Blockchain-Enabled Prediction Markets

MetaMesh

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Sustainability.Exchange

1. Prediction Markets
2. To Make a Market
3. Blockchain
4. Payout rules
5. Liquidity
6. Oracles
7. Pitfalls

Prediction

- Forecast
- Guess
- Indicator
- Conjecture
- Survey
- Artificial Intelligence

Market

- Price discovery
- Arbitrage
- Multiple stakeholder

Is this a prediction market?

- Horse number 12 has 5:1 odds
- What are the chances it will win?
- Who contributed to that prediction?

Do you trust it?

Why does it work? “wisdom of the crowd”

- You take significant more care more if stand to gain or lose monetarily.
- It takes into account non-public information

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To Make a Prediction Market
(You must first create the “tickets/tokens”)

Set payout rules	Sell “All Tickets”	Determine winner	Payout winners
The person who bet on the winning horse takes all	Buy one of every ticket for $100	And the winner is….	$
The winning horse takes 60%, second place bets get 30% and third place gets 10%			
Other..			

A demo Prediction Market
"What is the word on the next slide?"

Set payout rules	Sell "All Tickets"	Determine winner	Payout winners
If the word on my page is "Defense" the pink ticket is worth $0.01, otherwise the yellow ticket is worth $0.01	For $0.01 you can buy one pink tickets and one yellow ticket	I'll tell you the word in five minutes	I'll give you the agree upon value of the pink and yellow tickets in five minutes

"Defense"

Not "Defense"

Defence

To Make a Prediction Market usable (There must be liquidity for tokens)

Set payout rules	Sell "All Tickets"	Determine winner	Payout winners
The person who bet on the winning horse takes all	Buy one of every ticket for $100	And the winner is….	$
The winning horse takes 60%, second place bets get 30% and third place gets 10%	Buy/Sell Tickets Betting on horse#12 costs $5 Betting on horse#5 costs $12		
Other..			

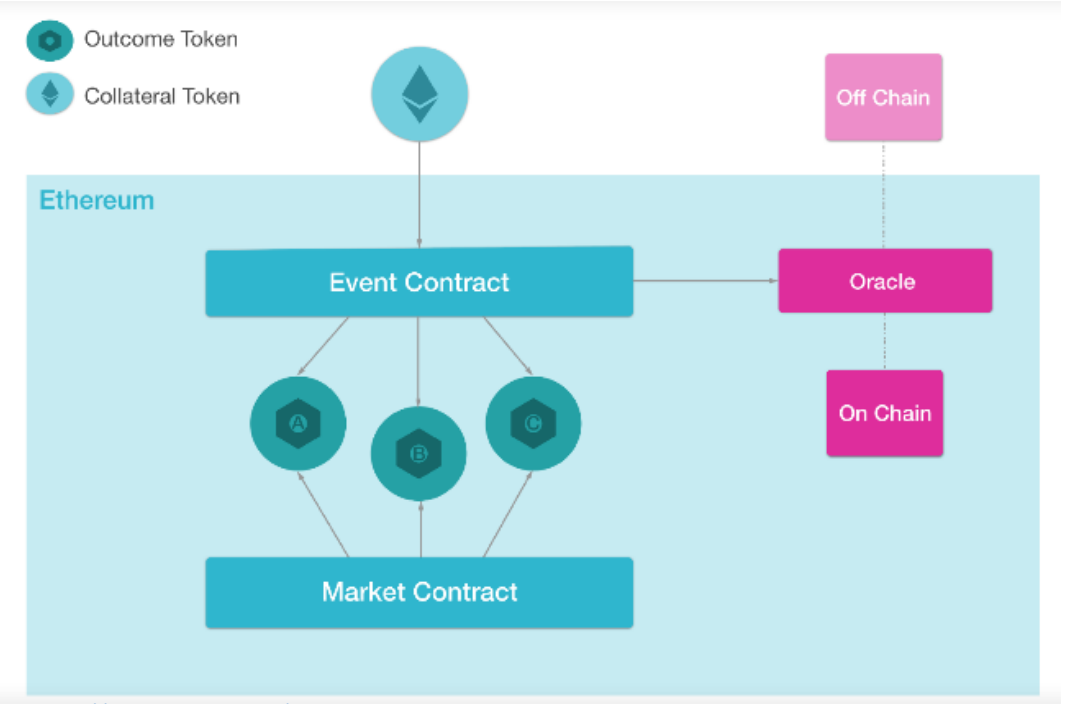
That's not what we agreed.
What if I don't want to pay what we agreed?

Set payout rules	Sell "All Tickets"	Determine winner	Payout winners
The person who bet on the winning horse takes all Blockchain The win… second place bets get 30% and third place gets 10% Other..	Buy one of every ticket for $100 Buy/Sell Tickets Betting on horse#12 costs $5 Betting on horse#5 costs $12	And the winner is….	Blockchain

How many markets…?
What about counterfeit tickets?

