Blockchain – What's it all about & Practical Applications

Somil Goyal, COO Adjoint at BCS Event on 7th March
+44 7985 964 387
somil@adjoint.io

My brief today

- **Discuss distributed ledger technology**
- How it **extends the traditional database model**
- Using **smart contracts within the finance industry** as example

About Somil

Somil Goyal is the **COO of Adjoint**. He is an experienced financial services executive with background in **trading, banking and technology**. He has worked for **Deutsche Bank** across asset classes and geographies, as well as in consulting for banking, capital markets and commodities customers at **EY** and **Deloitte**.

https://www.adjoint.io/pages/team.html

https://www.linkedin.com/in/somil-goyal-0421567/

About Adjoint

Adjoint offers a **smart contract platform** and **distributed ledger solutions** designed to improve efficiency, security, and compliance in **modern finance**. Its revolutionary **messaging and consensus** protocol – based on the latest research in cryptography, type systems and formal verification – allows enterprises to quickly **deploy, maintain, verify and execute smart contracts** globally. Such technology helps enterprises reduce costs, mitigate risks and improve margins. Founded in 2016, the company has offices in Boston, MA and London, UK. For more information, please visit www.adjoint.io

Reference I will use

- Adjoint Uplink: https://www.adjoint.io/pages/pruplink.html
- Product documentation: https://www.adjoint.io/docs/
- Downloads
  - https://www.adjoint.io/pages/downloads.html
  - https://www.adjoint.io/pages/sdk.html
- Testnet
  - http://dev.chain.adjoint.io/

Discuss distributed ledger technology

It is a database to processes transactions and stores data much like any system, but in a way which is useful for solving some challenges. In our opinion it has three core **distinguishing ideas**:

- Everywhere the same
- The record is permanent
- No one is in charge

These properties help us to build **self-reconciling processes** that allow participants to construct real-life agreements and workflows between each other.

Please see https://www.adjoint.io/docs/introduction.html#distributed-ledgers

Extends the traditional database model

Secure Multiparty Databases allow different types of applications

Please see https://www.adjoint.io/docs/architecture.html
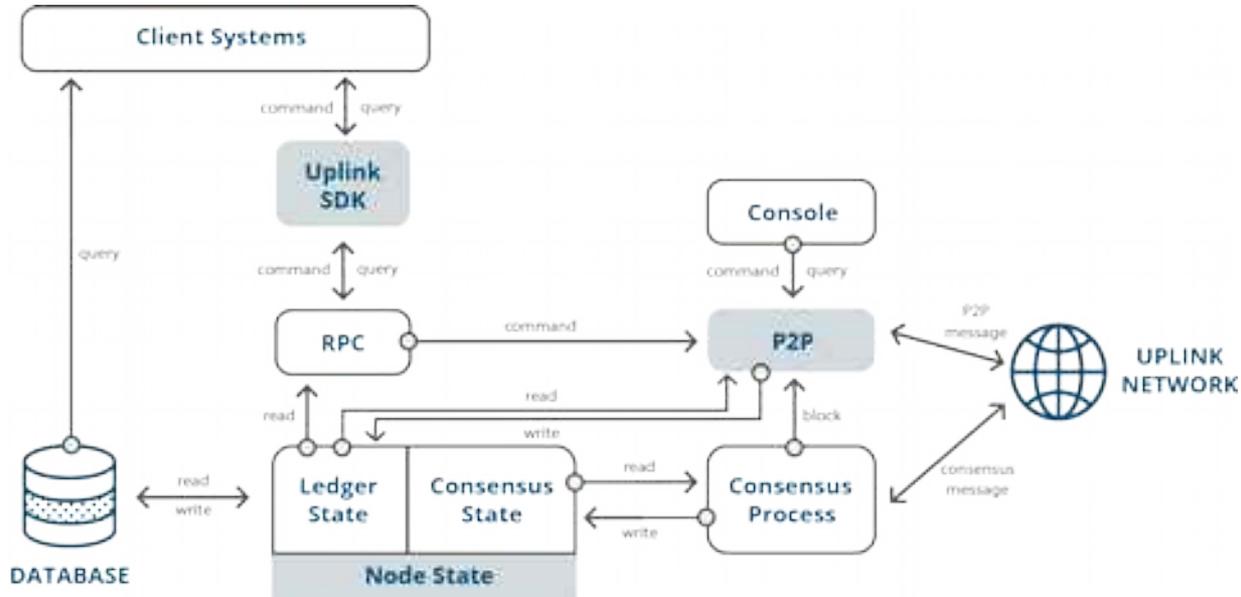
Smart contracts within the finance industry - 1/2

There is a lot of literature on this topic in crypto/ blockchain/ DLT world. A lot of it is liberal with truth and practicality, so please be careful. At its very basic, and as applied to finance, a smart contract = **terms and workflow** of a financial contract

These **contracts** change rights and obligations of **participants** with respect to **assets**. These work in context of

- **Time**, e.g. I will pay you £10 tomorrow
- **Participant actions**, e.g. I will pay you £10 on demand
- **State of world**, e.g. I will pay you £10 + interest @ SONIA

We may think of these simply as stored procedures on a financial database, e.g. a bank ledger, a stock register or a derivatives book

Smart contracts within the finance industry - 2/2

Real life possibilities of such contracts are many and varied: FX, Equities, Bonds, Loans, Derivatives, Structured Products, Funds, Insurance (parametric or indemnity), Purchase & Sale Agreements, etc. They all need four factors to be attractive:

- **Functionality**, i.e. does the program do what my commercial intent is. This is the starting point.
- **Non-functional** parameters, e.g. scalability, privacy, latency, etc. This has been Achilles' heel of public blockchains.
- **Value**, i.e. is this worth doing. This is easier to do in niches than globally.
- **Confidence**, i.e. do I trust the program. This takes time to build. There are some properties of such contracts (e.g. determinism, totality, verifiability) which can provide confidence for financial players. Please see https://www.adjoint.io/docs/contracts.html

Closing thought

Why do we do this?

Because there is **something rotten in the state of finance**.