

Code as law

THE TECH-LEGAL IMPLICATIONS OF SMART CONTRACTS


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What is a contract?

- ❑ A contract is a private agreement between two or more individuals/entities, in verbal, written, or other agreed form, that regulates the relationship between them, subject to the laws of the land.
- ❑ Subject matter: Obligation to give, to do, or not to do (*Cap 16, Art 982(1)*)



*A CONTRACT IS THE
LAW BETWEEN THE
PARTIES, IN WHATEVER
FORM THEY AGREE
UPON.*



What is a smart contract?

□ A piece of code executed on a blockchain



□ Ethereum, Qtum, Cardano, Neo, Waves, Stratis

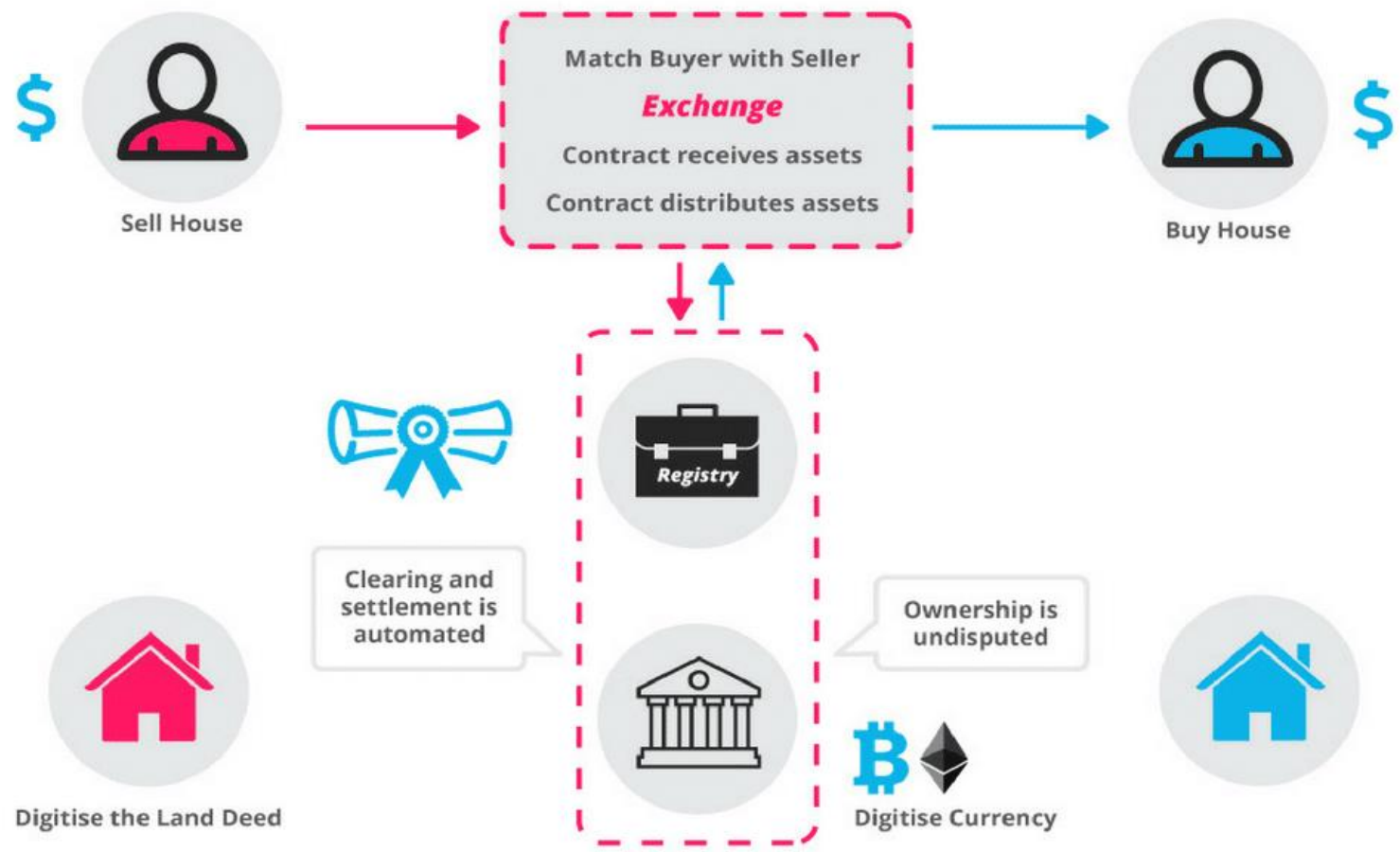
□ Written by developers



□ Agrello, BOScoin, BlockCat – smart contracts in a form similar to normal English



