Business NFTs

Combining NFTs With Private Off-Chain Data

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The decentralized financial supply chain

Today:
Making invoices crypto-native (with NFTs)

Converting off-chain asset to on-chain token

Why?
- Prove ownership
- Trade
- #BUIDL new stuff

Vast majority of assets are not crypto native today

Vast majority of data should not be on chain

Privacy
Scalability

All Data Public == OK

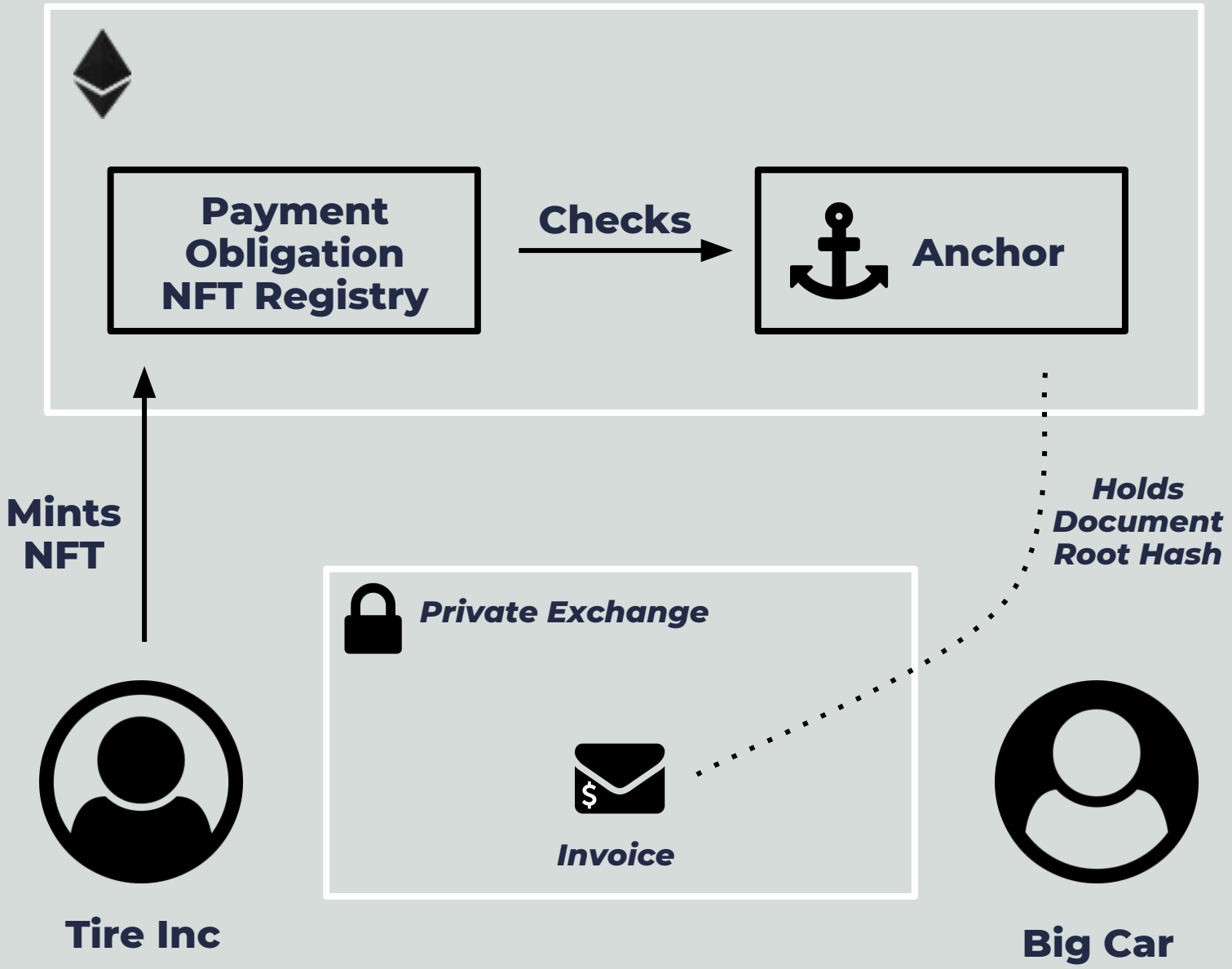
- Collectibles
- Game items
- Land/Property titles
- … public data in general

All Data Public == BAD

- Personally Identifiable Information
- Medical/health data
- Business “secrets”
- Legal contract details
- … secret & private data in general

So let's talk about Invoices

Example:
Tokenize Invoice
Get on-chain funding
100% decentralized


Payment Obligation NFT Registry
Checks
Anchor
Mints NFT
Holds Document Root Hash
Private Exchange
Invoice
Tire Inc
Big Car

We have:
On-Chain Anchor
“Containing” all off-chain data

How to allow anyone to turn this document into an NFT?

