

Admissibility of Blockchain Evidence

Grant Autrey & Gary Marchant

The Problem:

Is Blockchain Inadmissible Hearsay?



Could Blockchain Evidence Be Inadmissible?

By [Casey C. Sullivan, Esq.](#) on [May 5, 2016 12:04 PM](#)

Blockchain technology creates a virtually incorruptible, dispersed database of all transactions in a network. It's the technology that helped make Bitcoin a (relative) success, but it's often hailed as a potentially transformative technology in finance, business, [and the law](#). There are [contracts that use the blockchain](#), for example. There may one day even be [entire government databases](#) based on blockchain technology.

But, [as James Ching recently pointed out](#), there could be a downside to all the blockchain hype. It's possible that blockchain evidence may be inadmissible hearsay.

Some jurisdictions have determined that blockchain evidence is admissible without applying Federal Rules of Evidence (FRE)

Vermont -12 V.S.A. § 1913

(a) As used in this section:

(1) "Blockchain" means a cryptographically secured, chronological, and decentralized consensus ledger or consensus database maintained via Internet, peer-to-peer network, or other interaction.

(2) "Blockchain technology" means computer software or hardware or collections of computer software or hardware, or both, that utilize or enable a blockchain.

Vermont -12 V.S.A. § 1913 (cont'd)

(b) Authentication, admissibility, and presumptions.

(1) A digital record electronically registered in a blockchain shall be self-authenticating pursuant to Vermont Rule of Evidence 902, if it is accompanied by a written declaration of a qualified person, made under oath, stating the qualification of the person to make the certification and:

(A) the date and time the record entered the blockchain;

(B) the date and time the record was received from the blockchain;

(C) that the record was maintained in the blockchain as a regular conducted activity; and

(D) that the record was made by the regularly conducted activity as a regular practice.

Vermont -12 V.S.A. § 1913 (cont'd)

(3) The following presumptions apply

(A) A fact or record verified through a valid application of blockchain technology is authentic.

(B) The date and time of the recordation of the fact or record established through such a blockchain is the date and time that the fact or record was added to the blockchain.

....

- (4) A presumption does not extend to the truthfulness, validity, or legal status of the contents of the fact or record.

China

- Hangzhou Internet Court ruled that documents authenticated with blockchain can be admitted as evidence in a copyright infringement case:
 - "The court thinks it should maintain an open and neutral stance on using blockchain to analyze individual cases. We can't exclude it just because it's a complex technology. Nor can we lower the standard just because it is tamper-proof and traceable. ... In this case, the usage of a third-party blockchain platform that is reliable without conflict of interests provides the legal ground for proving the intellectual infringement."

U.K.

- In an announcement [published](#) on August 23, the UK government revealed plans to conduct a pilot project for storing digital evidence on a blockchain.
 - The announcement was unveiled by the Head of Digital Architecture and Cyber Security at Her Majesty's Courts and Tribunals Service (HMCTS), Balaji Anbil.
- "... using blockchain in evidence management creates a foolproof audit trail that tracks custody and can prevent evidence tampering. The audit trail forms the basis of the court's record of the creation, modification, and access to digital evidence by whatever entity handled it." ([IBINEX](#))*



Foundations of Admissibility

- Is the Evidence Relevant?
 - Direct or Circumstantial
- Is the Evidence Reliable?
 - Hearsay, Non Hearsay & Hearsay Exceptions
- Is the Evidence Right?
 - Authentication, Competency, Presentation & Opinions

Authentication: New Rules for Self-Authentication

- New amendments to FRE 902 which took effect in Dec. 2017 permit self-authentication of much digital evidence
- “Rule 902. Evidence That Is Self-Authenticating
The following items of evidence are self-authenticating; they require no extrinsic evidence of authenticity in order to be admitted:
(13) Certified Records Generated by an Electronic Process or System. A record generated by an electronic process or system that produces an accurate result, as shown by a certification of a qualified person;
(14) Certified Data Copied from an Electronic Device, Storage Medium, or File. Data copied from an electronic device, storage medium, or file, if authenticated by a process of digital identification, as shown by a certification of a qualified person”

