

The Web & Intellectual Property

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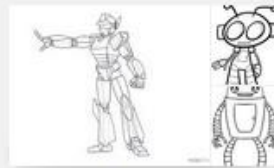
Web **Images** Videos News Maps More Search tools



Real



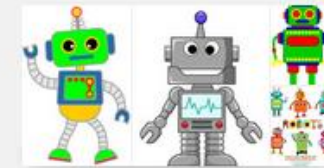
Human



Drawing



Of The Future



Clipart



Movie



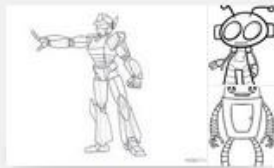
Web Images Videos News Maps More Search tools



Real



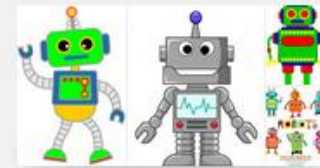
Human



Drawing



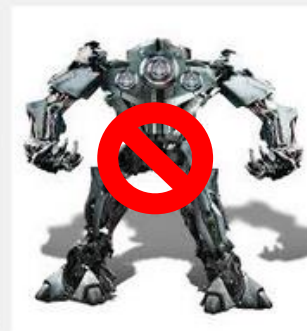
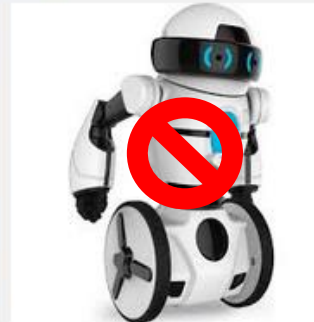
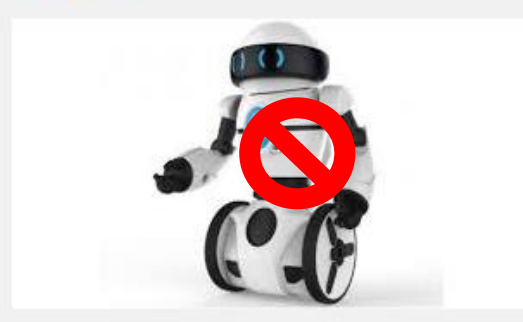
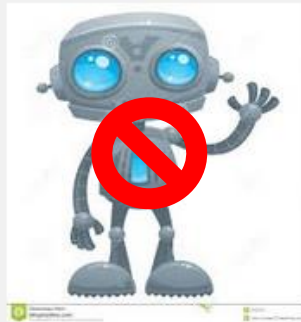
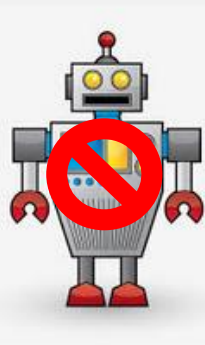
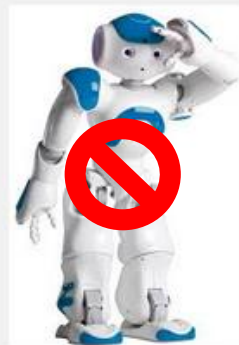
Of The Future



Clipart



Movie




*Marcel Duchamp,
Fountain (1917)*



*Marcel Duchamp,
Fountain (1917)*

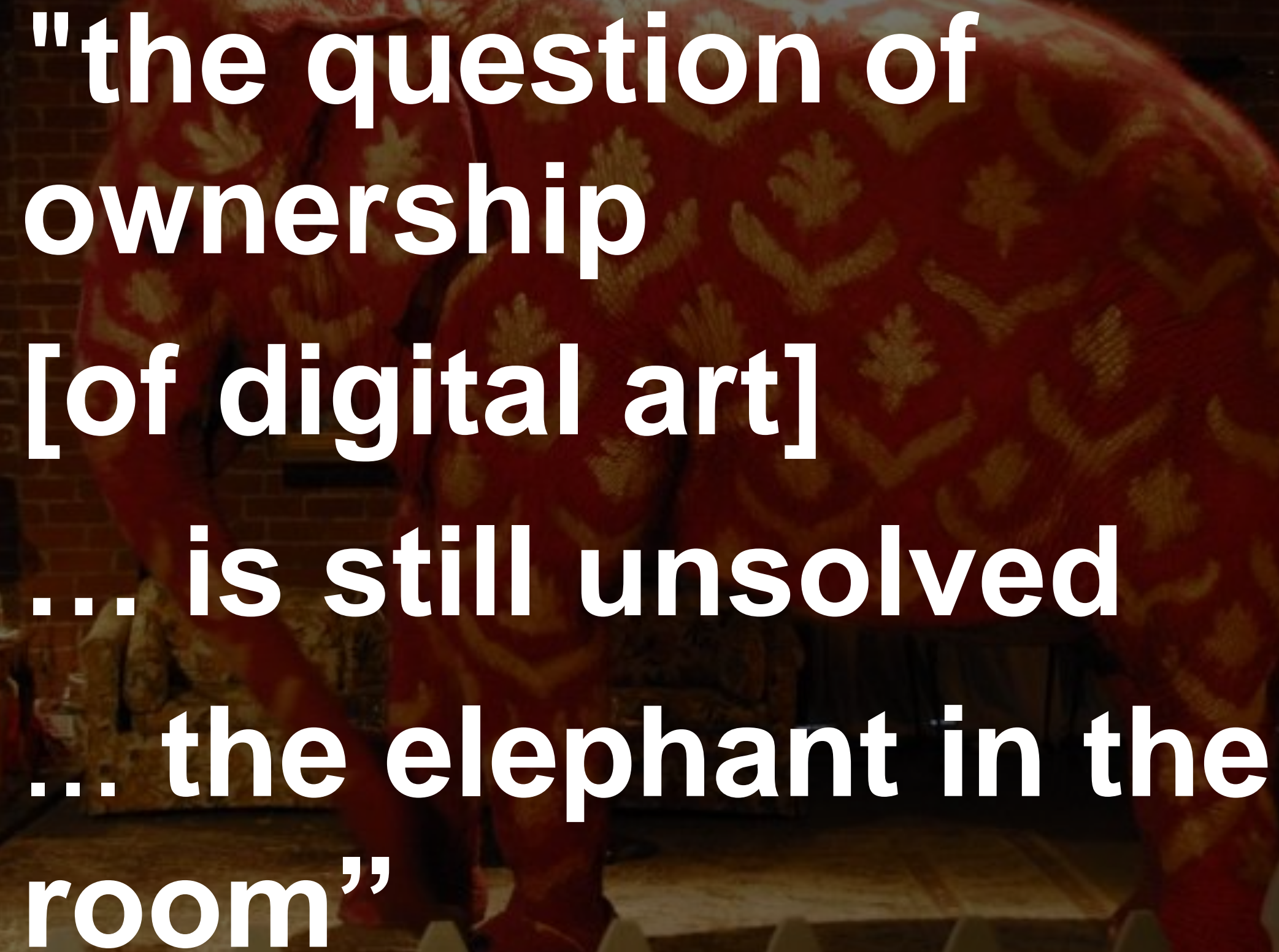


In art,
provenance is
everything



"I'm interested in
buying your art.
But how do I know
you own it?"

*(What's the
provenance of
title?)*



**"the question of
ownership
[of digital art]
... is still unsolved
... the elephant in the
room"**

-the Verge, 2013

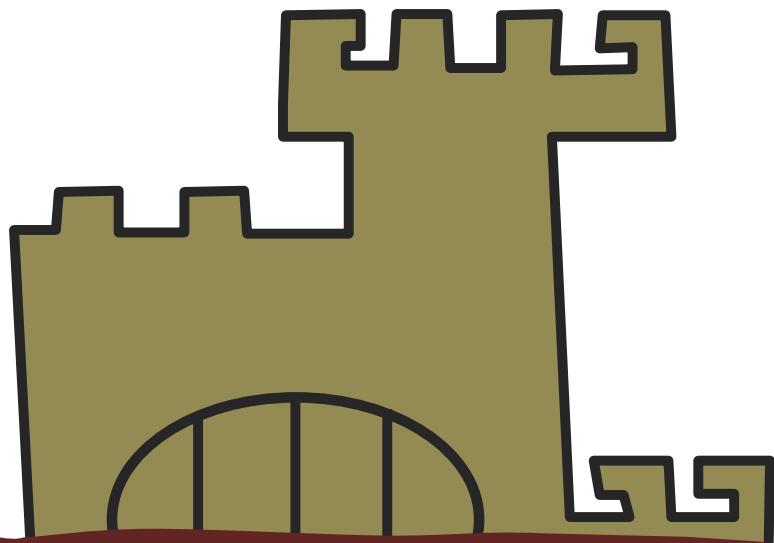
<http://www.theverge.com/2013/10/17/4814814/would-you-pay-2000-for-a-gif>

*"my conclusion is that **whatever**
you put on the internet you
lose it. Maybe keep the rights,
but lose the power over it."*

*-user on Shapeways blog
[3d printing marketplace]*

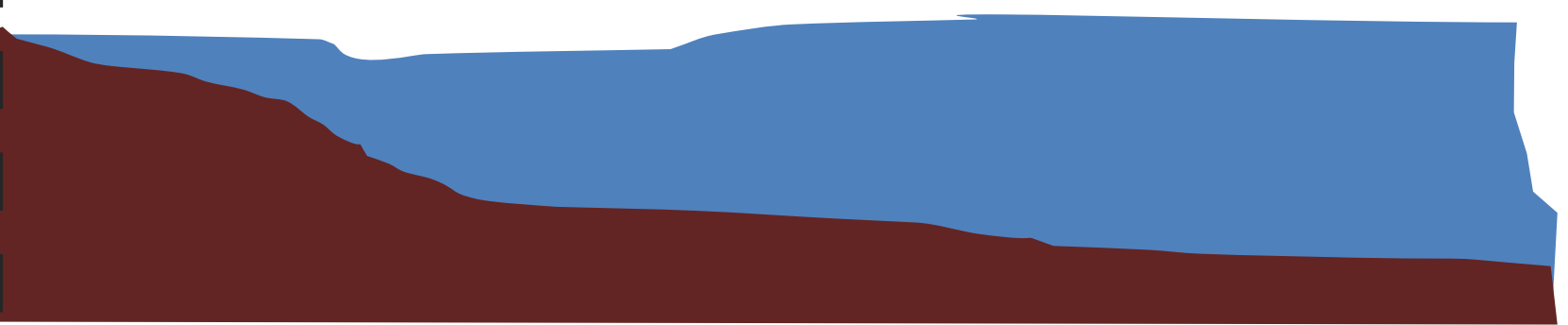
Copyright Zone

Fortified: Restricted, difficult to reuse, difficult to share



Public Domain Ocean

Open: Unrestricted reuse, but much material is inferior or outdated



Ownership of digital property (especially on the internet) is a mess

Creators

*how to get paid?
Sharing = losing control.*

Collectors/ Audience

"not available here"

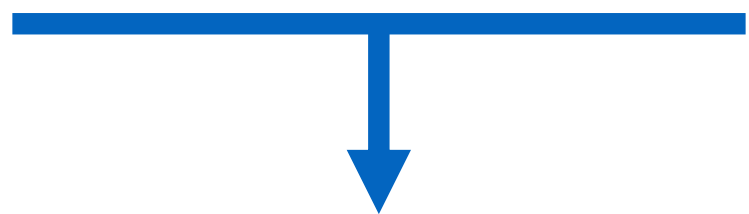
Connectors

*licensing painful &
tedious*

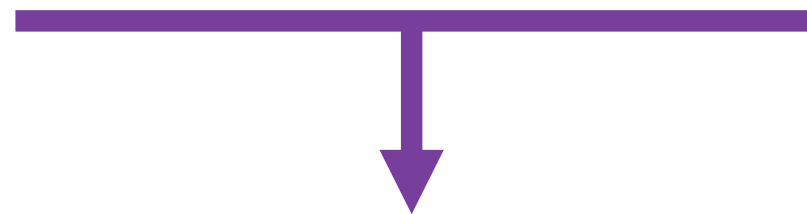
For almost every digital media vertical:
digital art, photography, 3d, music, videos...

*Ownership of digital property
(especially on the internet) is a mess*

Where's **my stuff?**



NO VISIBILITY



PAINFUL LEGALS

*Ownership of digital property
(especially on the internet) is a mess*

Why?

Some WWW history...

WORLD WIDE WEB

The WorldWideWeb (W3) is a wide-area hypermedia[1] information retrieval initiative aiming to give universal access to a large universe of documents.

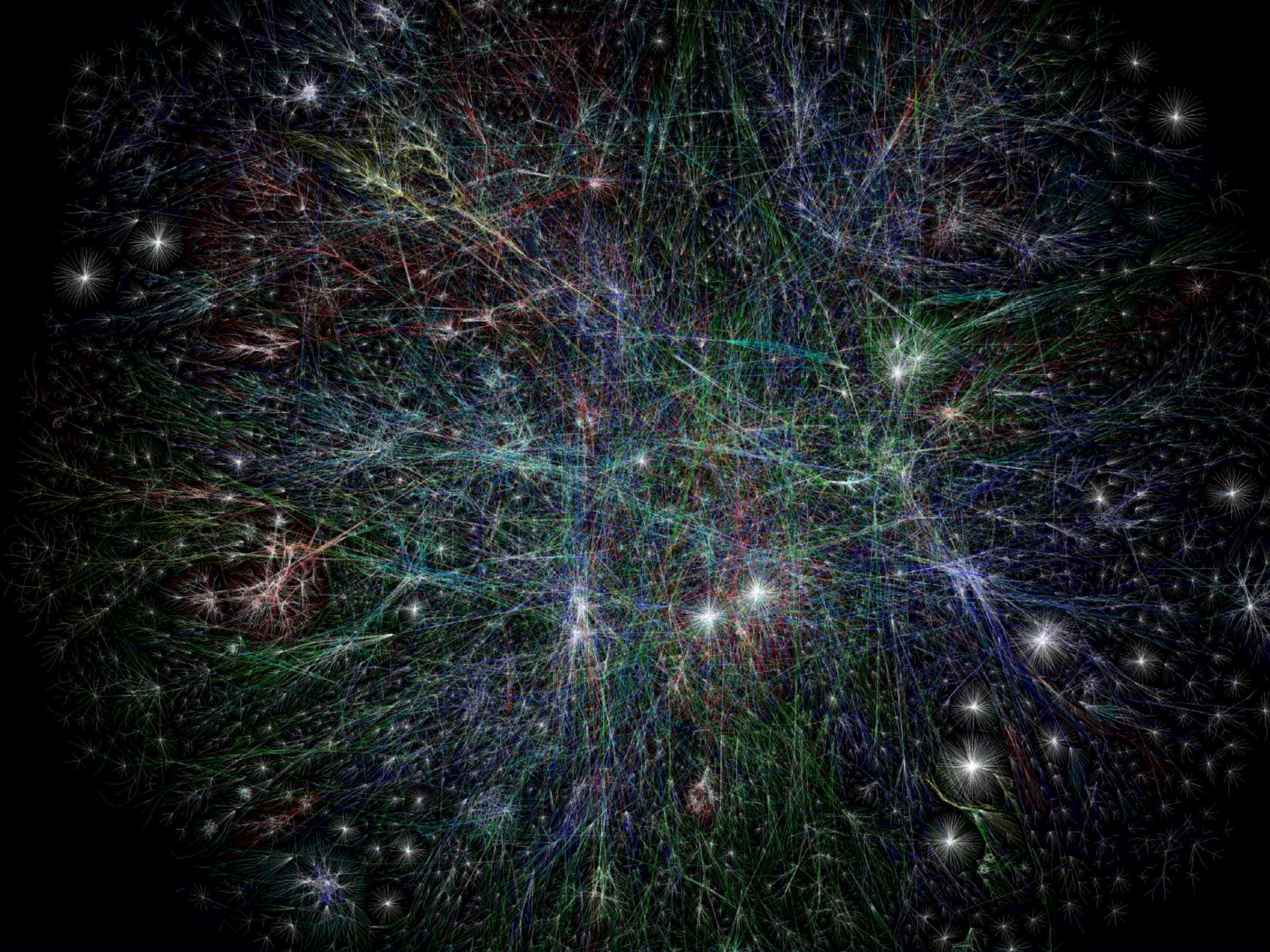
Everything there is online about W3 is linked directly or indirectly to this document, including an executive summary[2] of the project, Mailing lists[3] , Policy[4] , November's W3 news[5] , Frequently Asked Questions[6] .