How Smart Contracts Works



Example of a smart contract

```
HL*1**20*1~
NM1*PR*2*Premium Gold Insurance
Co.*****PI*0123456~
HL*2*1*21*1~
NM1*1P*1*Back*Has*Your***XX*9876543210~
HL*3*2*22*0~
TRN*2*89368DC6A14E4E529AA876ED416E8A9F*14539154
17
NM1*IL*1*A-lot*Lifts***MI*MEM10001~
N3*2150 Pleasant Drive~
N4*Sunny*CA*900010001~
DMG*D8*19820315*M~
DTP*291*D8*20141001~
EB*B**98****10~
EB*A**33*****.20~
```

```
{
  "coverage": [
    {
      "coinsurance": [
        {
          "benefit_percent": 0.2,
          "service_types": [
            "chiropractic"
          ]
        }
      ],
      "copay": {
        "copayment": {
          "amount": "10",
          "currency": "USD"
        },
        "service_types": [
          "professional_physician_visit_office"
        ]
      }
    }
  ],
  "payer": {
    "id": "0123456",
    "name": "Premium Gold Insurance Co."
  },
  "provider": {
    "first_name": "Has-Your",
    "last_name": "Back",
    "npi": "9876543210"
  },
  "plan_begin_date": "2014-10-01",
  "service_types": [
    "professional_physician_visit_office", "chiropractic"
  ],
  "subscriber": {
    "address": {
      "address_lines": [
        "2150 Pleasant Drive"
      ],
      "city": "Sunny",
      "state": "CA",
      "zipcode": "90001"
    },
    "birth_date": "1982-03-15",
    "first_name": "Lifts",
    "last_name": "A-Lot",
    "id": "MEM10001"
  },
  "trading_partner_id": "premium_gold",
  "valid_request": true
}
```

Benefits of smart contracts

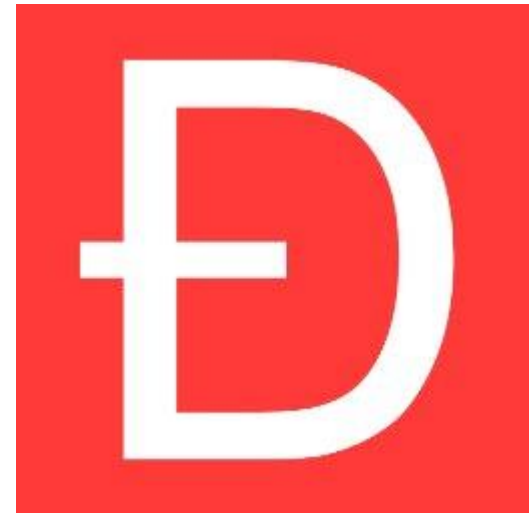
- ❑ Trust and backup – Your documents are encrypted on a shared ledger
- ❑ Safety – Cryptography, the encryption of websites, keeps your documents safe. There is no hacking. In fact, it would take an abnormally smart hacker to crack the code and infiltrate.
- ❑ Speed – smart contracts use software code to automate tasks, thereby shaving hours off a range of business processes.
- ❑ Savings – Smart contracts save you money since they knock out the presence of an intermediary
- ❑ Accuracy – Automated contracts are not only faster and cheaper but also avoid the errors that come from manually filling out heaps of forms.

The issue of self-government

- ❑ *“The choice is not whether people will decide how cyberspace regulates. People, or rather, coders will. The only choice is whether we collectively will have a role in their choice, and thus in determining how these values regulate; or whether collectively we will allow the coders to select our values for us.” – Lawrence Lessig*
- ❑ Self-government is no longer a pipe dream, and will become the norm...
- ❑ ...only if we lived in a utopia.

The DAO incident

- ❑ Agreement that the code of the DAO will be the governing law between the parties
- ❑ In case of conflict between daohub.org and the code itself, code prevails
- ❑ Code to supersede even any subsequent public statements
- ❑ A bible of disclaimers
- ❑ June 17, 2016 – DAO attack
- ❑ The attacker exploited part of the code



What we learned

- Coders can be stupid
- Investors can be stupid
- The damage was scaled back through a hard fork – did damages ensue?
- Unspoken law of immutability was broken
- An open, public blockchain is not a plaything

The enforcement of smart contracts

- ❑ Automatically enforceable
- ❑ ADR rather than courts
- ❑ Counter smart contracts rather than delete



Can you do another draft of this? There's still a couple of sentences people might actually understand...

The future of smart contracts

- ❑ A gap between the declarative and operative parts
- ❑ Turing-complete vs non-Turing complete
- ❑ Immutability becomes a problem
- ❑ Dumb down smart contracts?
- ❑ Supplemented by “normal” contracts
- ❑ Without real AI, we can never have truly smart contracts



Q & A

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