Advisory Notes to Amendments to FRE 902(12)

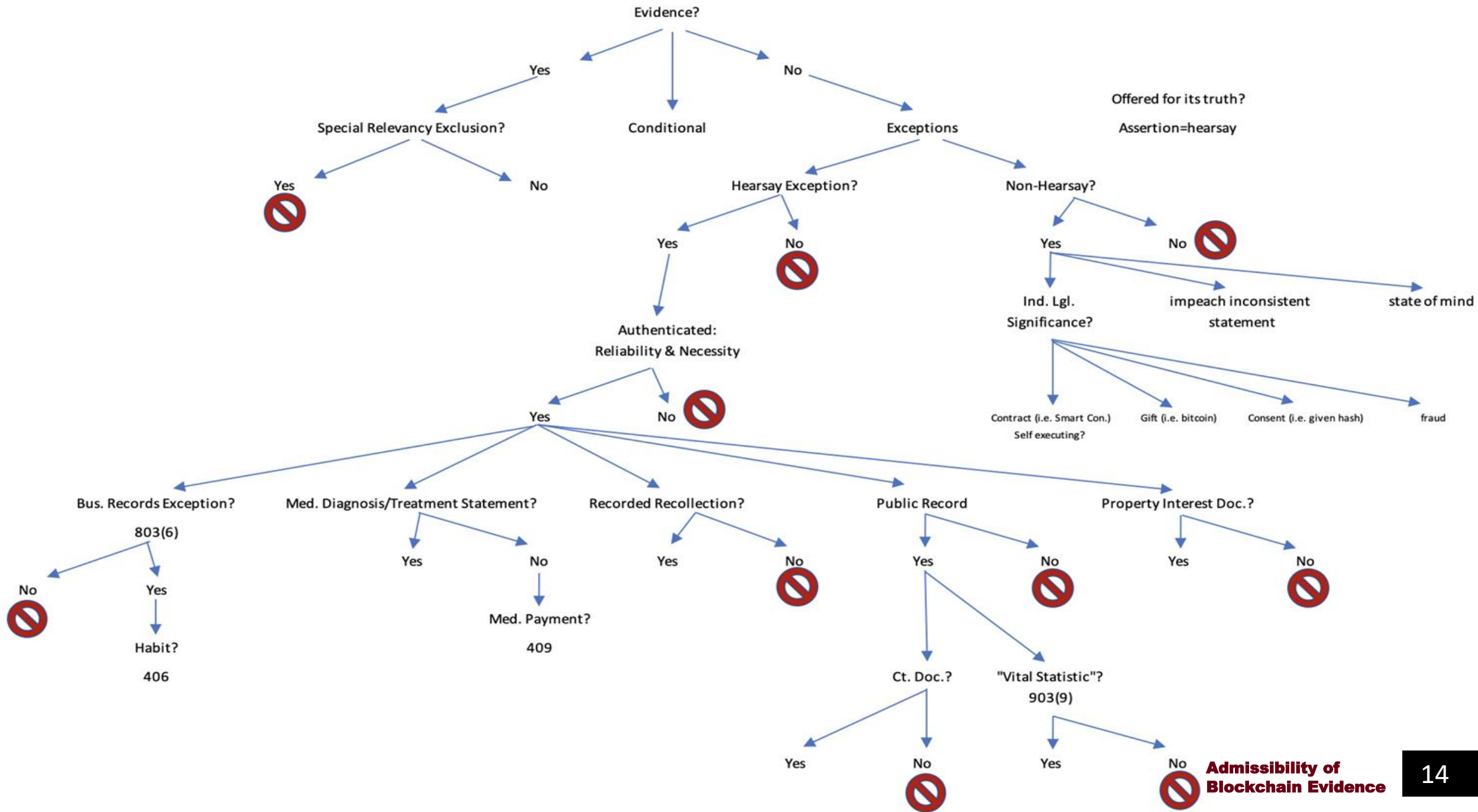
“A certification under this rule can establish only that the proffered item has satisfied the admissibility requirements for authenticity. The opponent remains free to object to the admissibility of the proffered item on other grounds—including hearsay, relevance, or in criminal cases the right to confrontation. For example, assume that a plaintiff in a defamation case offers what purports to be a printout of a webpage on which a defamatory statement was made. Plaintiff offers a certification under this Rule in which a qualified person described the process by which the webpage was retrieved. Even if that certification sufficiently establishes that the webpage is authentic, defendant remains free to object that the statement on the webpage was not placed there by the defendant. Similarly, certification authenticating a computer output, such as a spreadsheet, does not preclude an objection that the information produced is unreliable—the authentication establishes only that the output came from the computer.”