What's out there?[7]Pointers to the world's online information,
subjects[8] , W3 servers[9], etc.

Help[10] on the browser you are using

Software
Products[11] A list of W3 project components and their current
state. (e.g. Line Mode[12] ,X11 Viola[13] ,
NeXTStep[14] , Servers[15] , Tools[16] , Mail
robot[17] , Library[18])

Technical[19] Details of protocols, formats, program internals
etc



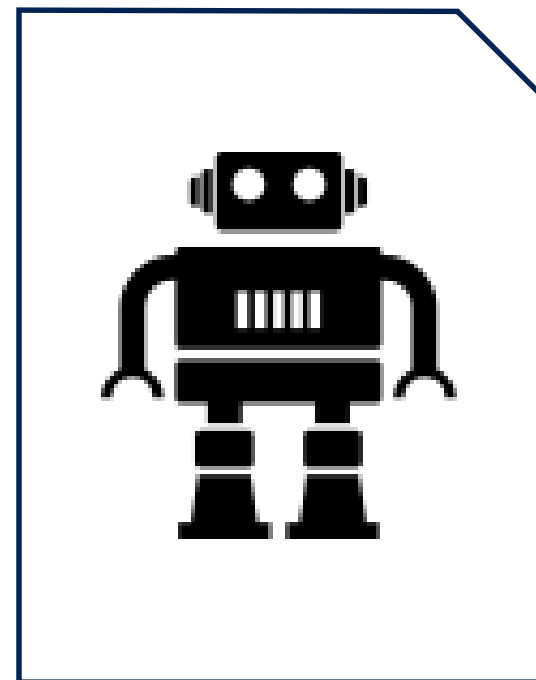


“The current world wide web does
basically one thing: simple, stupid,
mindless hyperlinks.”

-Jeff Atwood,
Coding Horror Blog

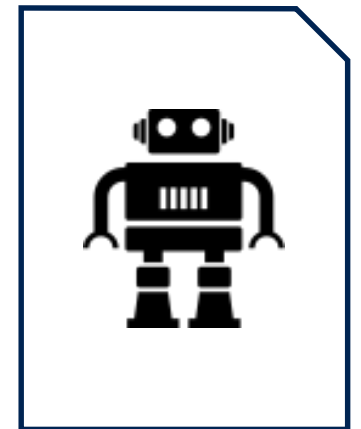
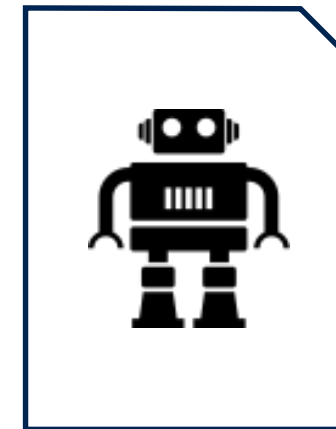
The WWW

*Zero links: Copy with **no attribution***

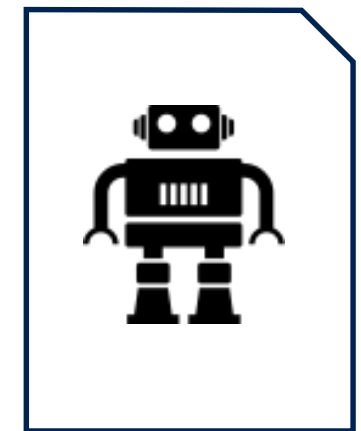
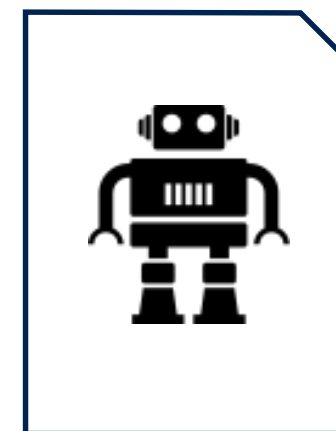


Original

*Uni-directional links:
Attribution but
no ownership control*



*or **missing attribution***



Where's my stuff?



NO VISIBILITY



PAINFUL LEGALS

Does it need to be this way?

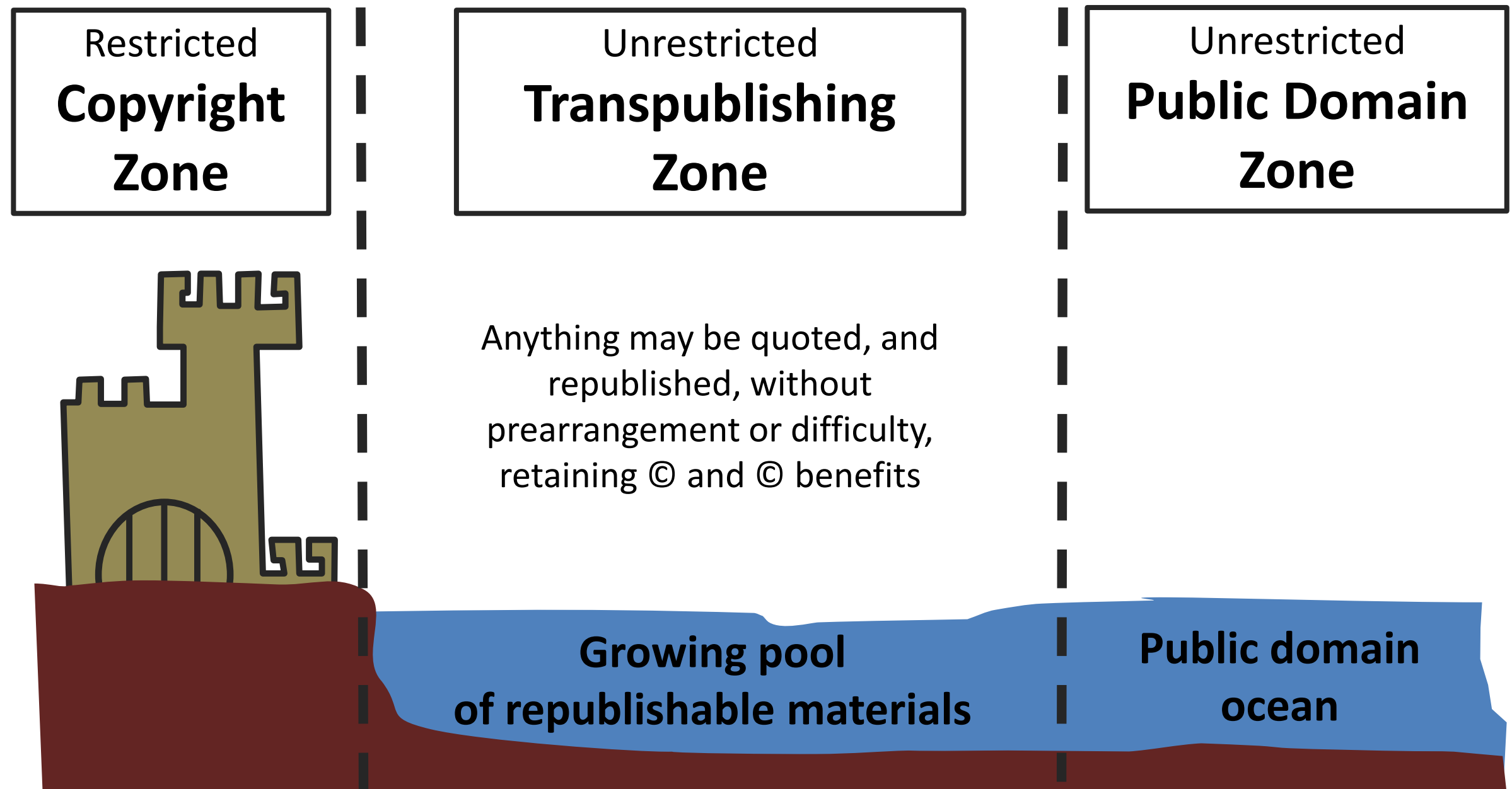
Some pre-WWW history...

“[Consider] a unified .. service
that would provide storage and
publication services, and
manage .. royalty payment on a ..
fair basis that would facilitate
unrestricted virtual republishing”

-Ted Nelson
-on a vision from 1965

The Xanadu Vision (from 1965)

“The original hypertext project”

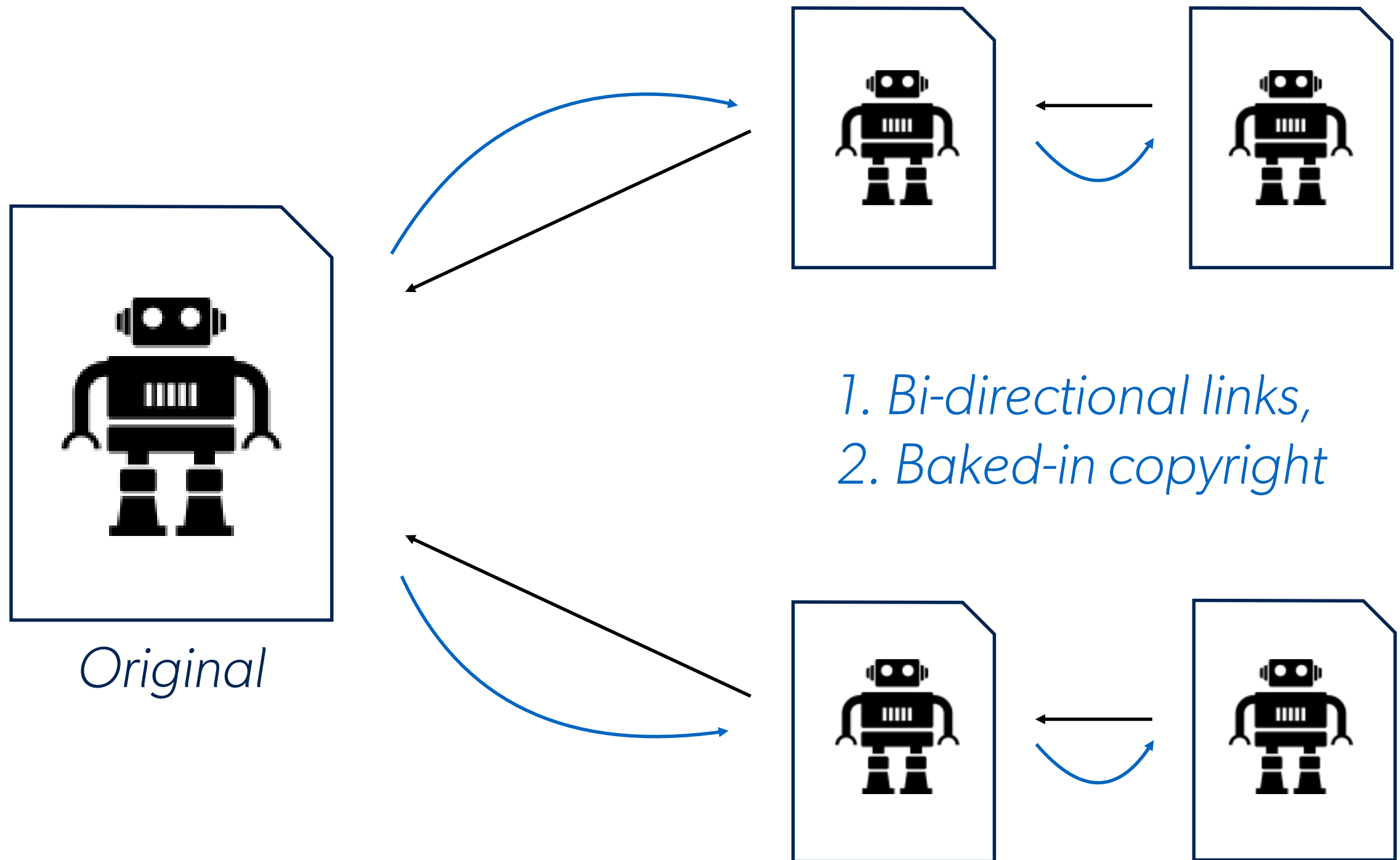


“.. a **new middle realm**, one which renders copyright benign and flexible .. a **win-win system, as it is beneficial both to rights holders and to users**, in a way that other copyright systems are not beneficial to users.” –Ted Nelson

1. Theodor H. Nelson, "A File Structure for the Complex, the Changing and the indeterminate." Proceedings of the ACM National Conference, 1965.

2. Image adapted from <http://xanadu.net/NOWMORETHANEVER/XuSum99.html>

The Xanadu design

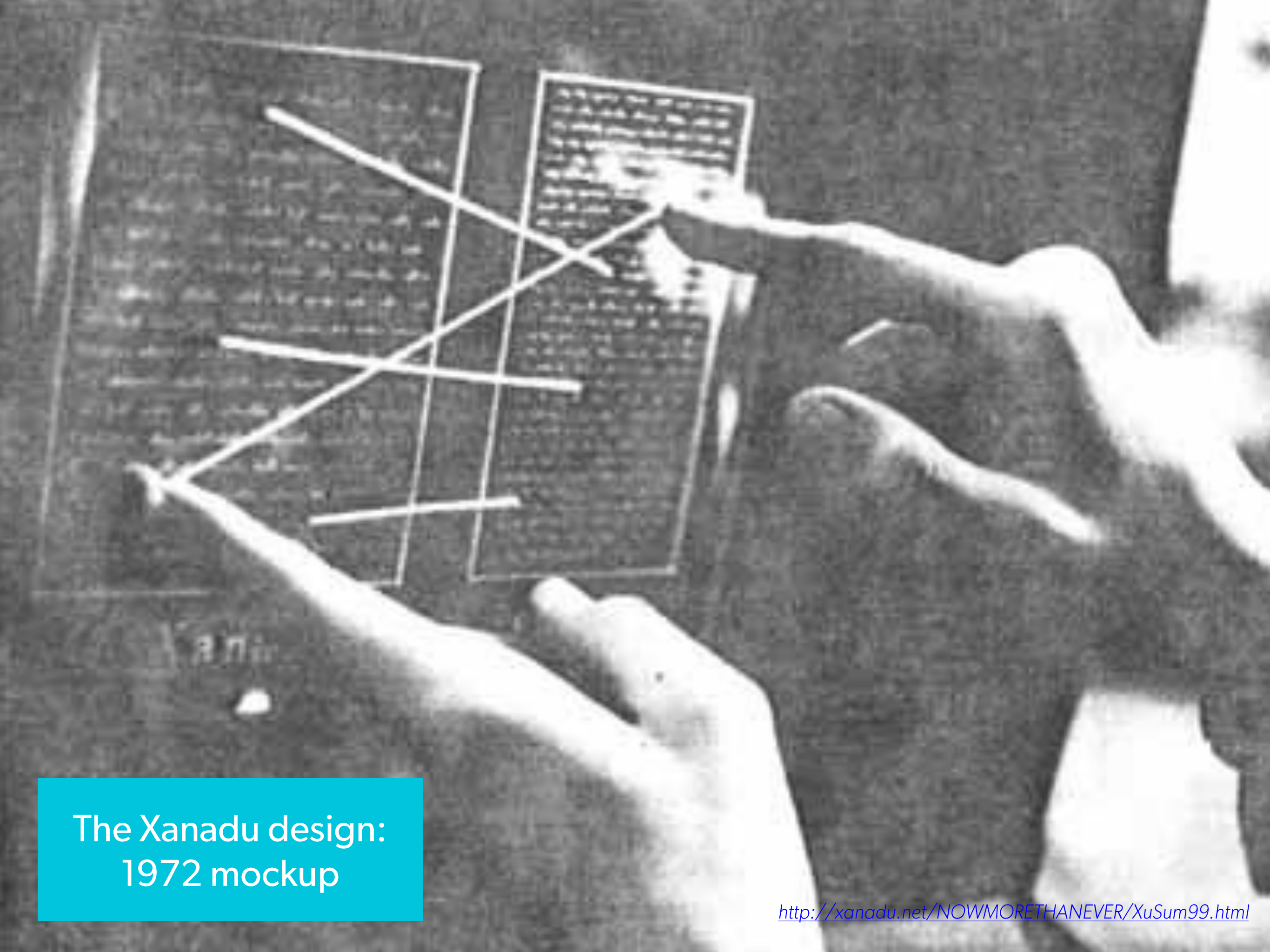


Where's my stuff?



Visibility via
bi-dir. links

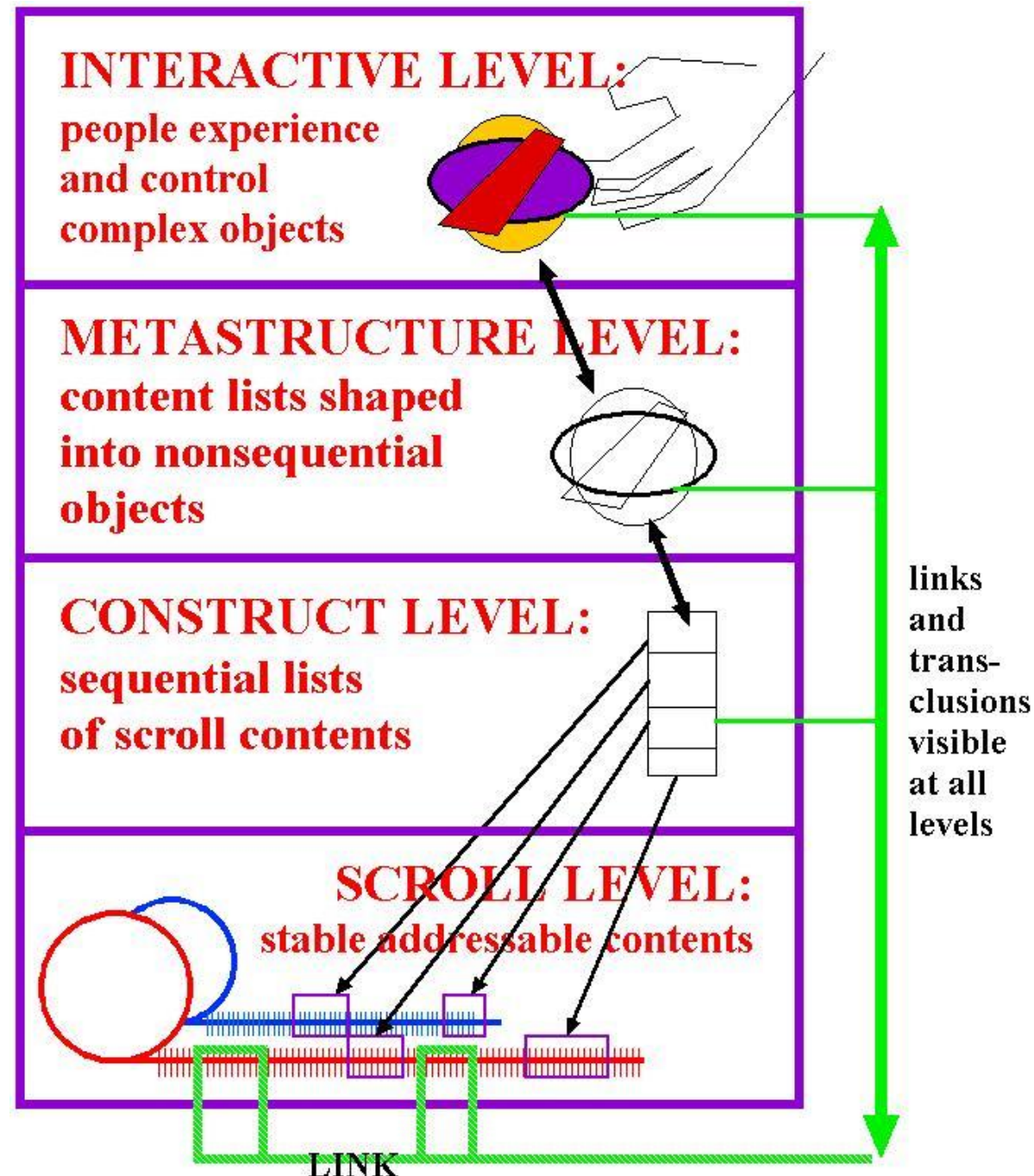
Baked-in
copyright



The Xanadu design:
1972 mockup

<http://xanadu.net/NOWMORETHANEVER/XuSum99.html>

The Xanadu design was actually “a little” more complicated (1968)



Xanadu - What happened?

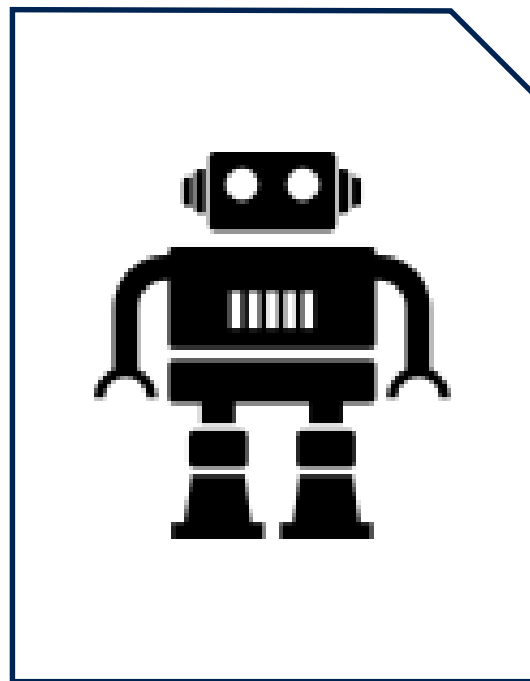
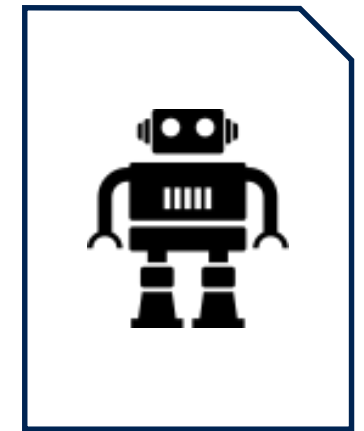
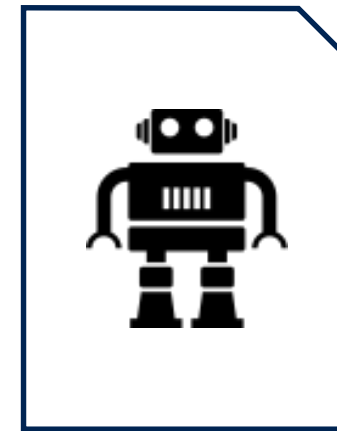
1. Complex → hard to build
25+ year effort – “vaporware”

2. The simpler WWW came along

3. And ate its lunch...

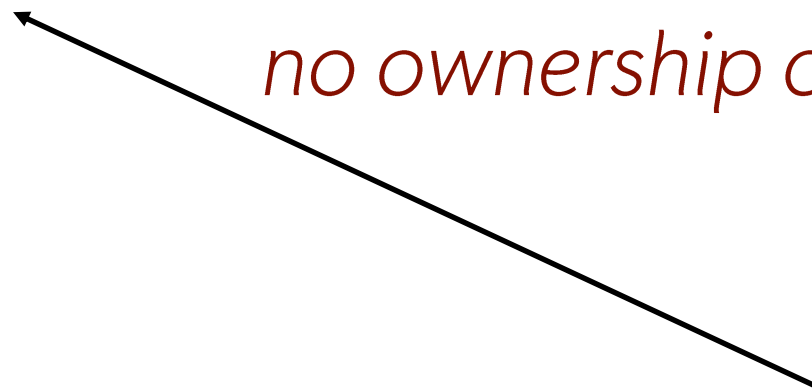
So now we have the
WWW, warts and all

*Zero links: Copy with **no attribution***

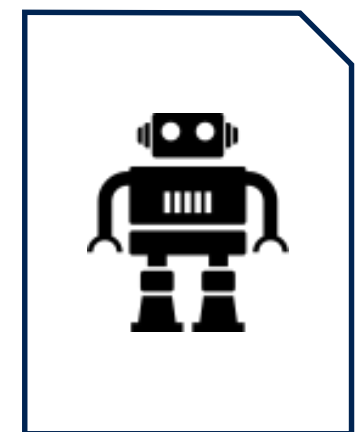
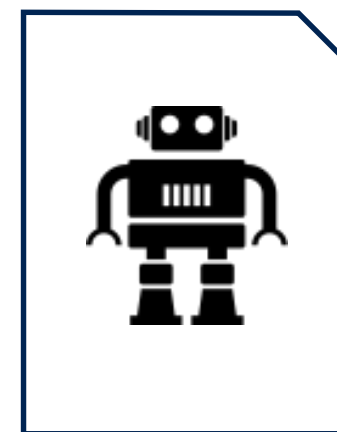


Original

*Uni-directional links:
Attribution but
no ownership control*



*or **missing attribution***



“HTML is precisely what we were trying to prevent --
ever-breaking links ... no rights management.”

-Ted Nelson

Summary so far

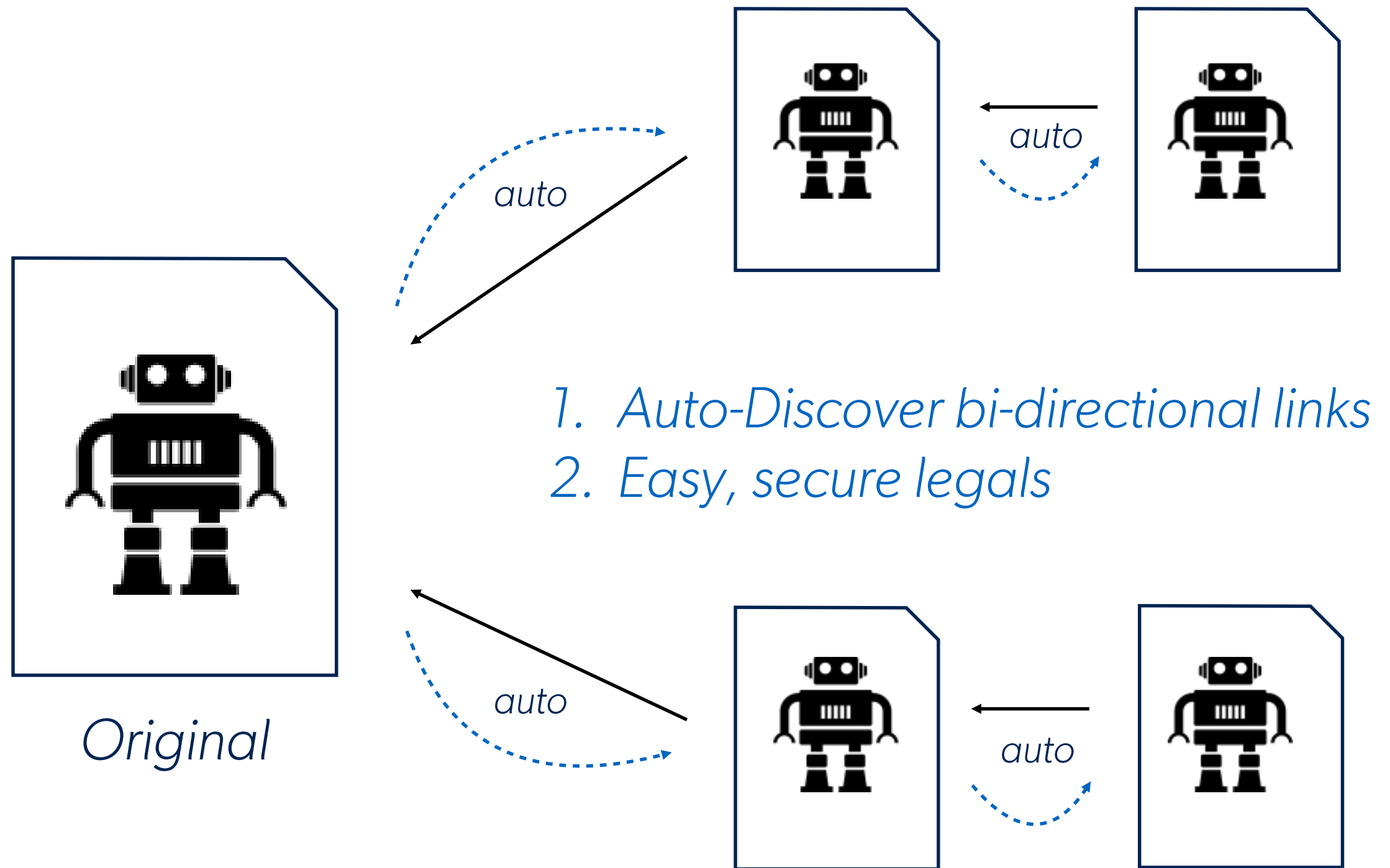
- Ownership of digital property (especially Internet) is a mess
- Despite being anticipated since the 60s
- And designed for
- But simplicity of www won out
- Leaving “where’s my stuff?” unsolved

A new Question:

Can we retrofit
the Internet for ownership?

(and realize the Xanadu aims in the process)

The ascribe idea



Where's my stuff?



Auto bi-dir.
links



Easy, secure
legals

Where's my stuff?



