



Micha Roon
blockchain evangelist

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Using the blockchain for data storage

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Who puts data on a money transfer network?

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Most people know the technology because of Bitcoin, which is a payment system.

But other chains exist which do not focus on value. The Ethereum protocol and

the new version of the Bitcoin protocol both allow for data to be attached to

transactions

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The protocol is designed to store data. The data part is created and validated the same way as the currency part. Meaning you get a time stamp and the whole transaction is immutable.

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does it do?". Let me address that.

At this point you might think "OK, but what good

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Reasons to store data on a blockchain

Every time you need to be able to prove you knew something at a certain point in time, the blockchain comes in handy.

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Mohamed El-Erian

Here a few examples:

- Intellectual property - proof of prior art

Putting touch screens

everywhere is bringing the death of one of our senses!

Bhaskar Bhatnagar

- Plain text counter part to smart-contracts
- Proof of state: what did my property, car, lawn-mower look like before you took it

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- Bills and other documents resulting from maintenance of an object
- Notary signature as proof of document authenticity

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are only some examples, I'm sure you can come up with more ex

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from your industry and daily work. Please post those in the comments.

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The content of the document are not validated only the time and origin. The computer does not understand your data, it just stores it.

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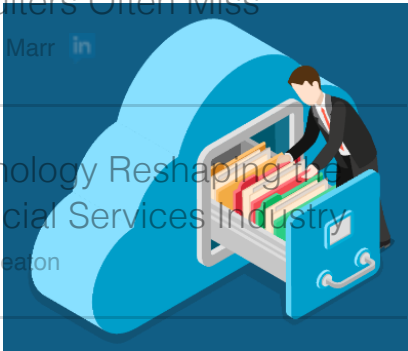
Expensive public data store

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At current prices it costs around 500\$ to store 1MB of data on the Ethereum blockchain. That is not a cost effective way to keep you data safe.

Additionally, anything you commit to a public blockchain becomes just that: public. Most of the time, this is not what you want.

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Obviously, we need a better way to store data on the blockchain. A method that would allow to store the data at a reasonable cost and not make it available to everyone. Fortunately, that is not difficult to achieve.

Store only the shadow of the document

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Every document, no matter its size, can be reduced to a quasi unique number. The process is called hashing and is a mathematical function that takes a document as its input and spits out a number as its output. For the same input it will produce the same output every time. Change a single coma in a text or a single pixel in an image or movie and the output will be completely different.

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between 0 and $5.7896045e+76$ or a 5 with 76 zeroes behind it.

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The chances that two similar documents will produce the same Hash value are nil.

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How does that help?

I have argued that you can [inherently trust the contents of a blockchain](#). By

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adding the hash of a document to a transaction you can therefore prove that you wrote that document before the transaction happened.

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All you need to do is to produce the document along with the transaction and anyone can check if it produces the same hash value.

Where should I keep the document?

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The answer to this question is, as always, it depends. If it's public information which you would like to disseminate, then [IPFS](#) or a public internet server are good choices.

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If on the other hand you want to keep your information private until you need to produce it then it is best to keep it on your local machine or in an encrypted form in a public place.

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The important thing is that the document is not altered in any way because any change, even the tiniest of changes, will produce a different hash value and thus invalidate your proof mechanism. Try it for yourself [here](#)

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Conclusion

The blockchain provides proof of knowledge in the past. In other words: every

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In the blockchain era nobody can claim to have had an idea before you. No more discussions over the time a picture has been taken or a document signed.

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If it's on the blockchain, it's the truth.

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Co-Founder at InsurTech Consulting Partners, MIT Certified FinTech professional

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Micha Roon In principle, yes. In practice, block chain runs over IP and subject to delays (time stamp issues) and current security vulnerabilities of the underlying IP networks (quite a few, I reckon). Don't you agree?

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blockchain evangelist

IP networks may not be perfect but empirical evidence shows that they work quite well for blockchain purposes. Additionally, when storing documents, time stamps are less critical as a few seconds or even minutes more or less does not make much of a difference in most cases.

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It looks very difficult to attack blockchains. Most successful attacks to date were perpetrated against servers and isolated

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impact on documents.

It might be necessary to add additional checks when verifying proof. Like time stamps of the other transactions in the block, to make sure the transaction is not post-dated. But you'd have to post-date the transaction by at least several weeks, which will get noticed during the verification process.

Let me know if I am missing the elephant in the room but I can't think of any plausible attack.

Like(2) 3 months ago

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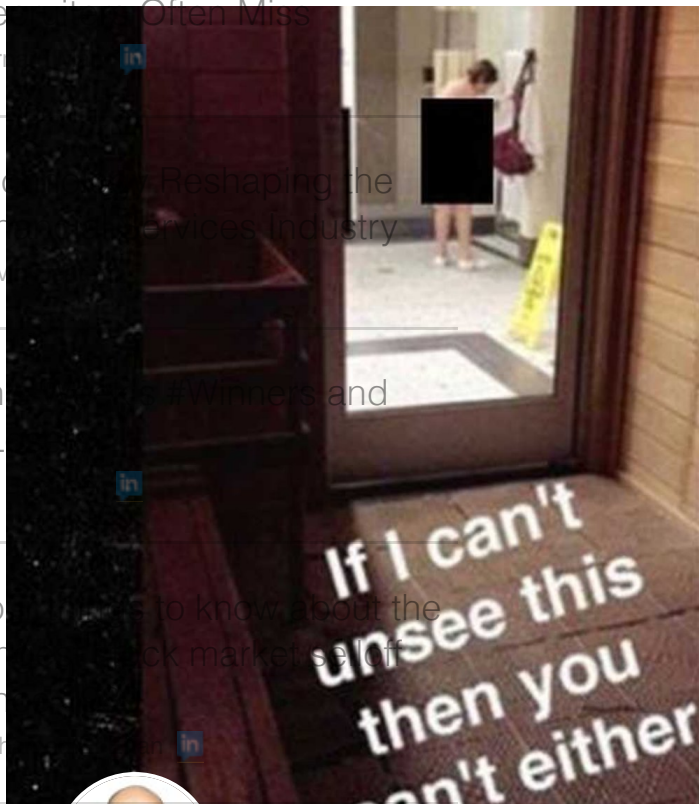
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CEO at The Palmer Group

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When the opportunity presented itself, Playboy Playmate Dani Mathers decided

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Angeles punishable by up to 6 months in jail. Those are the facts of the case, and
they are undisputed.

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When called out by @bonniereynolds, @danimathers responded, "I was sending
it to a friend & that private conversation shouldn't have happened either. It was a
true mistake and I'm sorry."

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Her apology didn't do much to help her cause. The righteous continue to call her out as a cruel body shammer. The faithful, having accepted her apology, continue to defend her and rationalize her actions. The debate rages on, and regardless of the poignancy of the missives, minds will not be changed.

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A Technologically Empowered Crime

Financial Technology and the

It might be instructive to consider that this crime could not have been committed five years ago. Snapchat didn't get funded until April 2012 and its Android app didn't launch until October of that year. While it's true that camera phones have been around since May 1999, the ability to distribute an uncensored digital image of a naked person on a global social media network is less than five years old.

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Forbidden Planet

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In 1956, *Forbidden Planet*, an MGM science fiction thriller (loosely based on William Shakespeare's *The Tempest*) premiered at Grauman's Chinese Theatre in LA. The movie is noted for many firsts, including faster-than-light travel, an anthropomorphic robot aptly named "Robby the Robot" who could have been nominated for "Best Actor in a Supporting Role," and a fully electronic musical score. But this motion picture is important to us because it presciently describes the plight of an ancient race whose advanced technology destroyed them in an

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once inhabited by the Krell, a highly advanced native race that suddenly died out

200,000 years before. At the climax of the film, we find out that a mysterious

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storage intruder (that has been selectively killing off the explorers) is actually a

Micha Rabinovich

technology that empowered the Krell to unleash "Monsters from the Id." In less

Freudian terms, the technology created invisible, powerful manifestations of

Dani Mordechai, *Monsters from the Id*

Playmate Exposes Too Much

Shelly Palmer

individual Krell's most personal, unspoken, evil and malicious thoughts. It was instantly lethal to the entire race.

Dani Mathers's Id and the Tools That Empower It

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Dani Mathers looked up and saw a woman who aesthetically offended her. She had a thought ... a silent, personal thought. A hackneyed, pop-culture meme came to her: "If I can't unsee this then you can't either." It was so clever! So witty. She lifted her smartphone. It's a bit catty, but it's sooo perfect. A quick Snap. It's funny, right? She was done typing the caption before she finished thinking. Well, mean/funny ... but it's OK. A quick tap. It was over in an instant. Dani Mathers's Id unleashed on an unsuspecting world.

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Considering what we've all been through over the past 18 months, and no matter how it turns out, one thing is certain: we now have all the tools we need to use our thoughts to destroy ourselves.

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This may have always been true for a small subset of people, but there has never been a time where upwards of 3.5 billion people had this power simultaneously.

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death of one of our senses!

Bhaskar Ratan

How many social media friends have you recently unfollowed because of their political position or a statement of values you did not share? It scares me, and it should scare you too.

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We may not even need new technologies to unleash our "Monsters from the Id." Empowered by our existing networks, it may only take the promiscuous distribution of our innermost thoughts for us to face the Krell's fate. To ensure

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America's founding fathers gave us the gift of a republic where the majority rules but the minority is always heard. As we enter the age of technologically enabled reinforcement loops that proportionally amplify opposing points of view, we should respect their wisdom, or we may find ourselves living on a forbidden planet.

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About Shelly Palmer

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Named one of [LinkedIn's Top 10 Voices in Technology](#), **Shelly Palmer** is CEO of [The Palmer Group](#), a strategic advisory, technology solutions and business

development practice focused at the nexus of media and marketing with a special

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emphasis on augmented intelligence and data-driven decision-making. He is Fox

5 New York's [on-air tech and digital media expert](#), writes a weekly column

for [AdAge](#), and is a regular commentator on CNBC and CNN.

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