Advisory Notes to Amendments to FRE 902(13)

“Today data copied from electronic devices, storage media, and electronic files are ordinarily authenticated by ‘hash value.’ A hash value is a number that is often represented by a sequence of characters that is produced by an algorithm based upon the digital contents of a drive, medium, or file. If the hash values for the original and copy are different, then the copy is not identical to the original. If the hash values for the original and copy are the same, it is highly improbable that the original and copy are not identical. Thus, identical hash values for the original and copy attest to the fact that they are exact duplicates. This amendment allows self-authentication by a certification of a qualified person that she checked the hash value of the proffered item and that it was identical to the original. The rule is flexible enough to allow certifications through processes other than comparison of hash value, including by other reliable means of identification provided by future technology.”

Blockchain Attributes/Authentication

- Purpose of blockchain is to maintain information in a nonrepudiable, tamper-resistant and immutable manner
- With these attributes, blockchain helps to create trust in the authenticity and provenance of data
- These attributes of blockchain, unless contradicted, argue in favor of blockchain records being authenticated (but do not go to the underlying truth of the evidence – reliability)
- Proponent must provide notice to opposing side of intention to use blockchain evidence and must include certification by appropriately trained expert

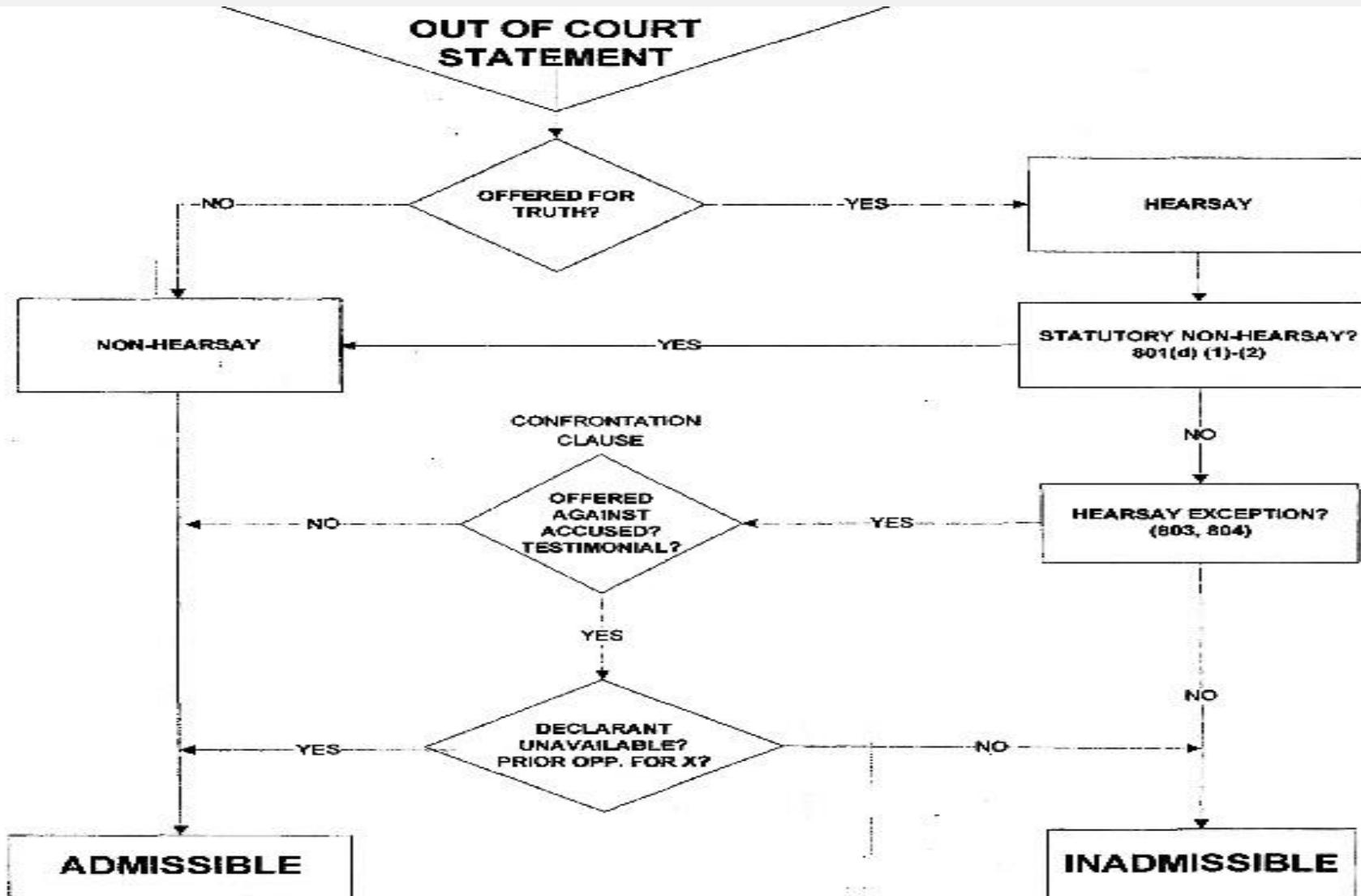


What is Hearsay?

- Is there a statement/assertion
(Oral, Written, Conduct)?
- Was the statement made out of court?
- Is the statement being introduced to prove a matter in issue at trial?