How (ascribe):

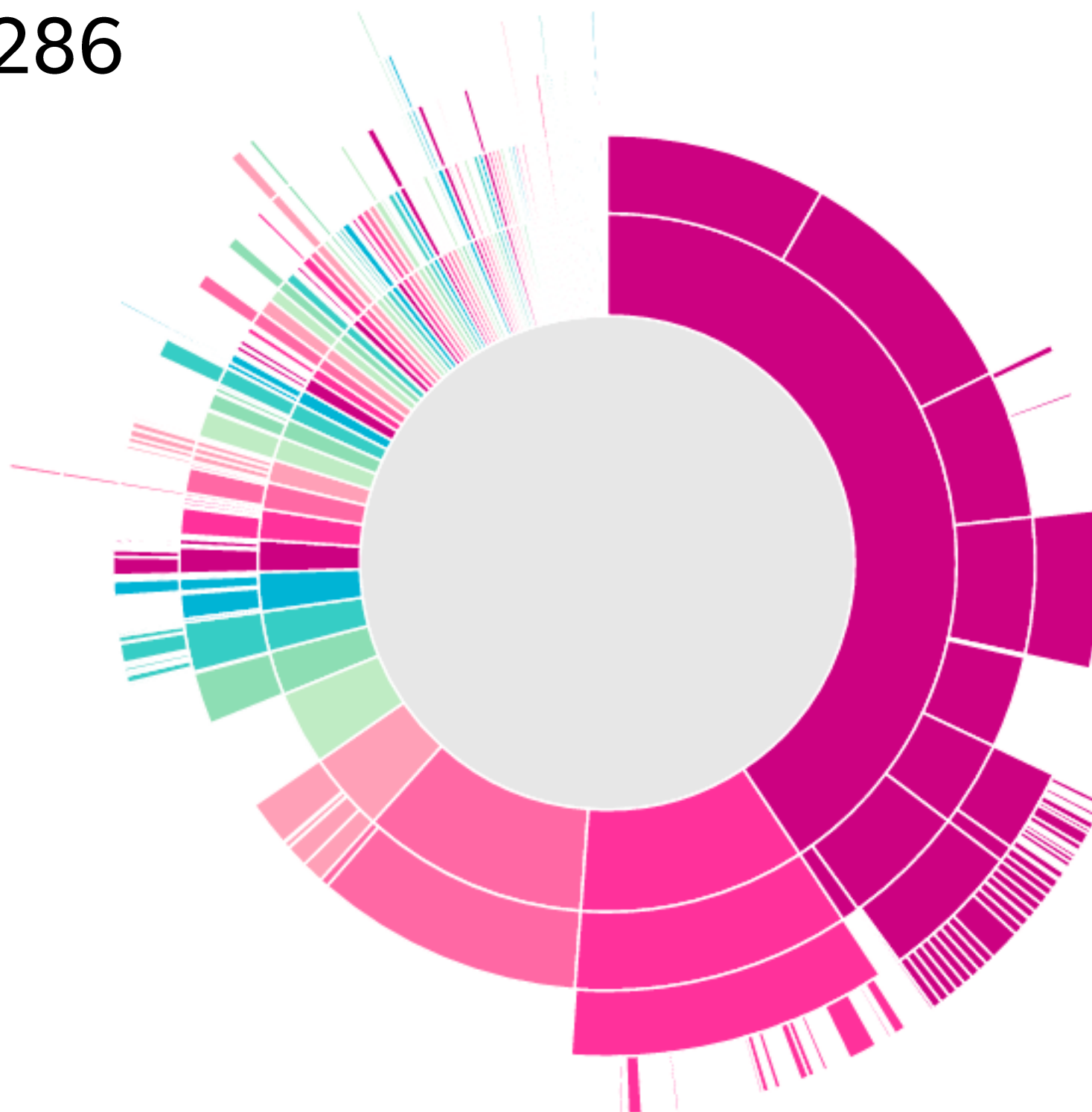
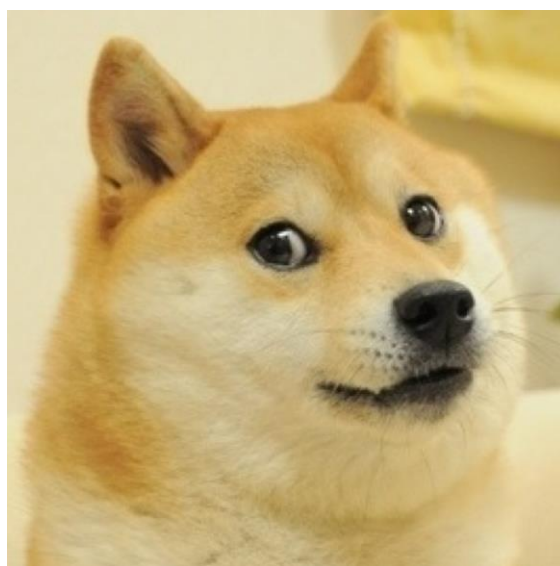
- Crawl the entire internet (220 Tb text)
- Similarity match against creator's content (10G+ images, 3d designs, ..)
- This is a machine learning problem, at Internet scale
- To know when someone's using your work

A close-up photograph of a Shiba Inu dog's face. The dog has light tan fur with white markings on its muzzle and chest. Its dark, almond-shaped eyes are looking slightly to the right. A black nose is visible on the right side of its face. A bright blue speech bubble with a white border is positioned in the lower-left corner, containing the text "Where's doge?".

Where's
doge?

Website: sc2tv.ru

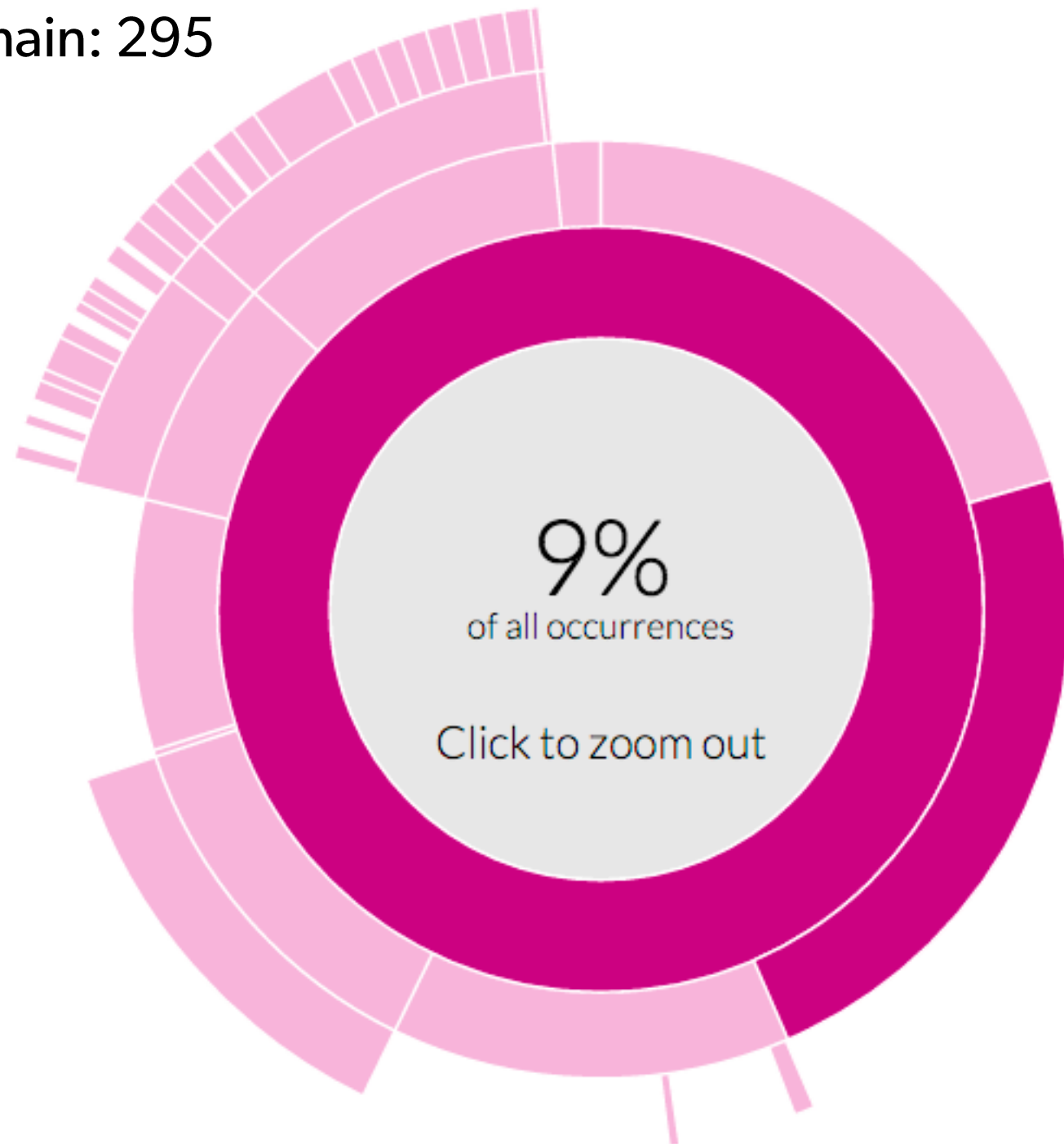
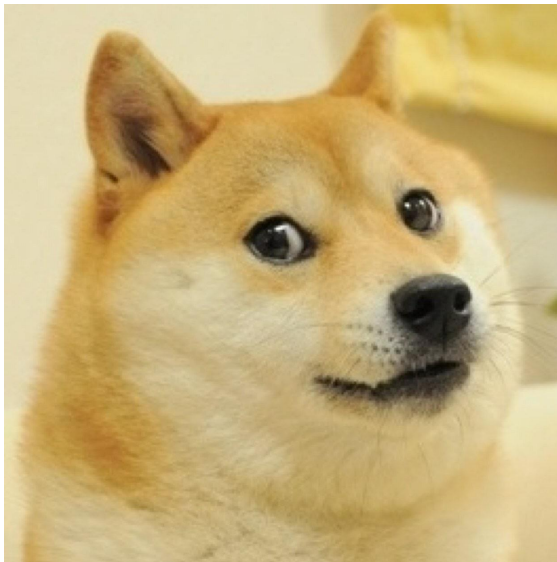
Occurrences: 1286



sc2tv.ru

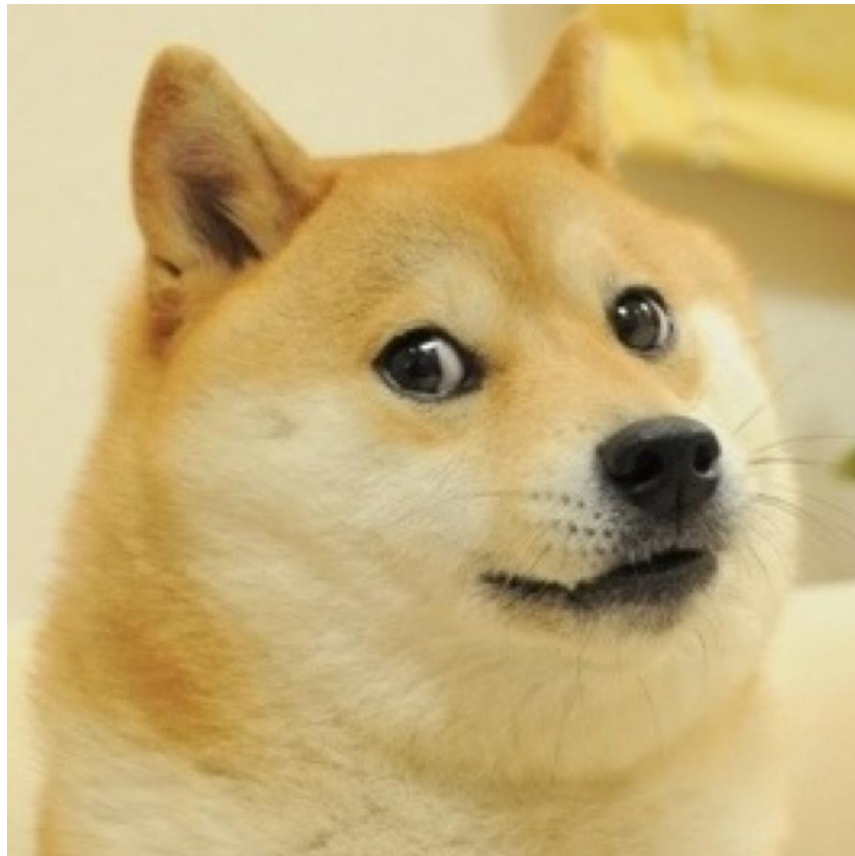
Domain:content

Occurrences under this domain: 295



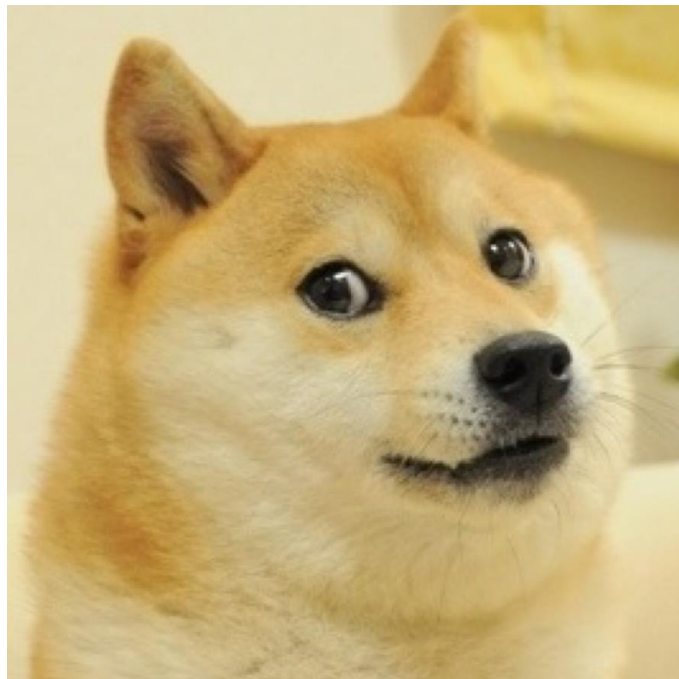
A close-up photograph of a Shiba Inu dog's face. The dog has light brown fur, dark eyes, and a black nose. A blue speech bubble is overlaid on the lower left side of the image, containing the text "How did doge spread?".

How did doge
spread?

