# Building Trust Networks for a Distributed World

Richard Caetano
stratumn

# Everything is a Workflow

**Yet, today's workflows are "Black box" systems**

Asymmetric Information
Synchronization & Complexity
Exposure to Private Data

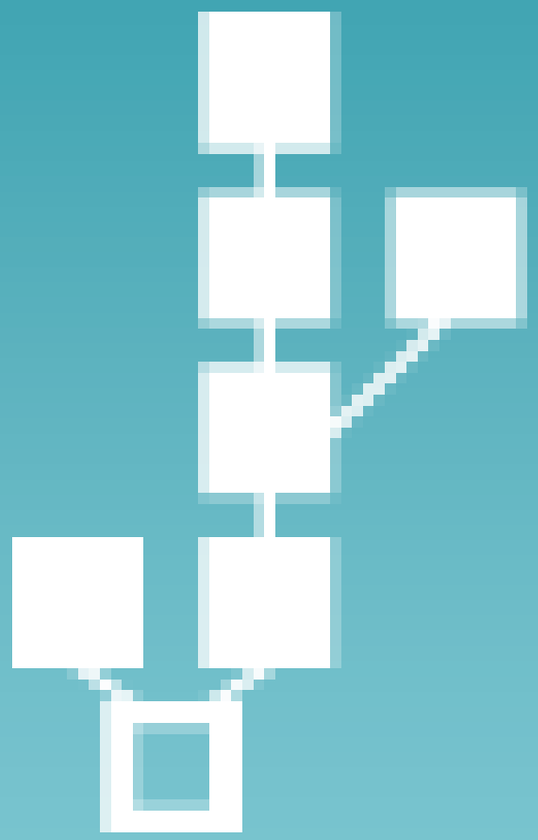
*Difficult to Audit & Regulate*

# The Regulator

Regulators, Auditors, Counterparties
enforce the rules

What if we bring the blockchain to the business workflow?

# Blockchain Networks



Time Stamping & Immutability
Cryptocurrencies & Tokens
Transactions & Multiparty Sigs
Smart Contracts

*It’s a decentralized trust system*
*BUT how do we integrate with existing systems?*

# Trust Networks

HIERARCHICAL SYSTEM

PEER TO PEER SYSTEM

Trust exists in various forms between different systems.
The mission is to make them interoperable.

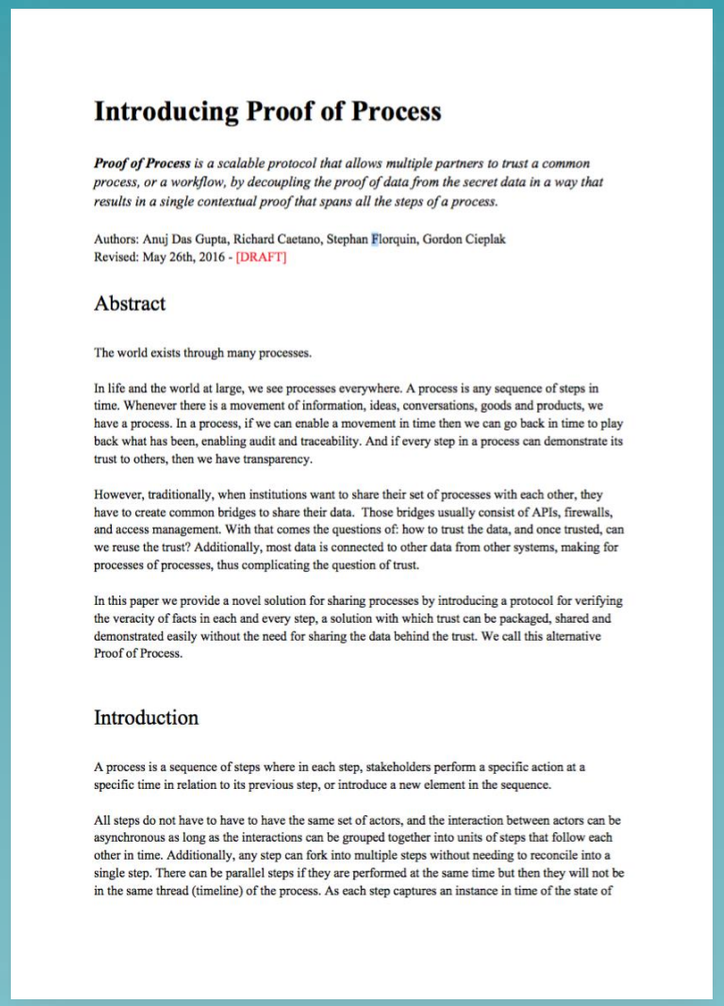
# Proof Systems

A prover must be able to convince
the verifier of a fact

# Share proofs not data

Zero knowledge proof systems allows the sharing of proofs to convince the verifier

# Proof of Process



**Introducing Proof of Process**

***Proof of Process*** *is a scalable protocol that allows multiple partners to trust a common process, or a workflow, by decoupling the proof of data from the secret data in a way that results in a single contextual proof that spans all the steps of a process.*

Authors: Anuj Das Gupta, Richard Caetano, Stephan Florquin, Gordon Cieplak
Revised: May 26th, 2016 - [DRAFT]

Abstract

The world exists through many processes.

In life and the world at large, we see processes everywhere. A process is any sequence of steps in time. Whenever there is a movement of information, ideas, conversations, goods and products, we have a process. In a process, if we can enable a movement in time then we can go back in time to play back what has been, enabling audit and traceability. And if every step in a process can demonstrate its trust to others, then we have transparency.

However, traditionally, when institutions want to share their set of processes with each other, they have to create common bridges to share their data. Those bridges usually consist of APIs, firewalls, and access management. With that comes the questions of: how to trust the data, and once trusted, can we reuse the trust? Additionally, most data is connected to other data from other systems, making for processes of processes, thus complicating the question of trust.

In this paper we provide a novel solution for sharing processes by introducing a protocol for verifying the veracity of facts in each and every step, a solution with which trust can be packaged, shared and demonstrated easily without the need for sharing the data behind the trust. We call this alternative Proof of Process.

Introduction

A process is a sequence of steps where in each step, stakeholders perform a specific action at a specific time in relation to its previous step, or introduce a new element in the sequence.

All steps do not have to have to have the same set of actors, and the interaction between actors can be asynchronous as long as the interactions can be grouped together into units of steps that follow each other in time. Additionally, any step can fork into multiple steps without needing to reconcile into a single step. There can be parallel steps if they are performed at the same time but then they will not be in the same thread (timeline) of the process. As each step captures an instance in time of the state of

A scalable protocol that allows multiple partners to trust each other within the context of a process or workflow.

Developed since 2015 through our partners and customers.

# Programmable Rules

Audits, regulations, and execution
are coded into the process

# Use Cases for PoP

Enables objective and transparent regulation of…

KYC & Compliance
Document Rights & Consent
Health Records & Medical Research
Legal Processes
Business Supply Chain

# The Stratumn Team

Richard Caetano, *CEO*
Stephan Florquin, *CTO*
Sebastien Courture, *Community*
Francois Dorleans, *Finance*

Anuj Das Gupta, *Platform Architect*
Nicolas Julia, *Strategic Development*
Gordon Cieplak, *Director of Product*
Adrien Montfort, *Senior Developer*
Anton Zuenko, *Blockchain Engineer*

An international team with many years of combined Bitcoin and Blockchain experience

# What’s next?

Ask for a copy of “*Introducing Proof of Process*”

hello@stratumn.com