Set payout rules	Sell "All Tickets"	Determine winner	Payout winners
The person who bet on the winning horse takes all	Buy one of every ticket for $100	And the winner is….	$
The winning horse takes 60%, second place bets get 30% and third place gets 10%	Blockchain Buy/Sell Tickets		
Other..	Betting on horse#12 costs $5 Betting on horse#5 costs $12		

Mature blockchain prediction market platforms



https://blog.gnosis.pm/getting-to-the-core-4db11a31c35f

GNOSIS

augur

The Blockchain Prediction Markets Platform

DELPHY

Payouts can be pre-arranged in various ways

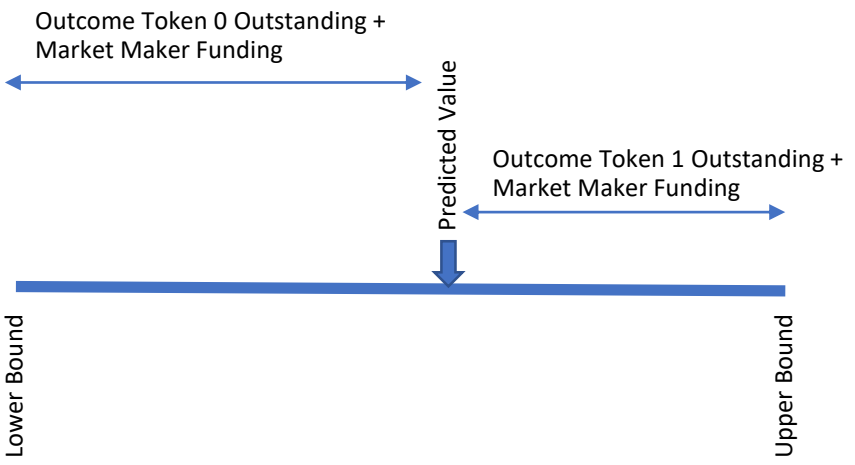
	Categorical	Scalar
Will trump win the 2020 election?	1) Yes 2) No	NA
What will the price of one common Tesla share be on Jan 1, 2019?	1) $0 2) $1-$100 3) $101-200$ 4) $201-$300 5) $301+	Lower Bound->$0 Upper Bound->$500
Who will win the sports event?	1) Team A 2) Team B 3) Team C	NA

Predictions of various payout types

Categorical => Predicted Likelihood

$$\frac{\text{Price of outcome token}}{\text{Price of collateral token}}$$

Scalar => Predicted Value



Every bet needs a counterparty

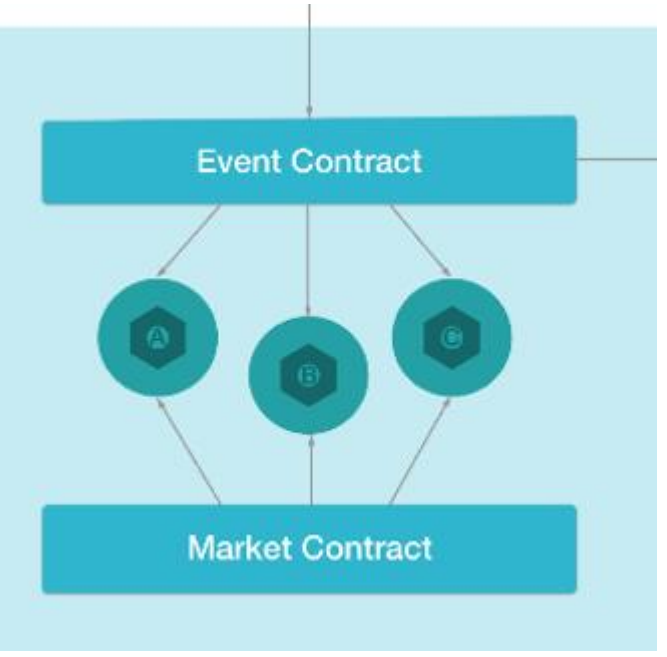
Logarithmic Market Scoring Rule

$$C = b * \ln(e^{q1/b}+e^{q2/b})$$

Change the price

Vs

Buy and sell shares

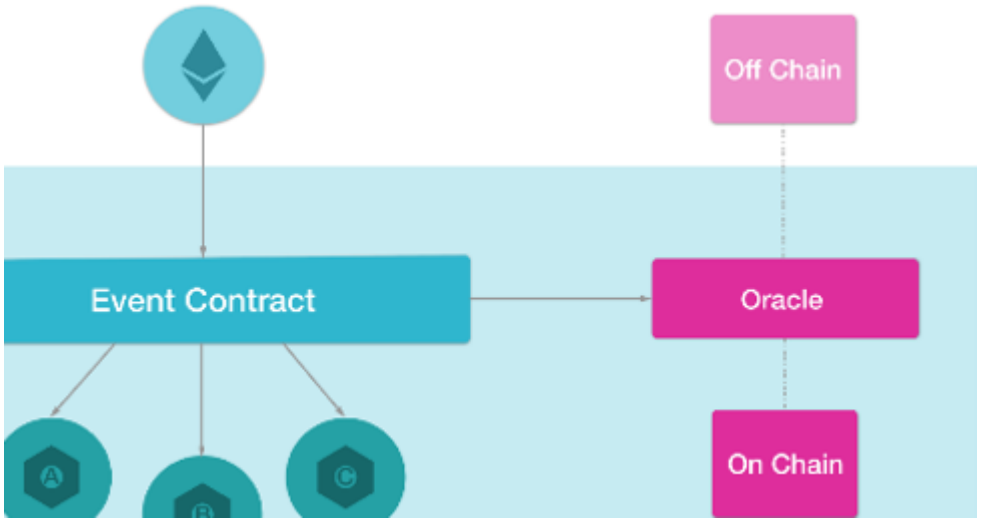


The contract needs to know the settled outcome

On-Chain Oracles

Centralized Oracles

Decentralized Oracles



Other considerations

Illegal bets

Technological complexity

Small markets to make big decisions

Funds are locked up

Discussion

"You're incentivizing people to really search for the truth."

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