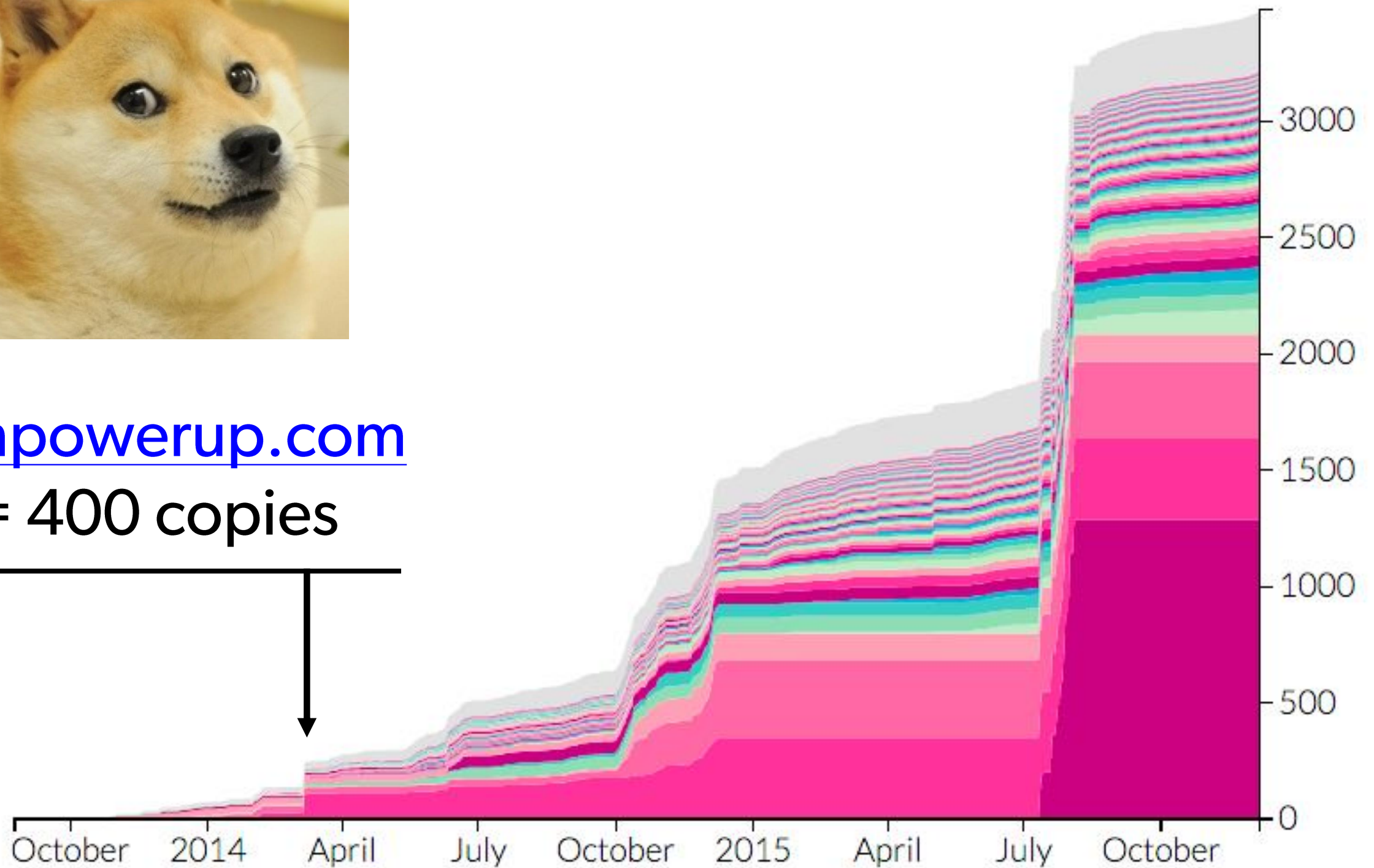


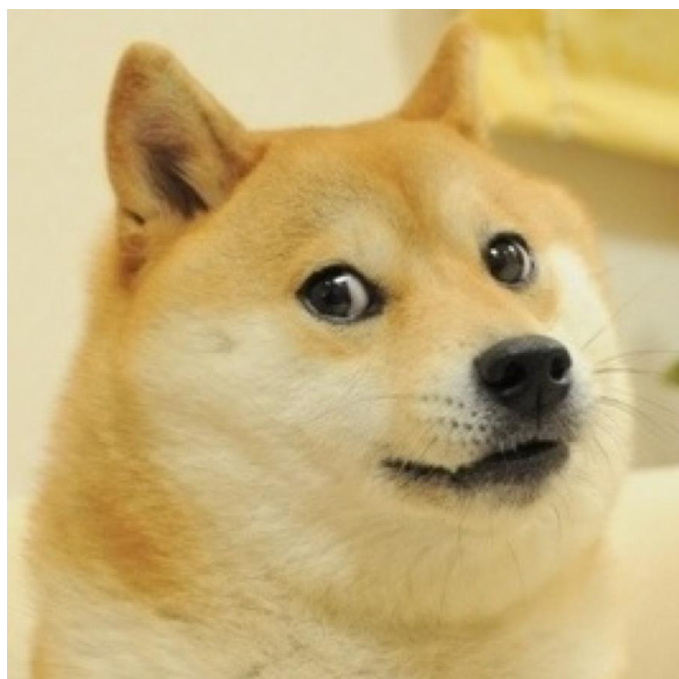
Oct 2014 = 0 copies



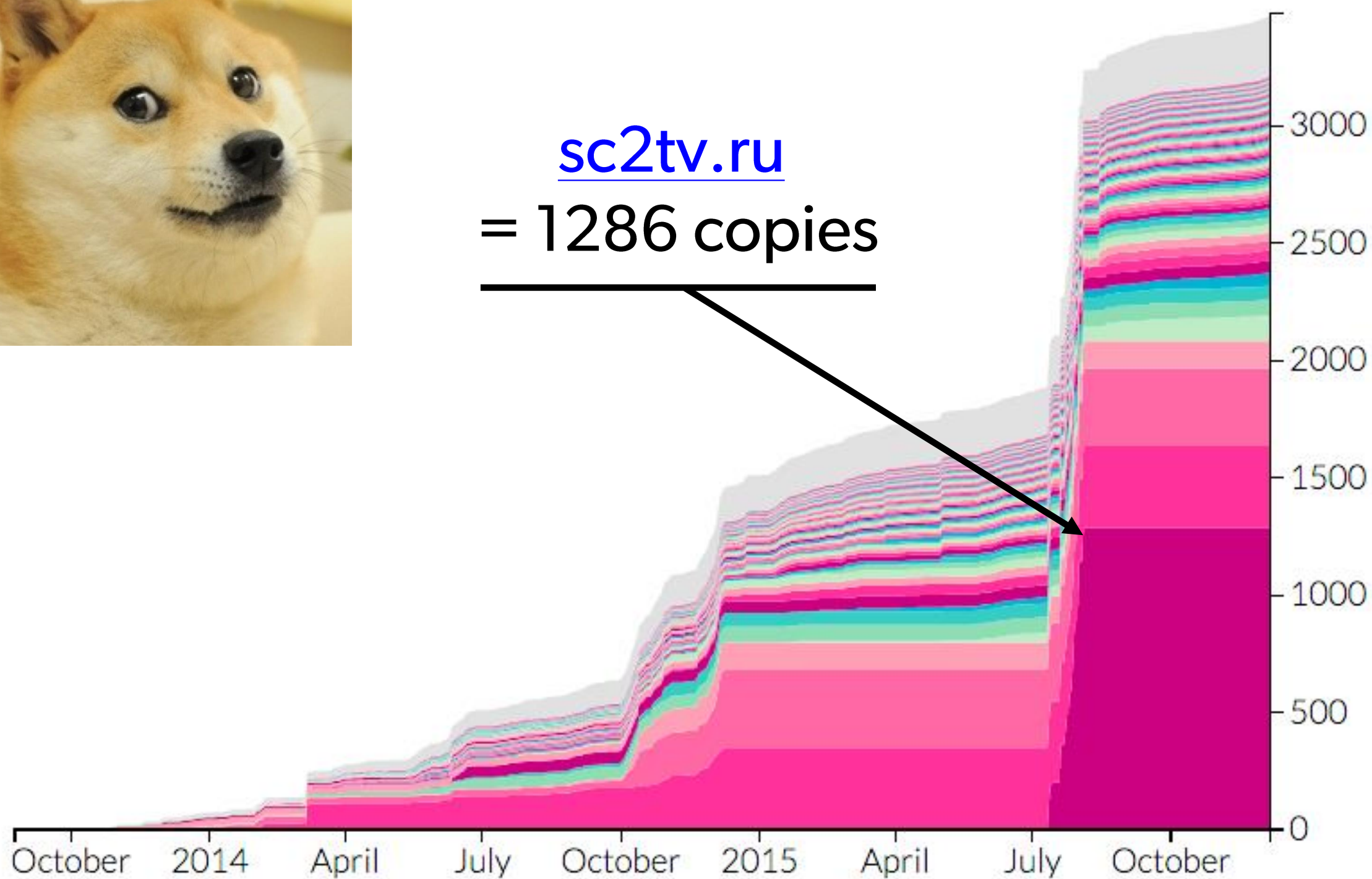


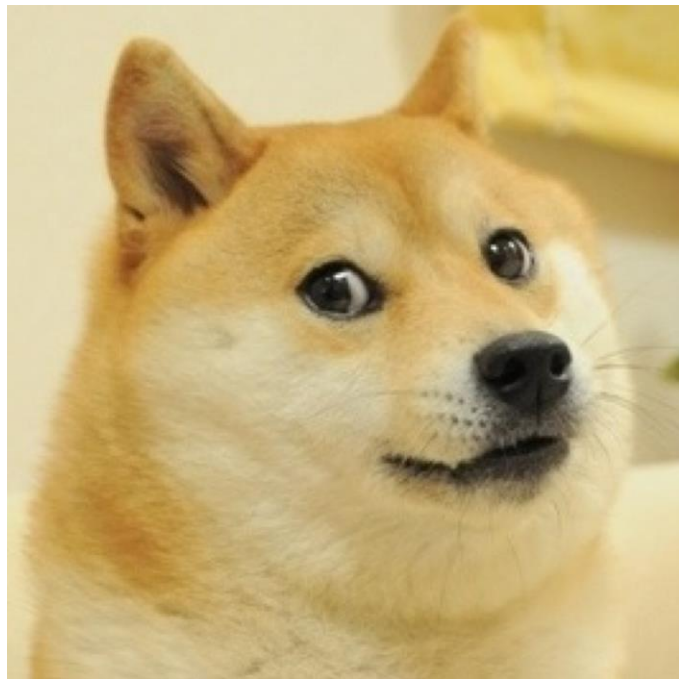
techpowerup.com
= 400 copies



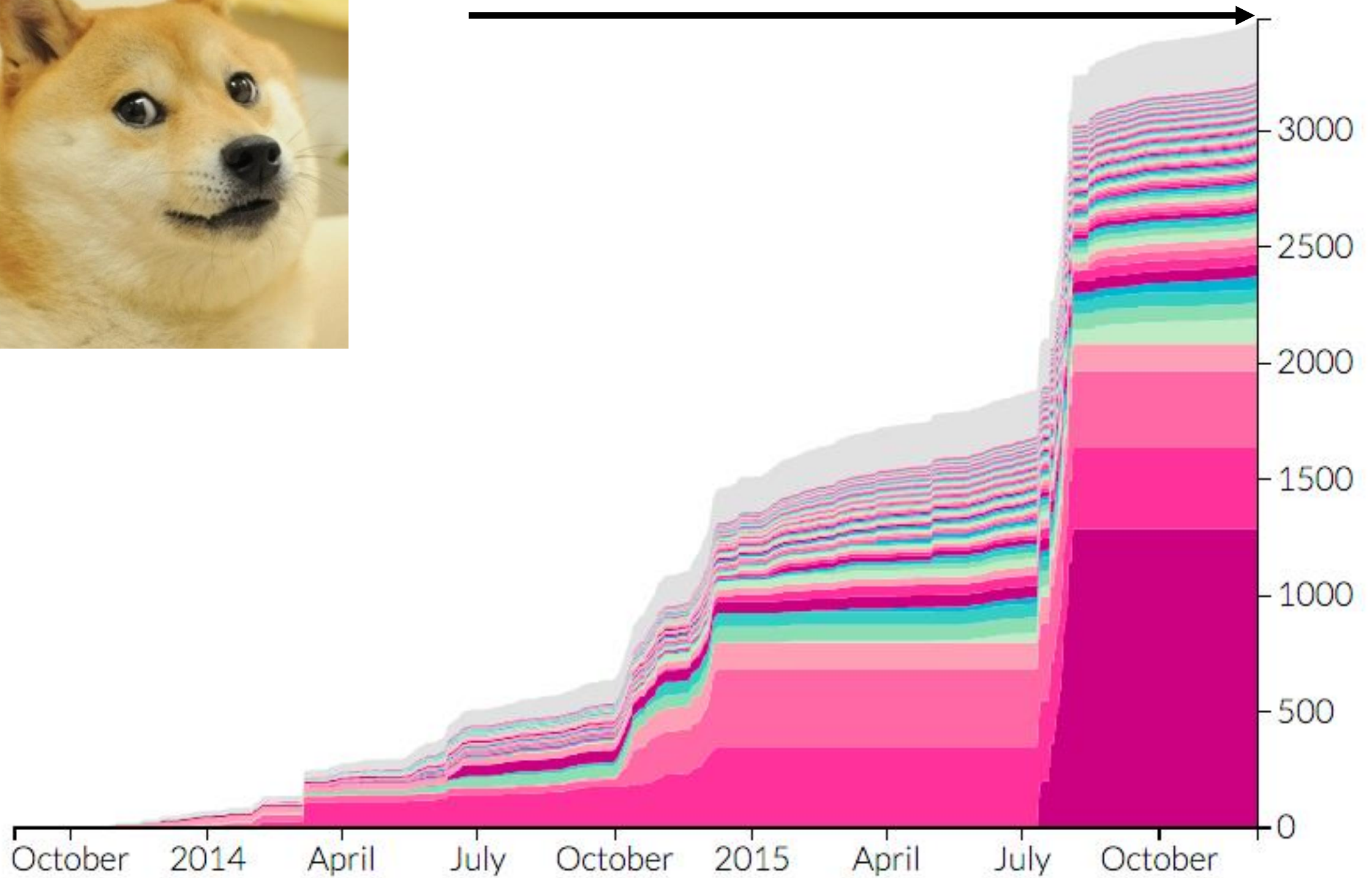


sc2tv.ru
= 1286 copies





Now = 4000 copies



Where's my stuff?



- Easy legals via terms of service:
 - “I claim copyright rights” (creator) and
 - “I transfer [beneficial-use] copyright rights” (sale).
- Copyright in a box!

Easy legals: snippet of ascribe terms of service

contract unless you object to the inclusion *vis-a-vis* ascribe in writing within three weeks beginning from the receipt of the notice of amendment. In case of such objection, ascribe has the right to extraordinary termination.

3. ASCRIBE DEFINITIONS

You can access the ascribe service through our website www.ascribe.io.

3.1 WORK

"**Works**" are all physical, digital, or intellectual items, objects, or other properties or services that can be traded digitally (e.g. 3D-STL files, photos, stocks, physical property, texts, music, videos, licenses).

3.2 EDITION

"**Edition**" is a digital copy of a Work that can be bought and sold on ascribe. Editions can be thought of as digital property, and can be used in the same way a physical Work could be used (e.g. displayed in private or in public, with or without admission being charged, rented for a fee, loaned, sold, etc.).

3.3 OWNERSHIP TRANSACTIONS

"**Ownership transactions**" are all actions pertaining to the ownership of, rights in, or license to a Work or Edition of a Work. These include, but are not exclusive to, registering the Work, assigning and un-assigning representation, and transferring editions of the Work.

3.4 THE SPOOL

The "**SPOOL**" is a **Secure, Public, Online Ownership Ledger**, which is used to record ownership transactions. When a Work is registered with ascribe, pseudonymous information pertaining to the user and the Work are recorded on the SPOOL, as well as other data related to the user and the Work, and transactions related to the Work. More information about the SPOOL can be found in the Registration of Works section and the Technical Overview page.

3.5 SELLER AND BUYER

These Terms use the terms Seller and Buyer as a generalization referring to the two parties needed as a minimum to close a contract (e.g. to rent or to transfer an Edition).

3.6 WALLET

Where's my stuff?



