, but for law. A web-enabled ALI/ELI/UNIDROIT

Why?

- Law is important
  - But very inefficient.
- Documents are the medium of law
  - Improving the efficiency of documents will improve both the efficiency **and the substance** of law.
- The vast global ecosystem of people who rely on law should be able to participate in shaping their own solutions, incorporating their preferences and institutions, in their languages, in a medium they know (words).

A vision of long-standing:

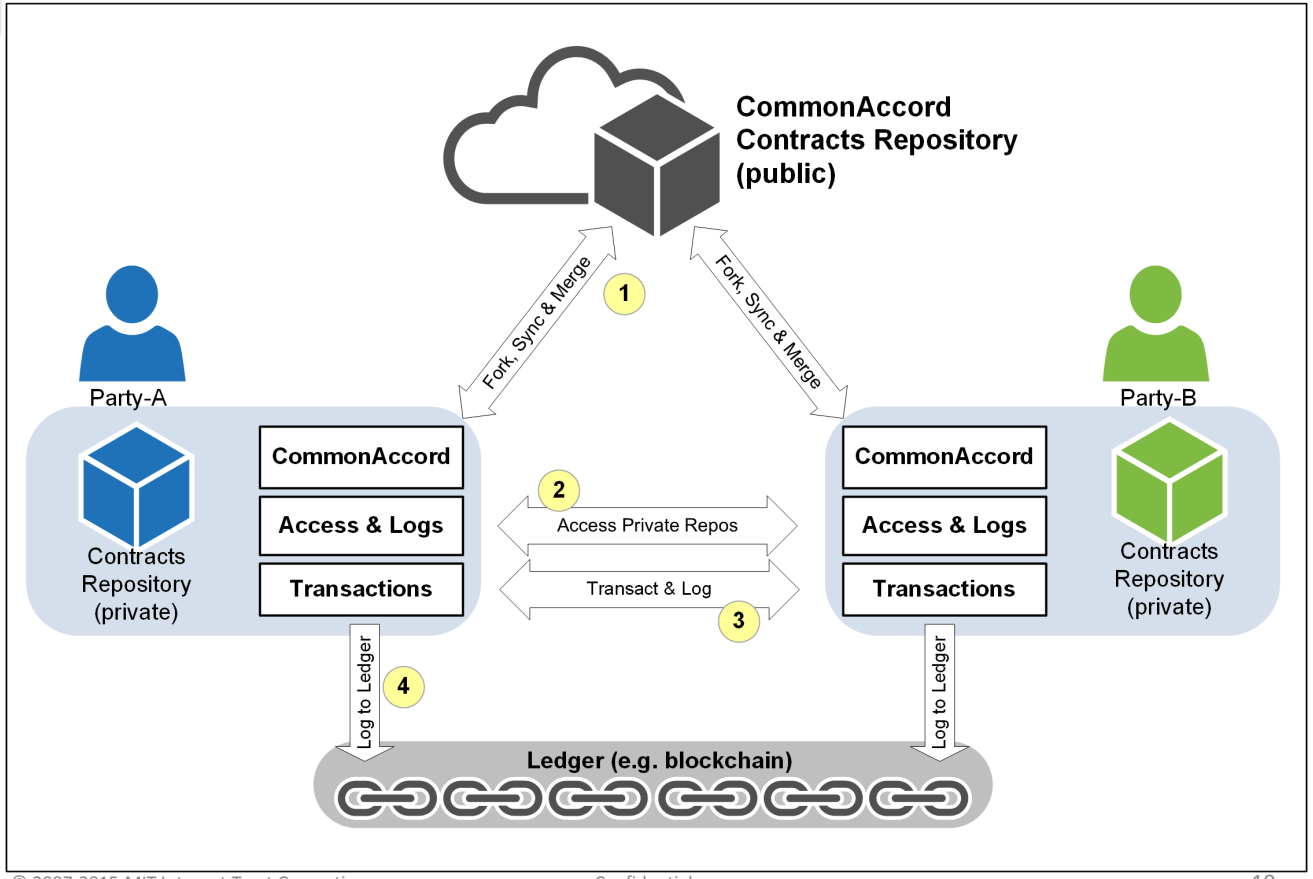
- From an email in 2000:
  - …. I thought you might be interested in a site I am creating to advance what I am calling “open contracting.” The concept is described in detail on the site, but in summary, CommonAccord will host agreements and contract components written for incorporation by reference. The terms on the site will be given recognizable URLs for parties to incorporate by reference into their paper or electronic contracts.
    - **By itself, online-referencing addresses part of the "re-reading problem" of contracting - since the online parts are not copied, they don't have to [be] checked and rechecked. I think this should make it attractive in negotiated transactions.**
    - **But the more interesting possibilities of open contracting should come from collaboration. Associations, trade groups, lawyers (including even academics?) and members of the public can recommend terms and push for wide acceptance.**
- At an ALI exploratory meeting in San Francisco around that time:
  - “For example, at our initial discussion of international intellectual property, Geoff suggested that the Institute might consider developing alternative terms of an intellectual property license, in a format that could identify reasonable ranges and negotiating options while alerting lawyers to avoid time-wasting outliers.”
    - Michael Traynor, in memorium for Geoffrey Hazard http://www.hastingslawjournal.org/wp-content/uploads/70.4-Full-Issue.pdf page 1138.
- 2020 – same vision, but now we see a bit further