If the answer to all three questions is “Yes,”
then evidence is hearsay and presumptively
inadmissible

Foundations of Hearsay Cont.:



Why is Hearsay Evidence Generally Inadmissible?

- Human Hearsay dangers:
 - inarticulateness,
 - Insincerity
 - erroneous memory
 - faulty perceptions
- Blockchain has less “testimonial infirmities”; BUT, Blockchain hearsay dangers could be found in:
 - Bias and faults in human input and programming
 - Relayance errors (information transfer and/or inference errors by expert or paper trial bundles)

Most Blockchain Evidence = Hearsay

- Most evidence obtained from blockchains will meet the definition of hearsay
 - To be useful in court, blockchain evidence will usually be a statement or assertion introduced to prove an issue (and statement made out of court)
- Therefore, most blockchain evidence will be inadmissible hearsay UNLESS it meets a *hearsay exception*

Examples of Hearsay Exceptions:

- Business Records [FRE 803(6-7)]
- Public Records [FRE 803(8,10)]
- Recorded Recollections [FRE 803(5)]

Business Records Exception:

FRE 803(6)

- *Records of a Regularly Conducted Activity.*
- **(A)** the record was made at or near the time by or from information transmitted by someone with knowledge;
- **(B)** the record was kept in the course of a regularly conducted activity of a business, organization, occupation, or calling, whether or not for profit;
- **(C)** making the record was a regular practice of that activity;
- **(D)** all these conditions are shown by the testimony of the custodian or another qualified witness, or by a certification that complies with [Rule 902\(11\)](#) or (12) or with a statute permitting certification; and
- **(E)** neither the opponent does not show that the source of information nor the method or circumstances of preparation indicate a lack of trustworthiness.