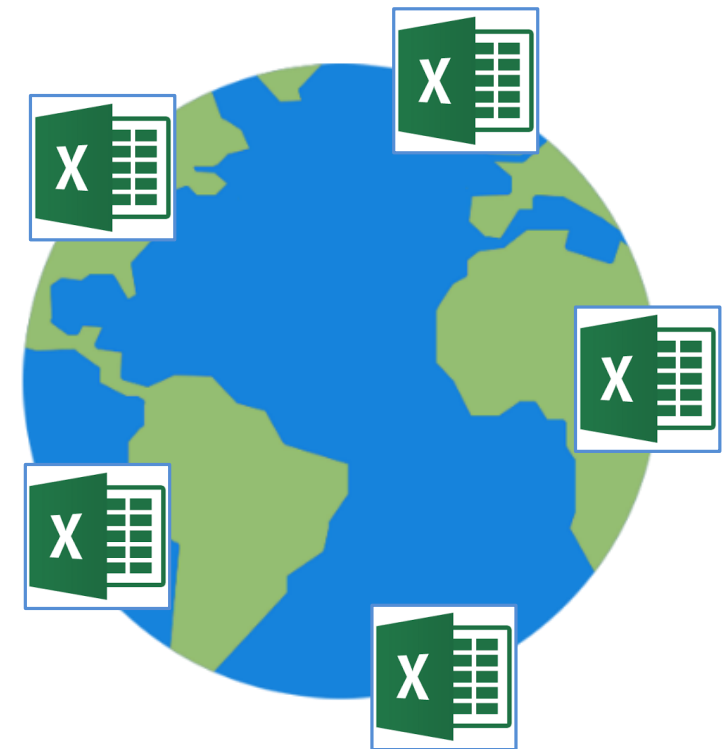
- Easy legals via terms of service:
“I claim copyright rights” (creator) and
“I transfer [beneficial-use] copyright rights” (sale).
- Copyright in a box!
- Secure legals.... blockchain

Blockchain 101

A blockchain is simply a database.

Just a very weird one:

- *anyone can add to it,*
- *and it gets auto-synced,*
- *nothing can be deleted*
- *it's public, and*
- *It's terrible by most traditional DB measures (throughput, capacity, ..)*



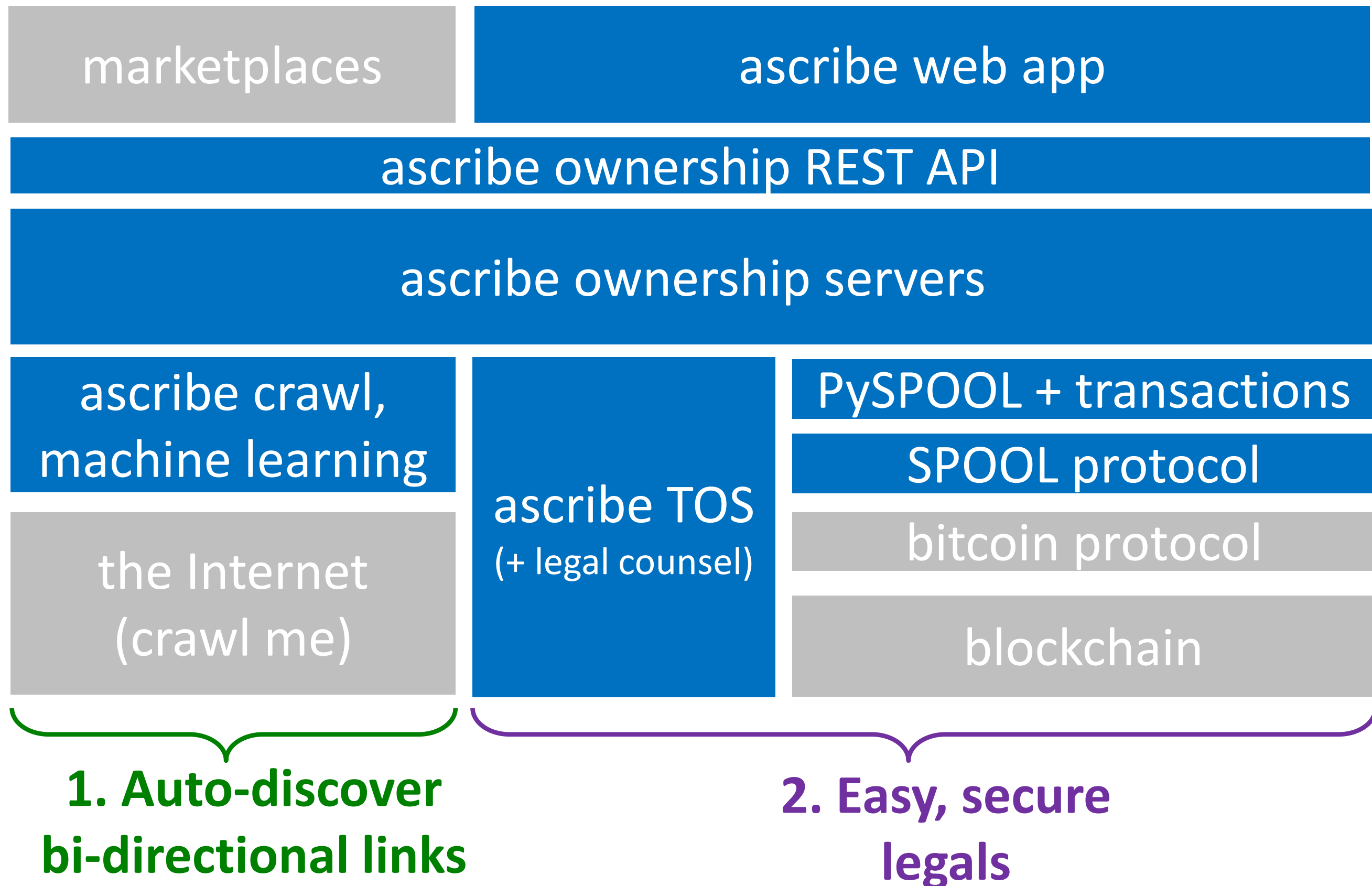
On the Bitcoin blockchain (DB), you can buy and sell e-money called "Bitcoin".

Where's my stuff?

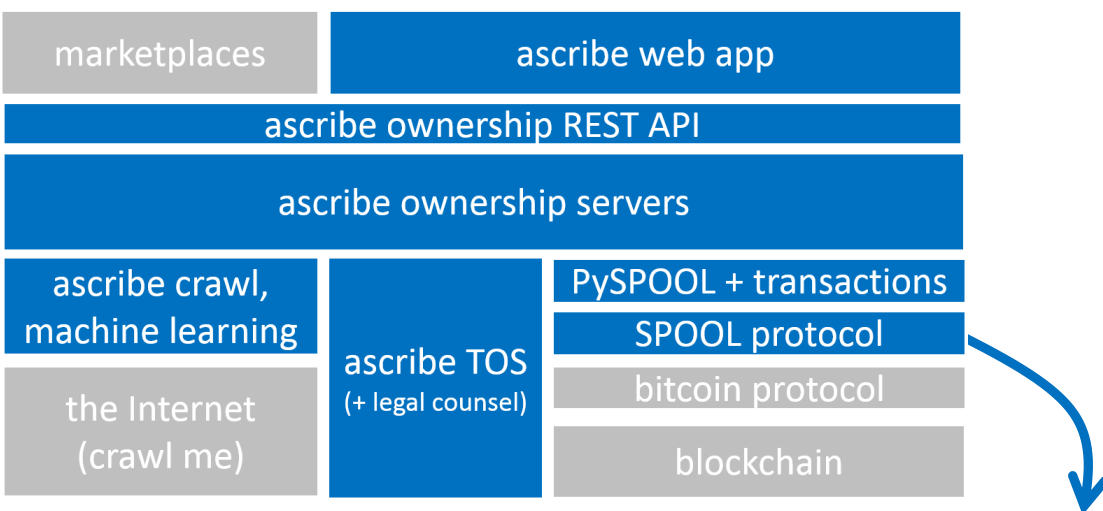


- Easy legals via terms of service:
“I claim copyright rights” (creator) and
“I transfer [beneficial-use] copyright rights” (sale).
- Copyright in a box!
- Secure legals.... blockchain
- Secure legals by time-stamping evidence of ownership actions onto a trusted ledger (bitcoin blockchain).
- Special “SPOOL” protocol for ownership: unique editions, consign, loan ..
- Time-stamp = evidence for court in case of ownership dispute

How: full ascribe tech stack



Interface 1/4 on the ascribe stack



BITCOIN OVERLAY (SPOOL*)

```
REGISTER:
- MAPPING: 1-to-many
- SPOOL: piece_hash -> edition(s)
- BTC:
TX = [(1jtt... : 20000+num_editions)] -> [(piece_hash:10000),
(OP_RETURN=SPOOLREGISTER:0), (fee:10000)]
> balance of piece_hash = 10000 satoshi
> balance of edition(s) = 1 satoshi

TRANSFER:
- MAPPING: 1-to-1
- SPOOL: edition -> transfered_edition [transfered_edition is
- BTC:
* first transfer
> balance of edition = 1 satoshi
TX = [(1jtt...:29999)] -> [(edition_hash:19999), (OP_RETURN
TX = [(edition_hash:20000)] -> transfered_edition_hash [(trans
(OP_RETURN=SPOOLTRANSFER:0), (fee:1000)]
> balance of edition = 0 satoshi
> balance of transfered_edition = 10000 satoshi

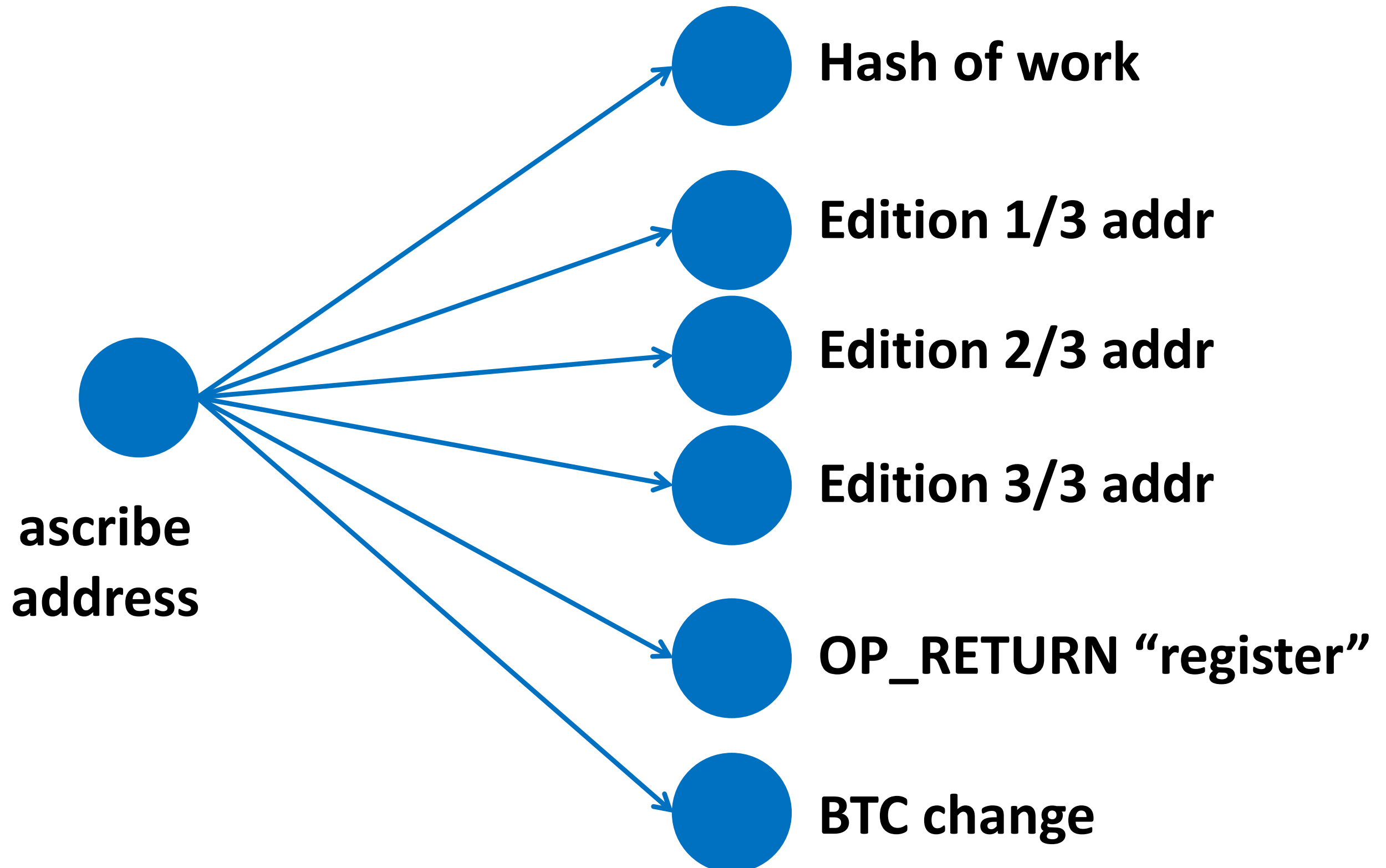
* next transfers
> balance of transfered_edition = 10000 satoshi
TX = [(1jtt...:20000)] -> [(10000), (OP_RETURN=SPOOLRE
```

For adventurous
BTC hackers 😊

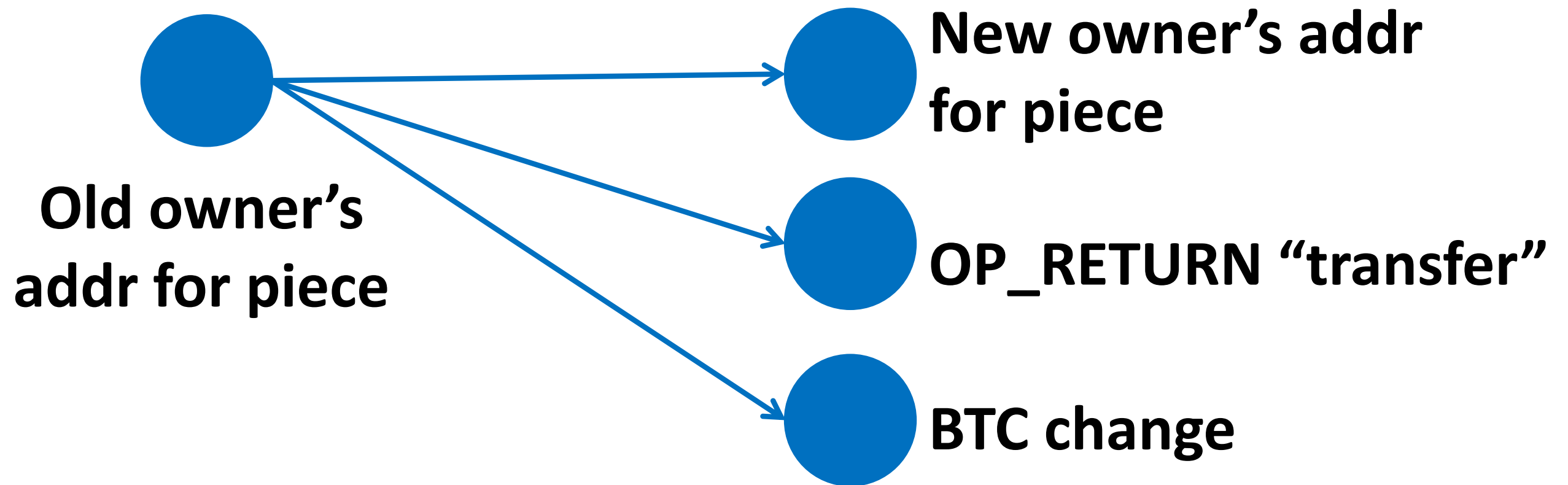
***SPOOL = Secure Public
Online Ownership Ledger**