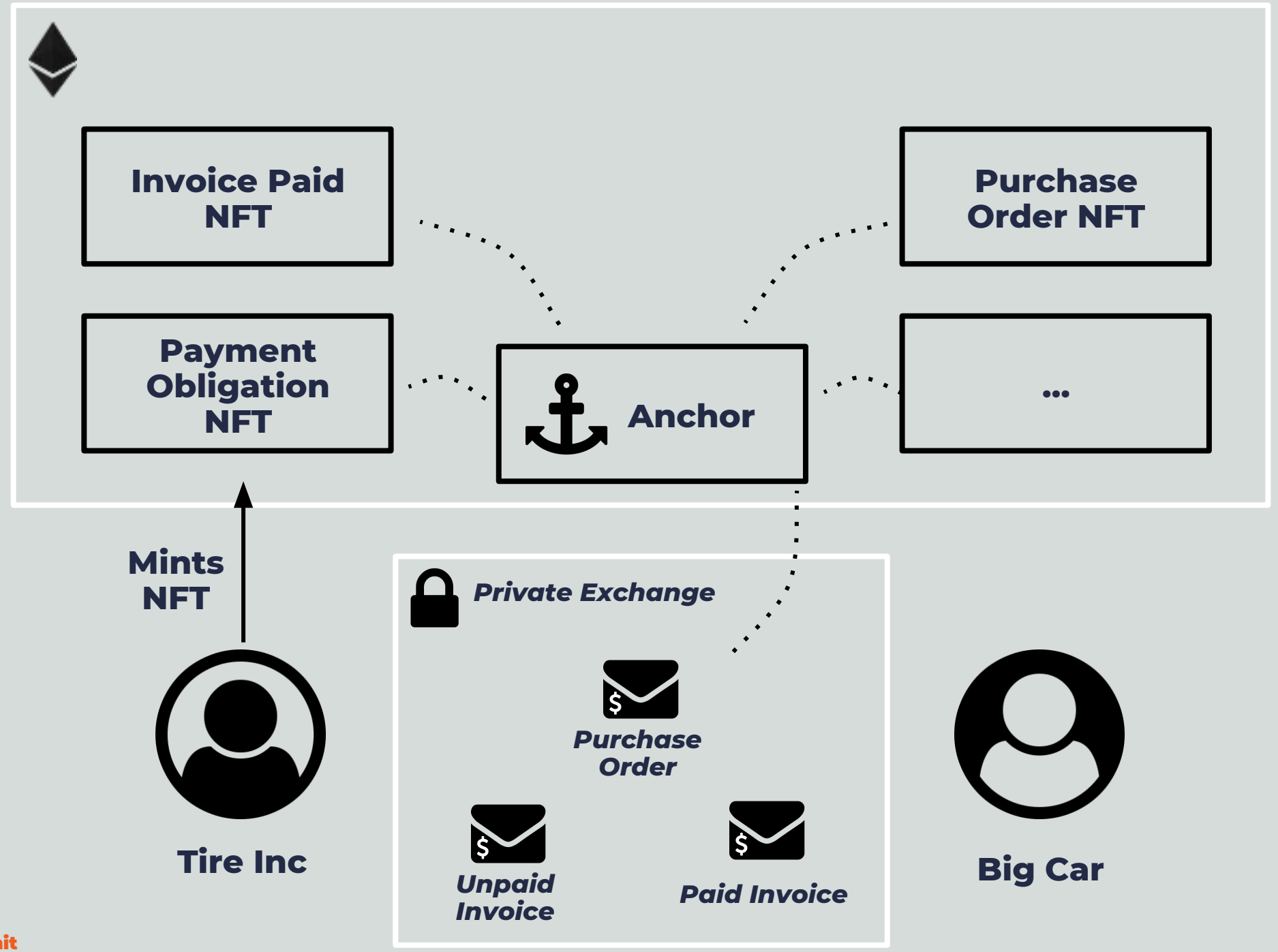
Merkle proofs to validate mint transaction

```
function mint(
    address _to,
    uint256 _tokenId,
    uint256 _anchorId,
    bytes32 _merkleRoot,
    string[3] _values,
    bytes32[3] _salts,
    bytes32[][3] _proofs
) public
{ … }
```

Proofs for Payment Obligation NFT

- Unpaid invoice
- No other Payment Obligation NFT
- Amount, Currency, ...
- Minter is Supplier