United States v. Lizarraga-Tirado:

- Self-Authentication (Record generated by an electronic process or system)
- No Assertions = not hearsay
 - Ex: photos, snapshots in time



Best Evidence Rule:

FRE 1003: A printout of computer data is equivalent to “original” evidence.

Point of issue: If Computer data is not “human readable” by the Jury or Court is that evidence useful?

Can paper trial bundles be considered best evidence?

The Residual Exception:

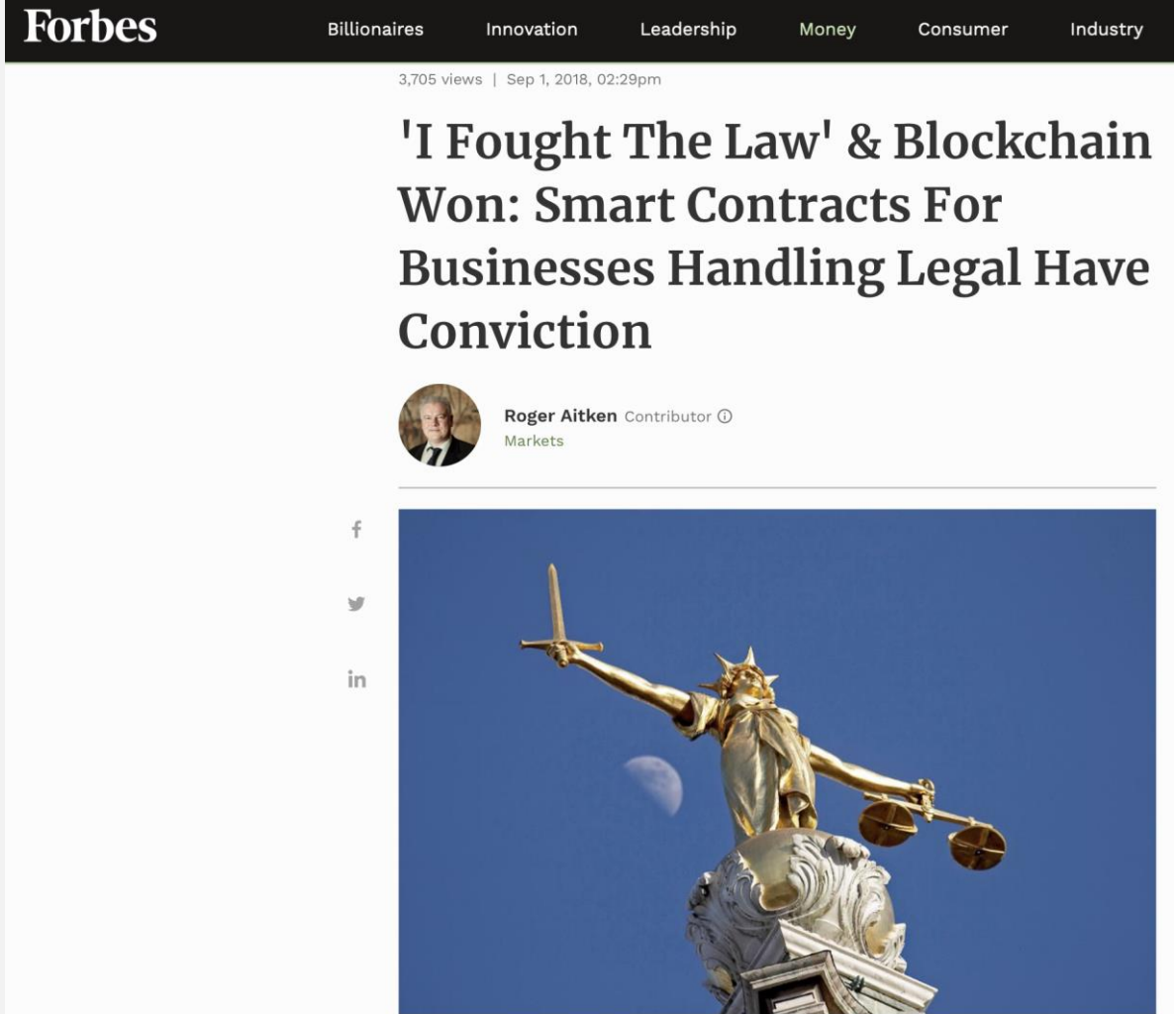
- **FRE 807(a)** This rule provides that hearsay not specifically covered by the listed exceptions in FRE 803 & 804, but has the equivalent circumstantial guarantees of trustworthiness, is not excluded as hearsay **if the court determines that:**
 - the hearsay statement is offered as evidence of a material fact;
 - the statement is more probative on the issue for which it is offered than any other evidence the party introducing the hearsay can obtain by reasonable efforts; and
 - the general purposes of the rules of evidence and the interests of justice will be served by the admission of the hearsay.