Bitcoin overlay (SPOOL): register tx

Example on 3 editions



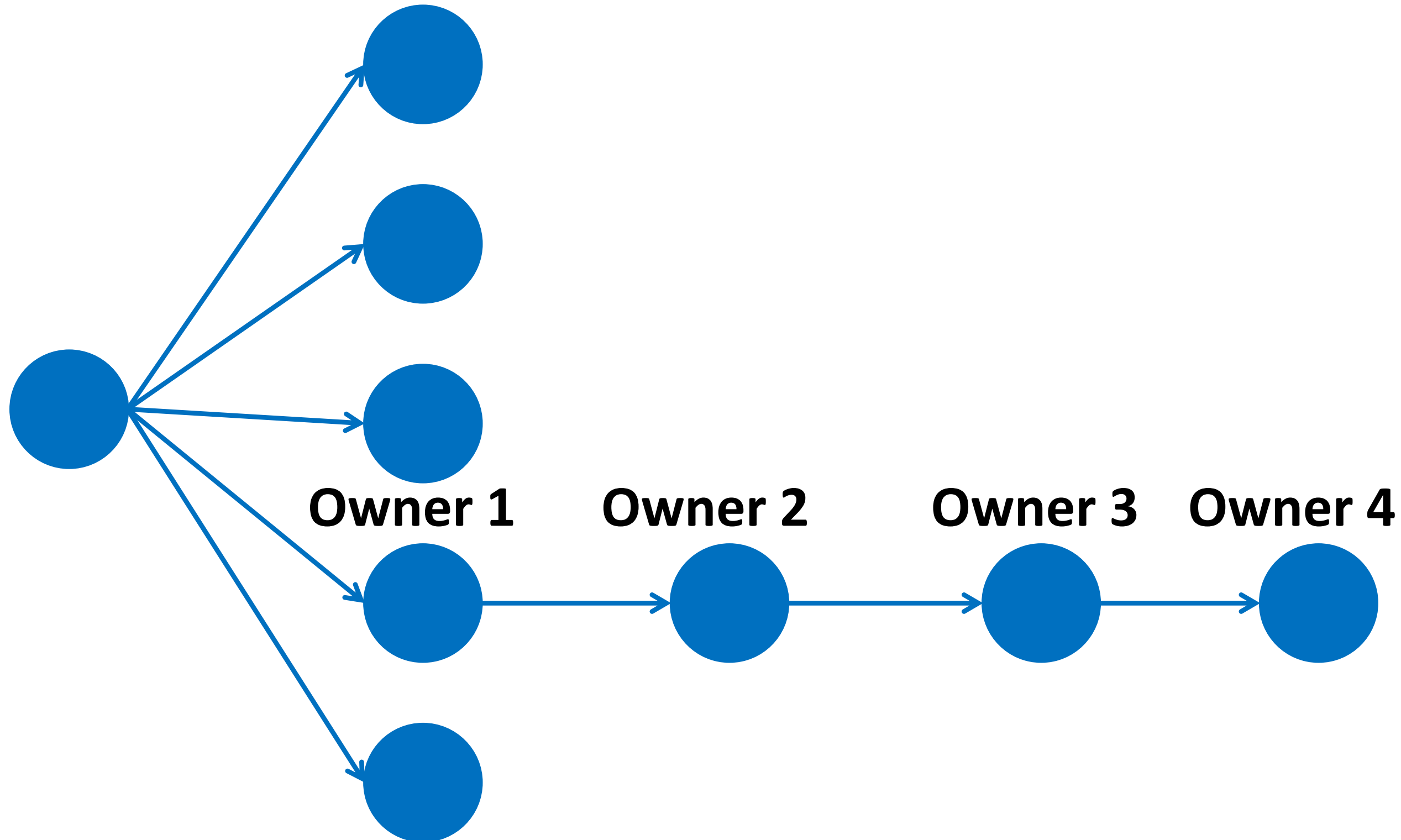
Bitcoin overlay (SPOOL): transfer ownership tx



≈ the first time any bitcoin leaves existing owner's wallet, ownership is transferred to the output wallet

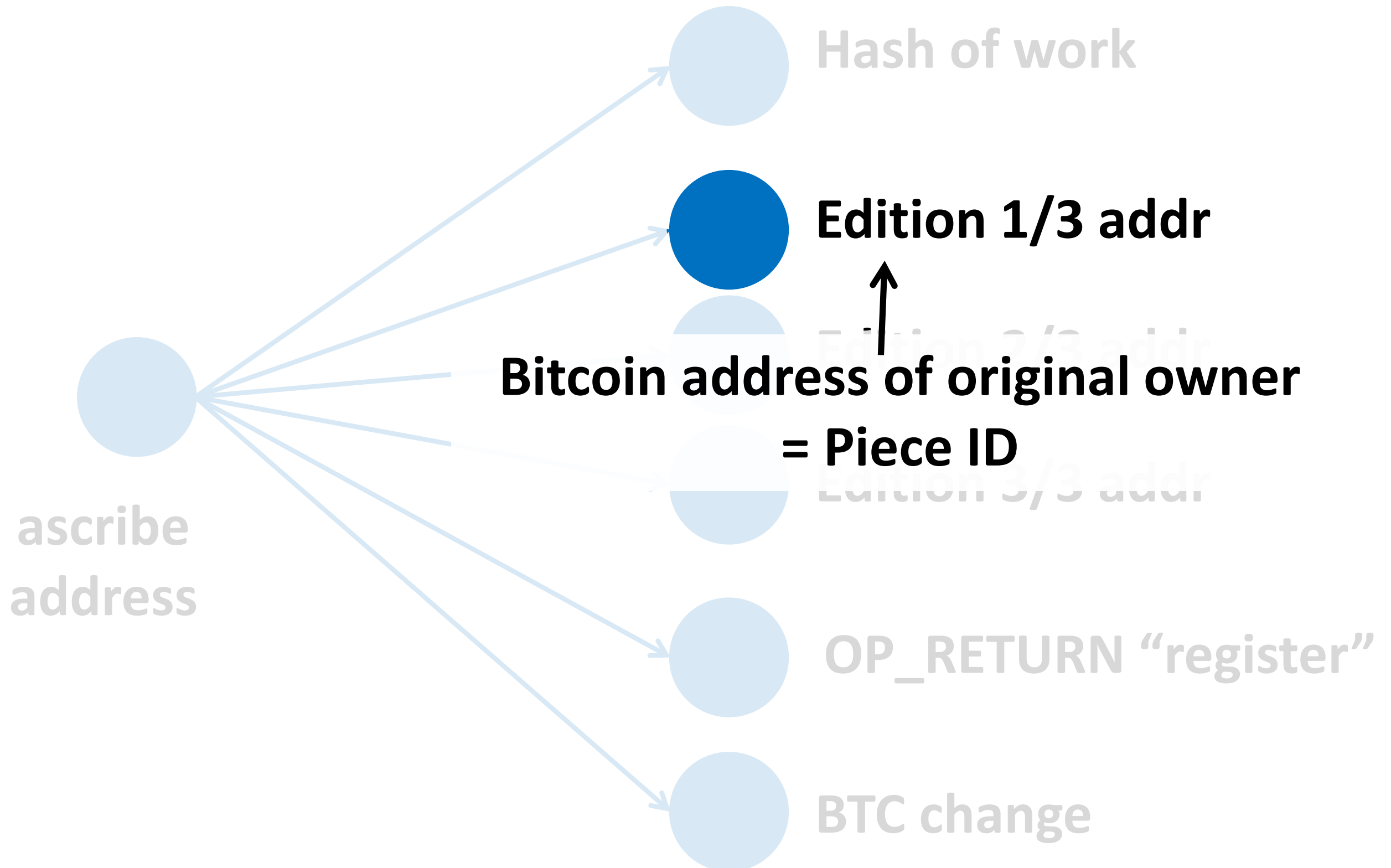
Bitcoin overlay (SPOOL):

Provenance emerges naturally



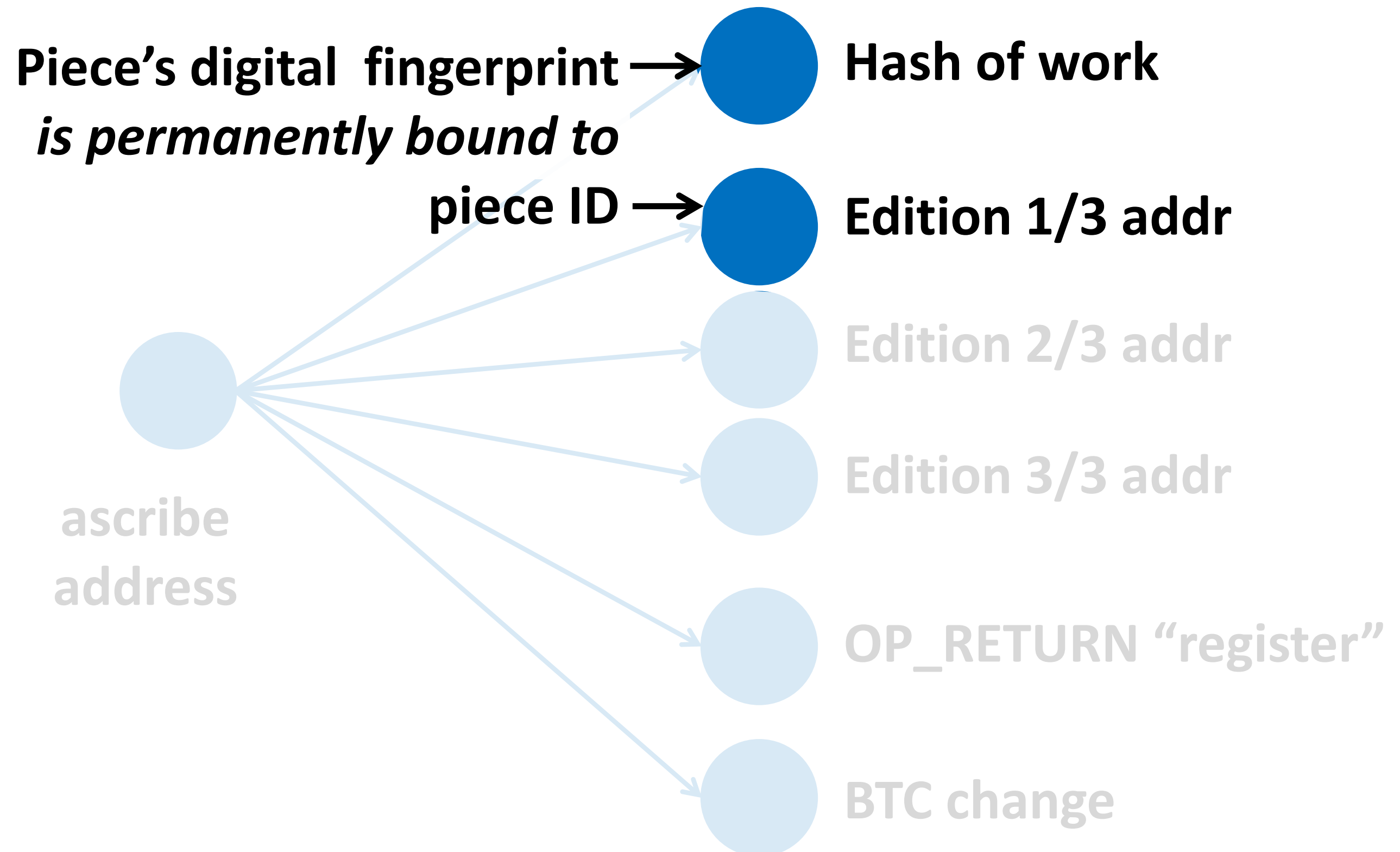
Bitcoin overlay (SPOOL):

Each edition of each work gets a unique ID

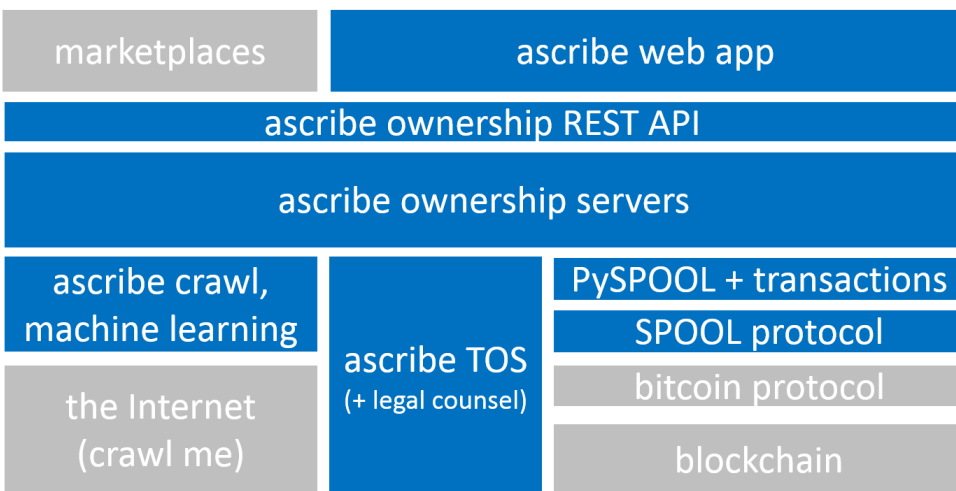


Bitcoin overlay (SPOOL)

Register tx binds work hash to piece IDs



Interface 2/4 on the ascribe stack



For pythonistas!