NFT registry verifies proofs & mints token

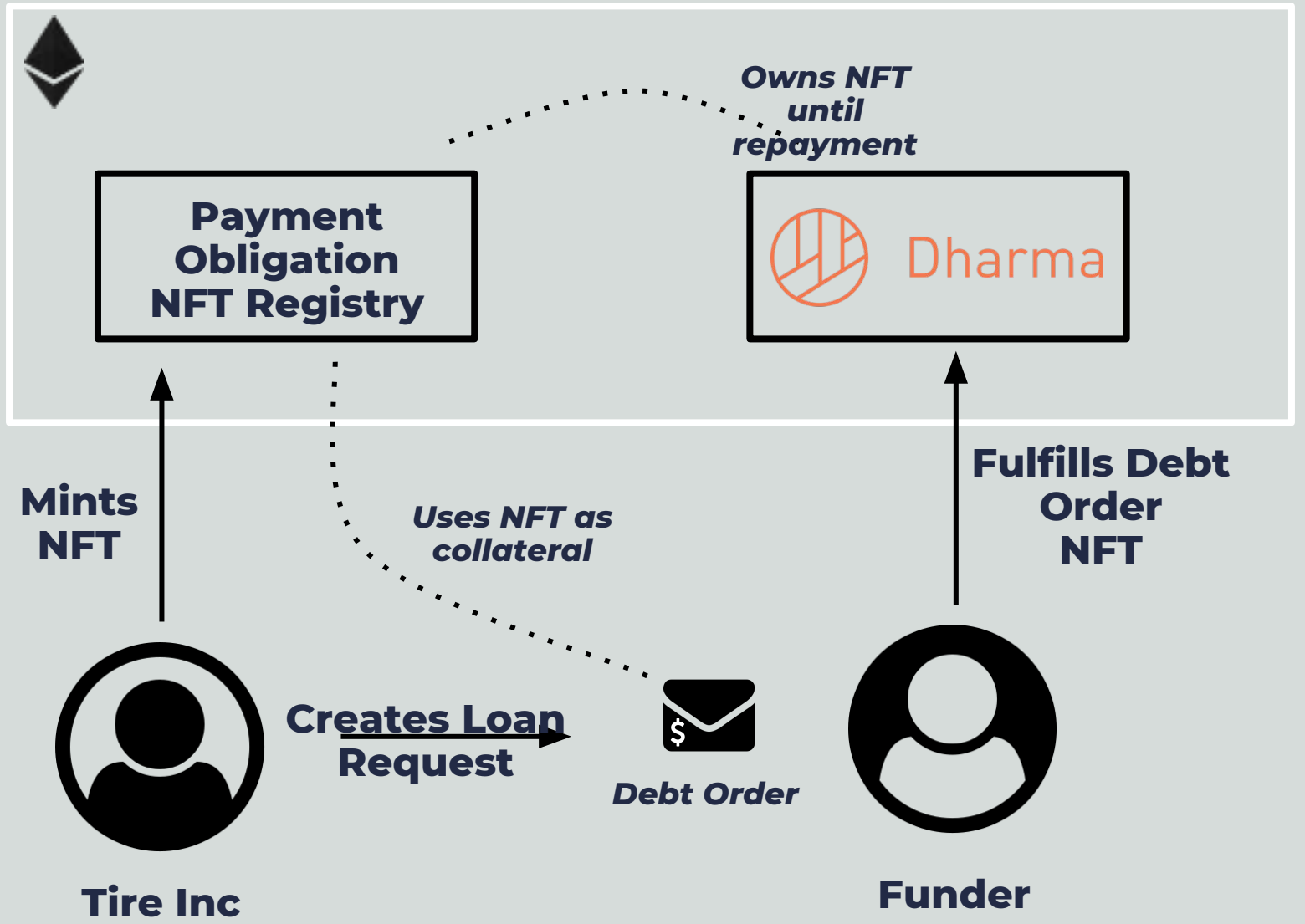

Invoice Paid NFT
Purchase Order NFT
Payment Obligation NFT
Anchor
...
Mints NFT
Private Exchange
Purchase Order
Unpaid Invoice
Paid Invoice
Tire Inc
Big Car

Funding for the unpaid invoice?

One example.

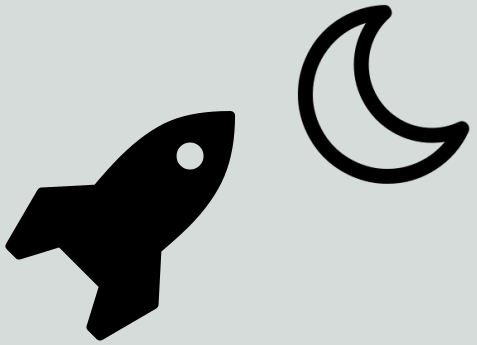
ERC-721 as collateral

Dharma


Owns NFT until repayment
Payment Obligation NFT Registry
Dharma
Mints NFT
Uses NFT as collateral
Fulfills Debt Order NFT
Creates Loan Request
Debt Order
Tire Inc
Funder

Trade invoice on DEX
Lock in Maker CDP
Securitize invoices
Central funder (bank)
...

Other “Business NFTs”



- Paid invoice unlocks goods
- Financing Purchase Order
- Mint token for multiple documents -> Reputation
- “Re-fungible” the invoice
- …

All the details

Privacy-Enabled NFTs
github.com/centrifuge/paper-privacy-enabled-nfts

Sample implementation
github.com/centrifuge/privacy-enabled-erc721-base

Thank You

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