FRE 1006: Summaries to Prove Content

- everything under that summary has to be independently admissible.
- IF it is more convenient/helpful for jury to assimilate summarized info.
- Must be so "voluminous" that it can't be conveniently examined in Ct.
- Originals must be available for parties to examine at a "Reasonable time & place."
- Must show all underlying evidence is admissible. You can backdoor evidence that would otherwise be inadmissible w/in the compiled evid.
- Prime consideration= would this summary be helpful to the jury?

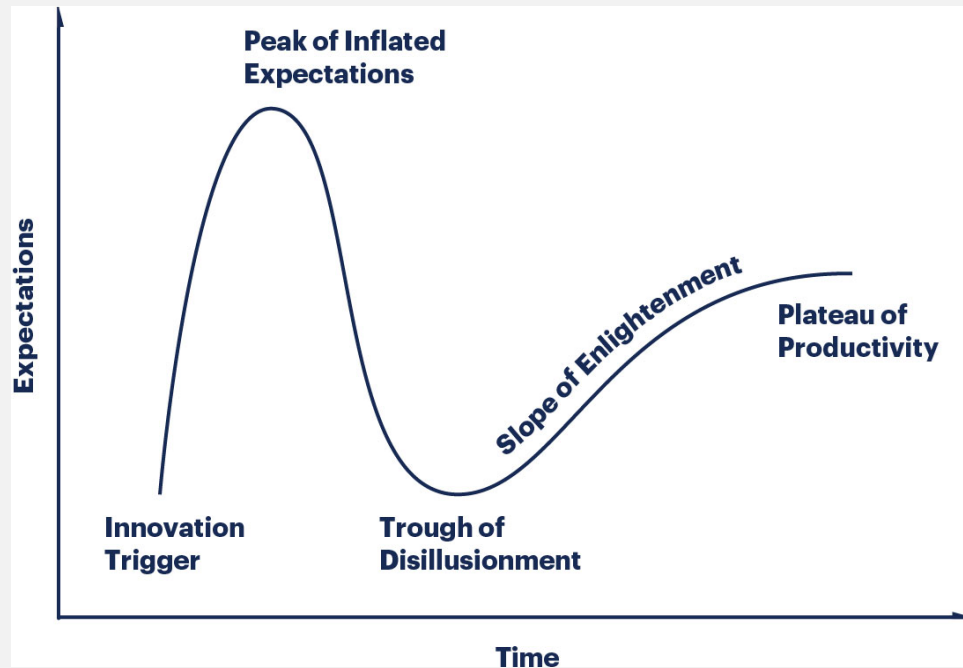
Should We Pursue the Creation of Blockchain Statutes or let time play out?

Patchwork state by state roll out,
Federal guidance, or
case by case?



Ubiquity + Confidence= Acceptance

Gartner Hype Cycle:



Maloney's 16% Rule:

