

Smart Contracts Use Cases in Insurance

BLOCKCHAIN
INSURANCE
SUMMIT

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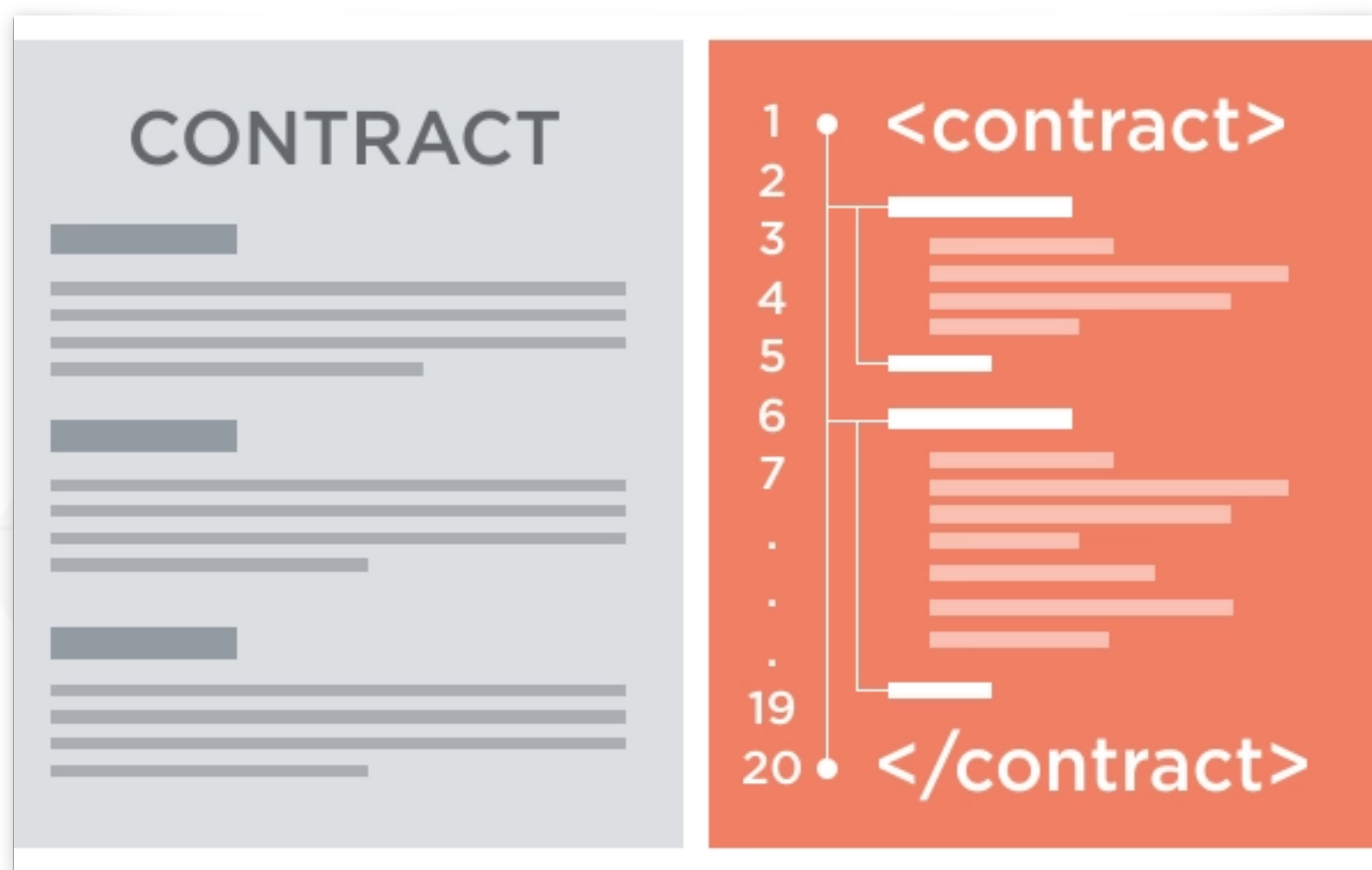
SMART CONTRACTS USE CASE #1

Original Definition: A machine programmed with rules that we could have defined in a contract, instead machine performs or verifies performance





WHAT ARE SMART CONTRACTS?



Two or more parties agree to run software between them, or one party and the blockchain

A long-lived blockchain process that handles money & blockchain-titled assets (distributed applications or fiduciary processes) using conditional logic (dapps)



SMART CONTRACTS & THE LAW

- Relationship between smart contracts and traditional law
- Enforceable? Possible examination of the guts of the vending machine or user interface
- Smart contracts - rules and contracts executed like in a vending machine (dry code)
- Traditional contract - verbal text on paper, interpreted by humans, or lawyers (wet code)



WHY SMART CONTRACTS?

- Costs of problems - trust and security - across borders - different languages, laws, jurisdictions
- Vulnerability minimization - trust minimization - “trustless”
- Financial transactions - no need to trust human “middleman”



FIDUCIARY RESPONSIBILITY

- Decentralization per computer science is much more automated and secure than traditional
- Humans - threat of going to prison if they don't give you their money back
- Computers - Machine that follows the rule is better than coercing the people in jail



BENEFITS OF SMART CONTRACTS FOR INSURANCE

- Bitcoin - Over 7 years old, most reliable financial technology ever deployed
- Ethereum - newer system, considered Turing complete
- Smart contracts could provide an immediate and efficient payout of claims
- Smart contracts on the blockchain could help reduce fraud through transparency



INSURANCE CONTRACT - ORACLES

- Oracles - ability of a machine to take input from outside world and provide input to smart contracts
- Taking input from outside and using them to provide input to contracts
- Not a huge advance as smart contracts
- Smart contracts can take inputs from the outside through oracles



BASIC USE CASE — ASSURANCE CONTRACT

- Many parties are in an “on-blockchain” pool of funds
- Blockchain code keeps track of the total
- When the total exceeds a threshold, the money is sent to a beneficiary
- If total not exceeded, returned back to donor
- Examples:
 - ★ Groupon
 - ★ Kickstarter



BENEFITS IN THE INSURANCE LIFECYCLE

- Efficiency in the Underwriting
- Speed for the Claimant or the Beneficiary
- Savings for the Insurer
- Payments made seamlessly across borders
- Transparency and audit of process smooth



USE CASES FOR INSURANCE

•• SCENARIO ••

- Insurance pays into a blockchain pool
- Insured makes a claim, “I have been damaged according to ...”
- Current State - Adjuster / Group of Claims Adjusters / Review Process

•• QUESTIONS ••

Laws governing claims adjusters?
Who sets rates and on what criterion?

**ELIMINATION OF SUBJECTIVITY OF
UNDERWRITING AND CLAIMS**



INSURANCE CLAIMS ADJUSTER BENEFITS

- Claims-handling could become more efficient and streamlined, resulting in an improved customer experience
- Reduce fraud - no more “crash for cash” or exploiting the current challenges of sharing data



SMART PROPERTIES - PROPERTY CASUALTY INSURANCE

- Tamper evidence bag - setting up cryptographic authority for key cards
- Police evidence rooms - serial numbers - sealed up (put serial number on the blockchain) - not only with the evidence in the bag but the information that is reported from it remains protected as well
- Deeds and trust - confirmation of who owns land



SMART CONTRACTS REDUCE FRAUD IN INSURANCE

- Customers and insurers able to coordinate claims management in a transparent, responsive, and irrefutable manner
- Contracts and claims could be recorded onto a blockchain and validated by the network, ensuring only valid claims are paid
- The blockchain will reject multiple claims for one accident because the network would know a claim had already been made
- Smart contracts also enforce the claims - triggering payments automatically when certain conditions are met and validated (reduction in customer wait time)



BENEFITS OF A SMART CONTRACTS ADJUSTER

- Claims Adjustment is Subjective and Controversial
- Wet, Brains of Code vs. Dry, On Computers
- Ubercab (wrong legal category) — Switched to Rideshare
- Radical increase in computer costs due to mining; Replication (Broadcasting redundantly, increases networking costs and decreases performance for security and integrity)
- Works the same everywhere and doesn't depend on law enforcement

*Saving pennies at the cost of
thousands of dollars*

*Software following rules (anyone
that can read the computer
program, can audit it)*



Autonomous Vehicles Are Growing:

Nevada was the first state to allow the use of
autonomous vehicles in 2011

Since then, five other states—California, Florida,
Michigan, North Dakota and Tennessee and
Washington, D.C.—have passed autonomous
vehicle legislation



AUTO PREMIUMS LOWER

- Insurance Information Institute Pulse survey conducted in May 2016 found:
 - 55 percent of consumers say that they would not ride in an autonomous vehicle
 - Earlier polls found that 50 percent said that a driverless car's manufacturer should bear responsibility in case of an accident
 - Only 25 percent say that they would be willing to pay more for a driverless car to cover the manufacturer's liability in case of an accident
 - Other sources note a potential \$200 Billion loss in premiums for the auto industry as autonomous vehicles enter into the marketplace



INSURANCE FOR AUTOS

- According to the Insurance Institute for Highway Safety, it is anticipated that there will be 3.5 million self-driving vehicles by 2025, and 4.5 million by 2030
- However, the institute cautioned that these vehicles would not be fully autonomous, but would operate autonomously under certain conditions
- Smart Contracts for the Insurance Industry - Temporal Insurance





BAD TRAFFIC



BAD ROAD CONDITION



DRUNK DRIVING



BAD WEATHER



**SMART CONTRACTS ABLE TO
FACTOR IN CONDITIONS**



TIME OF DAY

TESLA AND GOOGLE



- Tesla Motors Inc. activated its 'Autopilot mode' which allows autonomous steering, braking and lane switching. In July 2016 the first fatality from an autonomous vehicle was reported
- The National Highway Traffic Safety Administration is investigating what role if any that the Tesla Motors Model S Autopilot technology had in a Florida collision between the vehicle and a tractor trailer
- Tesla said autopilot sensors failed to detect the truck, turning in front of a Model S, against a bright sky. The crash killed the vehicle's owner
- On June 6, 2016 a Google prototype autonomous vehicle (Google AV) was involved in a minor collision with no injuries. On June 15, 2016 a Google AV was rear-ended with no injuries
- <http://www.mirror.co.uk/news/world-news/google-self-driving-car-hits-7529261>



VEHICLE TO VEHICLE CONVERSATIONS

- February 2014 federal agencies approved vehicle-to-vehicle (V2V) communications systems that will allow cars to “talk” to each other so that they know where other vehicles are and can compensate for a driver’s inability to make the right crash avoidance decisions because of blind spots or fast moving vehicles
- V2V communication uses a very short range radio network that, in effect, provides a 360-degree view of other vehicles in close proximity
- The Department of Transportation estimates that safety systems using V2V communications will be able to prevent 76 percent of crashes on the roadway
- Smart contracts monitored by insurance companies could ensure safer transport

“VENDING” SMART CONTRACTS IN INSURANCE

- Transparency - insure peer-to-peer flight insurance policies
- Automation - peer-to-peer supplemental unemployment insurance policies using social media to automate claims and underwriting
- Fraud Detection - verify products in the supply chain
- Emerging Markets - micro-insurances with reductions in handling costs
- Internet of Things - appliances with connected insurance policies



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