PySPOOL (ownership)

```
from spool import Spool

spool = Spool(testnet=True)

# lets refill the federation wallet with necessary fuel*7 and tokens*11 for this exam
txid = spool.refill_main_wallet(refill_root, federation_root[1], 7, 11,
                                refill_pass, min_confirmations=1, sync=True)

print txid
67d22e66ee46a96e94f08bed0c857f23de39aee8b25db5fa0369c495e072e44c
```



transactions (ez btc txs)

```
from transactions import Transactions

transactions = Transactions(testnet=True)
tx = transactions.simple_transaction('mqXz83H4LCxjf2ie8hYNs')
tx_signed = transactions.sign_transaction(tx, "master secret")
txid = transactions.push(tx_signed)
print txid
```

PySPOOL Details

<https://github.com/ascribe/pyspool>

Now that we have enough funds in the Federation wallet user1 can ascribe its master edition. A master edition is a register with edition number 0 that ascribes the piece to user1 making him the original owner/creator of the piece. Master editions are ascribed to the user's root address of the HD wallet

```
# user1 registers the master edition of piece with file_hash
txid = spool.register(federation_root, user1_root[1], file_hash,
                     federation_pass, 0, min_confirmations=1, sync=True)

print txid
f67aa26b5f47e83124040970246c969d04ec9adecc5a97d60754a0f54355ee81
```

PySPOOL Details

<https://github.com/ascribe/pyspool>

Now that an edition is registered the user can transfer ownership to another user. Transferring ownership implies a transaction originating from user1 wallet address holding the edition. This means that we need to fuel user1 wallet with the necessary funds before performing a spool transaction

```
# refill user1 wallet before transfer
txid = spool.refill(federation_root, user1_leaf[1], 1, 1,
                   federation_pass, min_confirmations=1, sync=True)

print txid
45bc2a3eecac9b5538a3b5bc325e94fcffee47c0025e78ece426aeebfac59c24

# now we can transfer ownership of edition 1 from user1 to user2
txid = spool.transfer(user1_leaf, user2_leaf[1], file_hash,
                     user1_pass, 1, min_confirmations=1, sync=True)

print txid
38509a49b00f3c3c3fadedd2c5ce35ffcc05a9737a36dd1b7ff00ed1ffe5fd80
```

45bc2a3eecac9b5538a3b5bc325e94fcffee47c0025e78ece426aeebfac59c24
38509a49b00f3c3c3fadedd2c5ce35ffcc05a9737a36dd1b7ff00ed1ffe5fd80

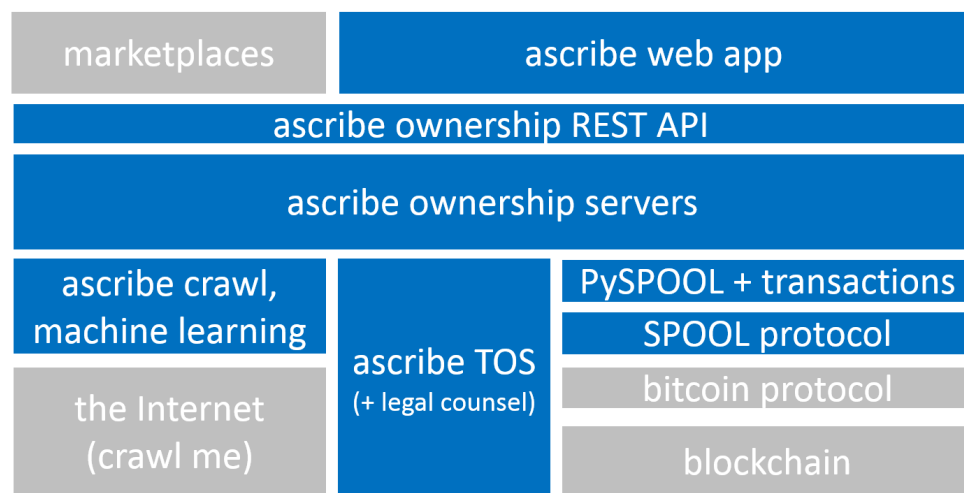
“transactions” details

<https://github.com/ascribe/transactions>

```
from transactions import Transactions

transactions = Transactions(testnet=True)
tx = transactions.simple_transaction('mqXz83H4LCxjf2ie8hYNs')
tx_signed = transactions.sign_transaction(tx, "master secret")
txid = transactions.push(tx_signed)
print txid
```

Interface 3/4 on the ascribe stack



For marketplaces of digital goods (art, photography, 3d, ..) to answer “where’s my stuff” for their users, and themselves

REST API

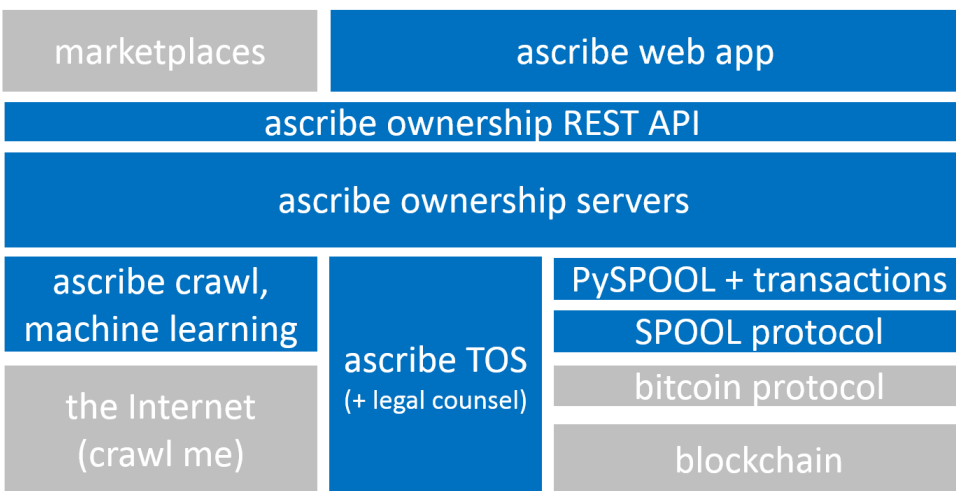
```
Format (mandatory; optional)
POST https://www.ascribe.io/3d/api/0.1/piece

Headers:
  Authorisation: Bearer <token id>

Body:
  user_email=<email of a Makx user>
  &file_url=<points to a url where the f
  &asc-hash-md5=<hash of the file, e.g.
  &asc-sig-foo=<a digital fingerprint us
  &asc-sig-bar=<a digital fingerprint us
  &asc-sig-...=<a digital fingerprint us
  &title=<title for the piece>
  &artist_name=<name of artist for the p

Example:
POST
https://www.ascribe.io/3d/api/0.1/pieces \
?user_email=user32%40makx.com \
&file_url=https%3A%2F%2Fmakx.s3.amazonaws.co
&asc-hash-md5=BECA1234809CFE4789729837C \
&asc-sig-bar=37829473fjio3r0934hknfsdliu3840
```

Interface 4/4 on the ascribe stack



WEB APP

For individual creators (artists, graphic designers, photographers, writers, ..) who want to register, consign, and archive their work directly.

And for individual galleries.

And for collectors.

The screenshot shows the registration interface of the WEB APP. At the top, there is a teal box containing a file upload preview for 'btc.png' (15.1kB) with a 'DELETE' button. Below this, the text 'Step one: lock down title' is displayed. The form includes several input fields: 'Artist's Name', 'Artwork Title', 'Year Created', and 'Number of Editions'. A note states: 'This input is final and cannot be edited later. Additional details can be added after registration.' At the bottom, there are two buttons: 'REGISTER' and 'CANCEL'.

Certificate Of Authenticity

As of 30 November 2015, 17:36:00 GMT, Masha (Maria) McConaghy is the owner.
To verify current owner, please visit <http://ascr.be/1luAOpo>



DOLLAR
EURO
SWISS FRANCS
JEFF KOONS
BITCOIN

Currency

Date: 2014

Edition: 3 of 100

Created by: Dan Perjovschi

Owner: maria.mcconaghy@yahoo.com

ARTWORK DETAILS

Artwork ID: 17uZBwSbLGfXy3vRRMWzF5PMjFVNc1tkQ2

File: currency-2014.jpg (499 KB)

PROVENANCE/OWNERSHIP HISTORY

Apr. 30, 2015, 12:36:19 - Registered by mail@cointemporary.com

May. 01, 2015, 09:46:08 - Transferred to admin

May. 08, 2015, 13:04:59 - Transferred to trent

Nov. 27, 2015, 19:35:14 - Transferred to maria.mcconaghy@yahoo.com

CRYPTOGRAPHIC STAMP

Use the summary and signature below to authenticate this certificate:
<http://ascr.be/1Sr45Q>

Summary: Dan Perjovschi*Currency*3/100*2014*2015Apr30-12:36:19

Signature: 438B24CE06182FA3AA82BC285F867D03FB73F3BCC0F73FDBA6
EC2BFF7088E011E60355B7DC75D5745A9D5CA2A8115512FF835
C4ABEF6869BF6A991668A820F3FB03A48C6A9E05834716F6500
68E8E07E5266620BA815948DC265605D23FAF016CB46ACD4BC
BE75F08D0DEBD7AF55E4CB085B9A0A14583F135DBB399121B24
ED1L

Blockchain-backed,
digitally signed COA

scribe®

Jonathan Monaghan
Escape Pod
2015, 3 editions

ID: 1P1EumqcJoxMMGf79WwdkFn7uCRBeNaCR8

ascribed digital
art at bit forms
NYC

<http://ascri.be/1KfMJt0>




Creative Commons FR

With CC licenses of course!

A screenshot of the Ascribe registration form. The header includes the Creative Commons France logo and the Ascribe logo, with links for '+ NEW WORK' and 'COLLECTION'. The main heading is 'Register under a Creative Commons license'. The form fields are: 'Your Work' (a dashed box with 'Drag file here or choose a file to upload' button), 'Artist Name' (with example 'e.g. Andy Warhol'), 'Title' (with example 'e.g. 32 Campbell's Soup Cans'), 'Year Created' (with example 'e.g. 1962'), 'Copyright license...' (a dropdown menu showing 'CC-BY-NC-ND-4.0: Attribution-NonCommercial-NoDerivs 4.0 International' and a link to 'Learn more about cc-by-nc-nd-4.0 (ascribe faq)'), and a checkbox for 'Specify editions'. A 'Submit' button is at the bottom.

<http://ascri.be/1K1Mjt0>

A low-angle photograph looking up at the ornate, vaulted ceiling of a grand museum hall. The ceiling features intricate architectural details, including ribbed vaults and decorative panels with classical motifs. Warm, golden light illuminates the space, highlighting the textures of the stone and plaster. Several small, circular recessed lights are visible in the ceiling. The perspective creates a sense of height and grandeur.

152-year old art museum
MAK Vienna bought ascribed
digital art to its collection

<http://ascri.be/1datNRs>

ikonoTV

Creators register content via ascribe,
then license it to ikonoTV

(300M TV viewers, 100K+ app users, top app)

Berlin Art Prize tech platform:
349 artists ascribed 598 works

Berlin Art
Prize

DEADLINE
01.10.2015

On 13
awards
with a

APPLY NOW!

<http://ascri.be/1E3eUck>

cointemporary

A temporary online exhibition of art for bitcoin

Harm van den Dorpel

Event Listeners

2015

OS X Screensaver

Duration: loop / infinite

Digital Edition of 100

— Artist Vita

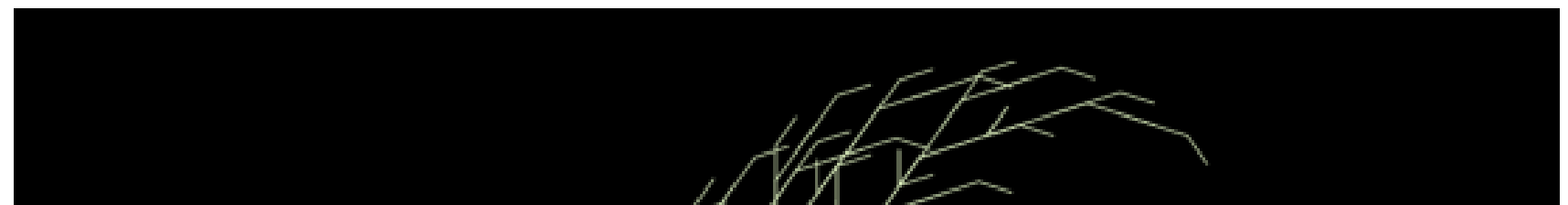
— Description of Work

— Artist Statement

Online art gallery
Cointemporary sells ascribed
digital art, for *bitcoins*



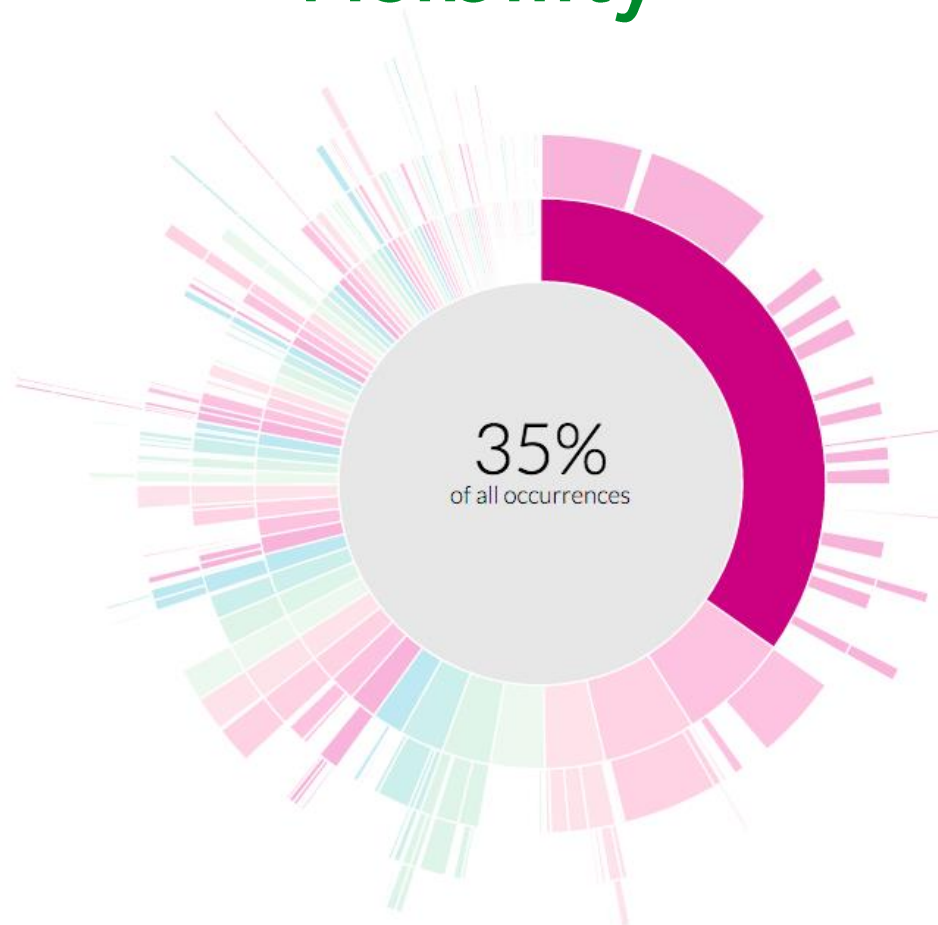
Preview



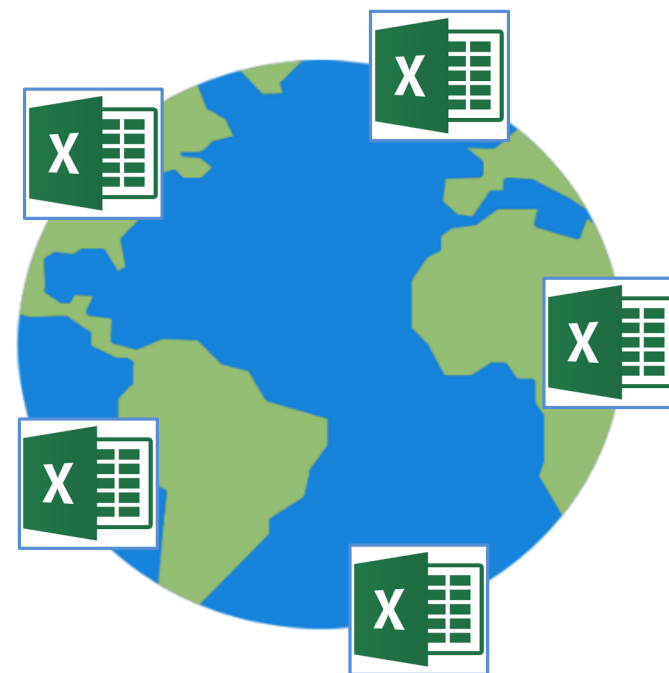
Where's my stuff?



Visibility



Easy, secure
legals



Where's my stuff?



The diagram shows the title 'Where's my stuff?' split into two parts. The first part, 'Where's', is underlined with a blue line, and a blue arrow points down from it to the word 'Visibility'. The second part, 'my stuff?', is underlined with a purple line, and a purple arrow points down from it to the phrase 'Easy, secure legals'.

Visibility

whereonthe.net

Easy, secure
legals

ascribe.io

Big data & blockchain technology*
are key to building an ownership
layer for the internet.

*Scalable versions...



ascribe[®]

Trent McConaghy, CTO

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