Deepening the vision:

Where is my data? API-based, secure personal data management

MIT Connection Science DRAFT
the technology of innovation

CommonAccord Exchange Network



https://hardjono.mit.edu/sites/default/files/documents/CommonAccord_Provenance_11182015.pdf
https://www.w3.org/2016/04/blockchain-workshop/interest/hazard-hardjono.html

Broadening the vision; who else is involved?

"Modelling the EU Economy as an Ecosystem of Contracts"

EU Commission
OpenTrustFabric.org

Modelling the European Economy as an Ecosystem of Contracts for Smart Policy Making

No Ref. JUST/2018/RCON/PR/JU03/0118

Luigi Telesca, James Hazard

Introduction

In a world dominated by internet/technology giants, the challenge for the European Commission and other policy and regulatory bodies in the world is mostly related to the inconsistency of current economic indicators in supporting the legislative activities in many different policy areas. Economic measurement approaches, and in particular Gross Domestic Product (GDP), with the evolution of today's economies (from industrial to services to information to network), struggles to account for today's intangible assets-services, insights, and networks.

Approach

In order to understand the feasibility of a different modelling approach we analysed three core dimensions:

MAIN FEATURES OF ICT (INTERNET)

- Facilitate ubiquitous acquisition, aggregation and processing of large amounts of data.
- Support Network Effects (Supply and Demand):
- Enable new service delivery and business models based on network effects, since firms "invert" production from inside the company to outside it.

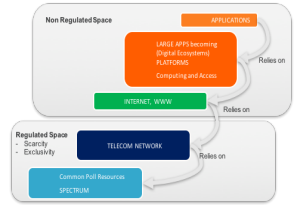


Figure 1: The new internet stack

DATA SOURCES AND COLLECTION METHODS

- Peer to peer data access via programmable interfaces (APIs).
- Aggregation and availability of data facilitate ecosystem analysis as complex adaptive systems and create new analytics.

CONTRACT AS A BOUNDARY OBJECT

Contracts are becoming boundary objects between domains and offer a rich modelling framework to cluster and analyse transactional data and events and extract expectations and intangible "meaning" from peer-to-peer relations.

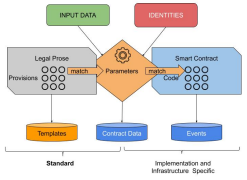


Figure 2: Contracts mastering data, identities and relations

Contract as a graph

FROM LEGAL PROSE TO COMPUTABLE CONTRACTS

A Prose Object model permits all "concepts" relevant to contracting to be expressed as objects in a graph. The most important concepts in contracts include **i) persons** - the parties to the contract and other relevant persons, **ii)** the **documents** themselves and their components, **iii)** relevant **places** and **iv) properties** that can be the subject of contracts, for instance, tangible and intangible goods (e.g. IP rights), real estate and related rights and last but not least, iv) data sources, (coming from sensors, GIS and logistic platforms, ticketing and project management systems, third-party software), connected to performance metrics that can feed the ERPs and accounting systems of companies.

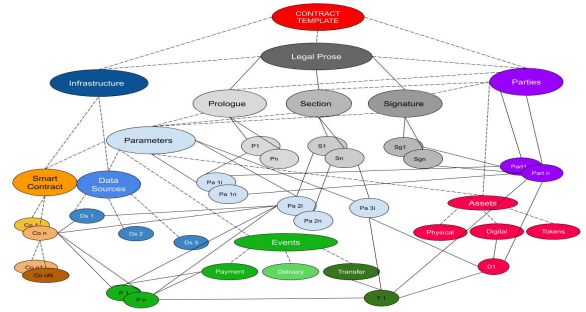


Figure 3: Contract as a graph

A UNIFIED APPROCH

Together with the Prose Object model we defined a distributed contract architecture framework called Open Trust Fabric, based on Distributed Ledger Technologies and Smart Contracts on Ethereum to execute the Prose Object model and to execute and collect event and transactions coming from actors in a defined ecosystem.

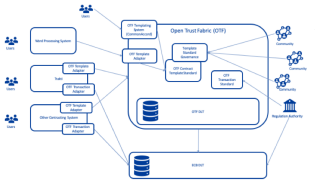


Figure 4: The Open Trust Fabric architecture for ecosystem monitoring

The smart contract and transactions in the blockchain allow us to model, analyse and visualise data of the ecosystem.

Figure 5: EU Contract visualization with Linkurious

In the graph we can identify:

A. Nodes: Actors and only actors (or actors and actants as in Actor-Network Theory).

B. Edges: Contracts (and anything related, e.g. transactions).

C. Edge weight: Intensity of transactions (e.g., money exchanged).

D. Edge direction: the type or relation and information flow (symmetrical, asymmetrical, indirect, direct)

Results

Digitalisation of contracts, data availability and aggregation, self-enforcing contracts and blockchain are giving us the tools to model and analyse the EU economy as a complex adaptive system of interconnected agents. The Open Trust Fabric with Prose Objects and the use of Smart Contracts and blockchain offered us a complete framework for testing and experimenting with our exploratory research.

Conclusion

With our work, we demonstrate how an innovative approach can be used both for reporting the European economy as an ecosystem of contracts and as an actual way to describe the connection between the legal and accounting world, basically a boundary object between the two worlds. It is radically more efficient and has the ability to provide precise, qualitative and quantitative measures of contracting across the entire European economy connecting relationships, data, legal and economic frameworks.

References

1. Coase, R. H. (1937), The Nature of the Firm. Economica.
2. Hart, O. (2017). Incomplete Contracts and Control, American Economic Review
3. Hart, O., and Holmström, B. (2010). A Theory of Firm Scope.
4. Shapiro, C. and Varian H.R, (1998). Information Rules. Harvard Business School Press.

European Commission Study
No Ref. JUST/2018/RCON/PR/JU03/0118
Study Provider: **Exrade Srl**

Intellectual Adjacents:

Contracts, Codes and Economics

Embracing doubt:

- Coase – “contract” inefficiency results in gigantism
- Hart & Holmstrom’s contract “incompleteness”
- Stuart Russell’s “human compatible” goals for AI
- Rumsfeld’s overlooked fourth quadrant
- Lawyers’ daily experience

The problems of codification:

- Codifiers:
  - are insiders
  - have limited information
  - have interests
  - make assumptions and mistakes
- Codes:
  - are necessarily reductive
  - are homogenizing
  - remain largely static

Experience for machines and people:

- Data – Amazon, Tesla, et al.
- Lawyerly - Holmes

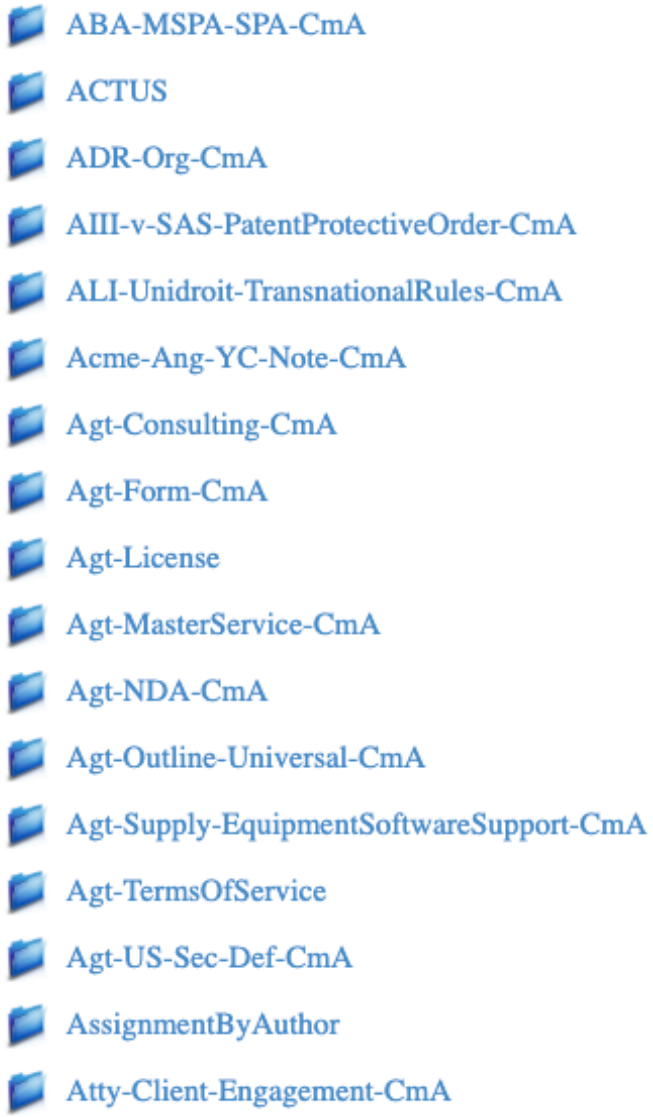
A system of transacting and governance must be locked “open”

- to others
- to improvement
- to variation
- to experience

Nuts and bolts:

What can be expressed in Source?

- Model forms
- Model clauses
- Term Sheets
- Negotiation drafts 1-N
- Orders, shipments, payments, protests, resolutions
- Permits, litigation, even laws and regulations
- Portfolios of the above (recursively)



More bolts:

What does a clause in “Source” look like?

/Docs/G/ABA-MSPA-SPA-CmA/Sec/Sale/Shares/**0.md**

Document views: **Document** Xray Visual Cicero Print Source views: Source OpenParameters JSON(ish)

On GitHub: File ~PageRank (rare: 'ShowMe' 1)

—

Ti	Shares
sec	Subject to the terms and conditions of {_this_Agreement}, and in reliance upon the representations, warranties, and covenants contained in {_this_Agreement}, at the {_Closing}, {_Buyer} shall purchase the {_Shares} from {_Sellers}, and {_Sellers} shall sell and transfer the {_Shares} to {_Buyer}, free and clear of any {_Encumbrance}.

Nuts and bolts connecting:

In Source, a deal looks like deal points:

ocs/G/Acme-Ang-YC-Note-CmA/**50k-TermSheet.md**

nent views: **Document** Xray Visual Cicero Print Source views: Source OpenParameters JSO

GitHub: File ~PageRank (rare: 'ShowMe' 1)

Note	These are the terms of the Note. The Note is instantiated in all of the four forms of the SAFE - Cap, Discount, Cap_Discount and MFN.
Amount.$	$50,000
Funded.YMD	September 27, 2015
ValuationCap.$	$2,000,000
Discount.%	8%
Company.	[G/U/Who/acme_incorporated.md]
Company.xSignature	xA-Altima-95M3ncQz9r
Company.Sign.YMD	September 28, 2015
Investor.	[G/U/Who/andrea_ang.md]
Investor.xSignature	xA-Ang-w4lDIn925u

Nuts and bolts connected:

Source renders into full documents:

/Docs/G/Acme-Ang-YC-Note-CmA/**Cap_Discount.md**
Document views: **Document** Xray Visual Cicero Print Source views: Source OpenParameters JSON(ish) On GitHub: File ~Pag
(rare: 'ShowMe' 1)

THIS INSTRUMENT AND ANY SECURITIES ISSUABLE PURSUANT HERETO HAVE NOT BEEN REGISTERED UNDER
SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), or under the securities laws of certain states. These secu
may not be offered, sold or otherwise transferred, pledged or hypothecated except as permitted under the act and applicable state secu
laws pursuant to an effective registration statement or an exemption therefrom.

Acme Incorporated

SAFE (Simple Agreement for Future Equity)

THIS CERTIFIES THAT in exchange for the payment by Andrea Ang (the "Investor") of $50,000 (the "Purchase Amount") on or abo
September 27, 2015, Acme Incorporated, a United States of America Corporation whose business address is 75 State Street, Boston, M
02109 (the "Company"), hereby issues to the Investor the right to certain shares of the Company's capital stock, subject to the terms se
below.

The "Valuation Cap" is $2,000,000.

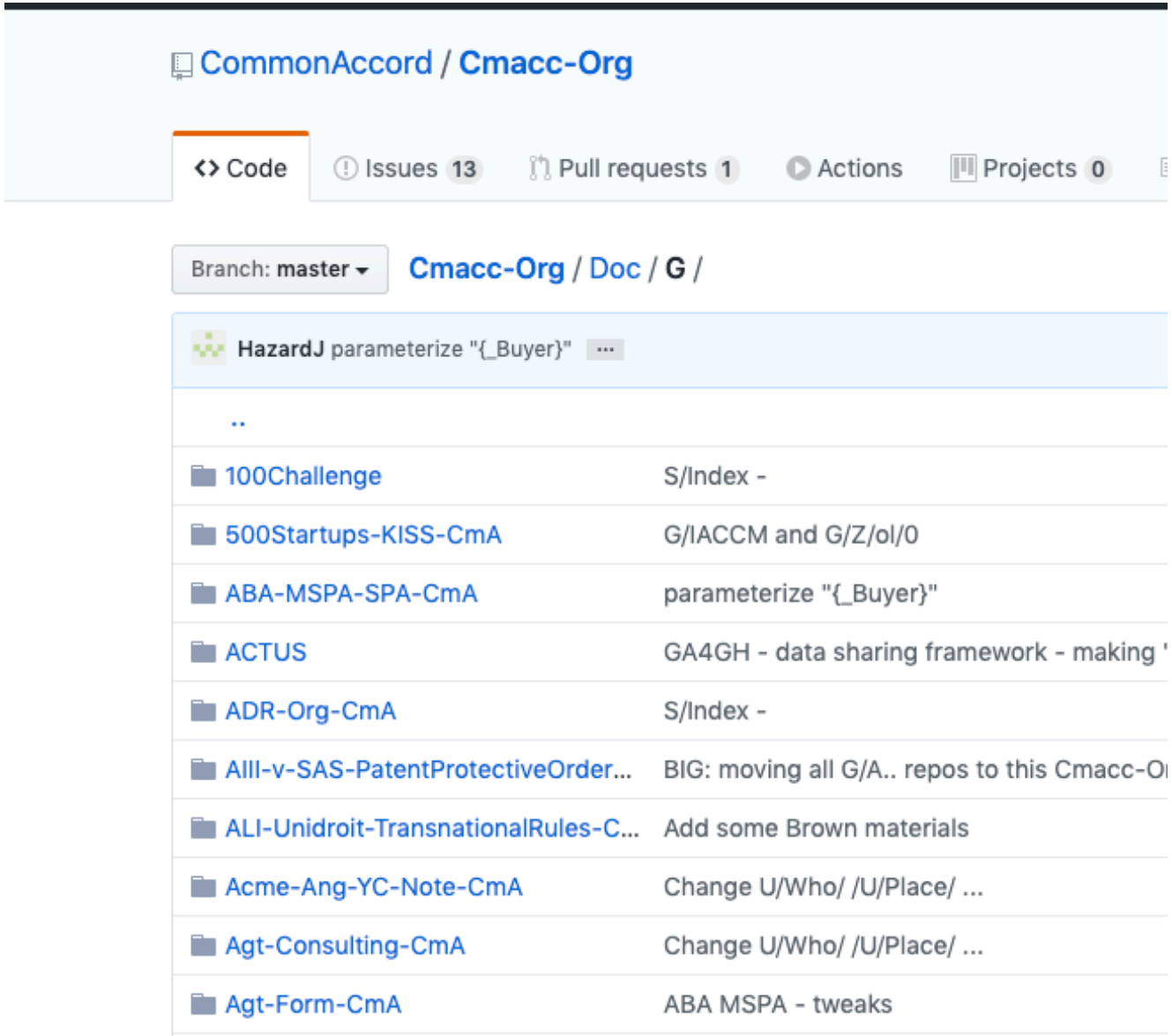
The "Discount Rate" is 8%.

See Section 2 for certain additional defined terms.

1. **Events**
    1. **Equity Financing**
        1. If there is an Equity Financing before the expiration or termination of this instrument, the Company will automatica
        issue to the Investor a number of shares of Safe Preferred Stock equal to the Purchase Amount divided by the Conv
        Price.
        2. In connection with the issuance of Safe Preferred Stock by the Company to the Investor pursuant to this Section 1:
            1. The Investor will execute and deliver to the Company all transaction documents related to the Equity Financi
            provided, that such documents are the same documents to be entered into with the purchasers of Standard Pre
            Stock, with appropriate variations for the Safe Preferred Stock if applicable, and provided further, that such
            documents have customary exceptions to any drag-along applicable to the Investor, including, without limita
            limited representations and warranties and limited liability and indemnification obligations on the part of the
            Investor; and
            2. The Investor and the Company will execute a Pro Rata Rights Agreement, unless the Investor is already inclu
            such rights in the transaction documents related to the Equity Financing.
    2. **Liquidity Event**
        1. If there is a Liquidity Event before the expiration or termination of this instrument, the Investor will, at its option, e

SKUs for Legal Nuts and Bolts: Where is the Source?

- On GitHub – and wherever you want it:
  - Local, database, CRM, blockchain, IPFS
  - At your “Data Fiduciary”



Bestiary of Transacting Tech:

How does Source fit with?

- Word and Email:
  - The universal interface to lawyers.
- Documents:
  - Assembly (e.g., DocAssemble, CooleyGo), Markdown (e.g., Microsoft AI Data Use), Forms (e.g., NVCA, ABA MSPA, FIDIC), et al.
- Standards:
  - ISO Legal Identifiers, ACTUS, XBRL, ….
- Enterprise Contract Management:
  - Use the ”knowledge graph”, or just import the templates
- Algorithms:
  - “Ricardian Contract” model (Ian Grigg, et al.)
    - Parameters, Code, Prose (“Wise Contracts”)
- Decentralized data and semantic web:
  - APIs such as User-Managed-Access, Solid
  - Data Fiduciaries – such as “banks” and “governments”
  - W3C, OWL, RDF, Inrupt, graph databases, IPFS, Interledger,blockchains, connection.mit.edu
- AI/NLP:
  - Patterns can be found in the “graph.”
  - Human choices, human goals, human compatible
- Institutions and Society-in-the-Loop
  - Governments, Data Fiduciaries, Trade and Legal Associations, Lawyers
- Design:
  - All of the above, recursively
  - People at the edge can create or adapt solutions ”permissionlessly”
  - HTML and standard web technologies for richer, clearer presentation and interactions

Verticals - some productive domains?

"Tesla strategy" of addressing the high end of the market first

- Data Use Agreements and Consents
  - Systemic problem that cannot be solved by legislation
    - GDPR-compliance, CCPA, Paris Call for Trust
    - Global Alliance for Genomics and Health
    - Chatham House, Kantara Initiative, Microsoft, ….
  - Licenses generally, including even NDAs
- M&A:
  - ABA Model Stock Purchase Agreement
  - NVCA Stock Purchase Agreement
  - Series Seed (Cooley), TechStars, Galion, etc.
- Supply chain
  - IACCM
- A2J:
  - Housing
  - Improving litigation
  - Everything

GitForLaw:

steps for legalkind?

- Case you are:
  - a lawyer, post or improve a model document
  - in-house, ask your lawyer-suppliers (and your counter-parties?!) to also provide “Source”
  - an activist, help organize a/the Centre or help interface to your organization
  - a law prof, teach using Git for Education
  - a coder, fork the work of Primavera De Filippi or the BrownU DISP
- Ping me or Dan Linna:
  - chat now
  - email commonaccord@gmail.com
  - pose an issue on GitHub github.com/commonaccord/

Some who helped:

- Northwestern – @DanLinna, @DBRodriguez5
- EU Commission – Harald Stieber
- OpenTrustFabric – Luigi Telesca @gigtel
- Berkman/Paris II – Primavera De Filippi
- Legal Design – Helena Haapio
- LaBChain (Paris) – Nadia Filali
- MIT Connection Science – Sandy Pentland, Thomas Hardjono, Dazza Greenwood
- Lun Yuen; Brown DISP
- Geoffrey C. Hazard, Jr.

Why (codify) (documents)?

- Benefits of codification:
  - Speed, cost, clarity, commentary … codification (law's oldest trick)
  - Accumulation of experience
- Why not:
  - Do everything algorithmically?
    - Text is important to law, our oldest method. Pervasive. Accessible.
    - Contract "incompleteness" (Hart & Holmstrom)
  - Focus on statutes?
    - Documents signed by parties are the operative part.
    - Capture real complexity.
    - Law of the parties.
    - Much more addressable.
- But, what about the obstacles to codification?:
  - Committee work, reductionism, top-down, one-size-fits-none
  - Incentives
    - Some like to hide their game, how can they continue to trick the unsophisticated or weak?
    - Why would I give away my hard-won expertise?

History

- Geoffrey C. Hazard, Jr.
  - Reporter for the code of judicial ethics
  - Reporter for the code of lawyers ethics
  - Director of the American Law Institute
  - Proponent of the ALI/UNIDROIT Transnational Principles of Civil Procedure
  - Until recently, at Hastings

James

- Brown U, Cornell Law
- Clerk in Oregon
- Lawyer at McDermott, Will & Emery
- Lawyer at boutique in Paris
- Solo in Paris
- Back in Berkeley

CommonAccord.org

- 1990s – wrote macros to automate my document practice
- 2000 – wrote to Prof. Lessig and some others suggesting CommonAccord, a wiki of document templates. GCH suggested to ALI working group on international intellectual property
- 2008 – figured out how to expand into full documents, host in Mediawiki (like Wikipedia)
- 2010 – *stall*-up adventure, Lun Yuen, Ludovic Dubost – recursive expansion
- 2014 – MIT/Berkman – Primavera De Filippi – recode for native GitHub, and connection with smart contracts
- 2016 – MIT Connection Science – fit with secure data management
- 2017 – “Wise Contracts” paper with Helena Haapio
- 2018 – MIT Connection Science – conference on law and automation
- 2019 – EU Commission study – “Modelling the EU Economy as an Ecosystem of Contracts” – expressing **all transacting** on templates