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OPTIONS THEORY

LESSON 1
TERMINOLOGY AND BASICS

THIS LECTURE

- Review Terminology together (Q&A session)
- Electronic Marketplace (the other side of How Trading Floors Operate)
- Standardized Exchange Contracts
- Futures Contracts Basics

TERMINOLOGY – (Q&A)

General Trading Terms

- Bid: The price for which someone is willing to buy something.
- Offer: The price at which someone is willing to sell something.
- Size: The number of contracts (things) that are being traded.
- Make a market: Providing both a bid and offer for others to trade on.
- Spread: The difference between the best bid and the best offer.
- Hedge: To execute a trade that reduces the risk of your overall position
- Index: Something that tracks the performance of some market. S&P 500
- ETF: A tradeable basket of instruments (usually stocks) designed to track the performance of an index or group of securities.
- Commodity: Physical goods such as corn, wheat, gold, or oil.
- Paper: Other market participants (usually non-market makers).

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TERMINOLOGY – BASIC MARKET

Bid Qty	Bid Price	Theo	Ask Price	Ask Qty
145	930	945	960	240

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TERMINOLOGY – (Q&A)

Market Participants

- Trader: Someone who corresponds directly with brokers to buy and sell securities. A broad term often used interchangeably with market maker.
- Market Maker: A market participant who consistently provides a bid and ask spread (a market) in a product(s) and makes money off the bid ask spread. Akuna is a Market Maker.
- Local: A Market Maker, often a single person or small group, that is localized in one pit.
- Broker: An professional who buys/sells on behalf of clients. Brokers act as a go-between or middle-man between buyers/sellers in the marketplace.
- Hedge Fund/Institution/Bank: market participants who place orders in the marketplace.
- Retail Client: generally regarded as those who are not "smart money". Small size.

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TERMINOLOGY – (Q&A)

Options Specific Terms

- Fill: To complete all or part of an order.
- Queue Priority: The priority with which your order is filled. Often ranked first by price, and then by time of entry.

Example:

A	12:43:01.00	1.25 bid 30
B	12:43:01.02	1.25 bid 20
C	12:43:01.05	1.25 bid 250
D	12:25:00.00	1.24 bid 500

- Tick increment (size): The minimum increment between a price and the next price. 100.01, 100.02, 100.03,... (1 cent tick increments)
- All-or-None order: A trade type where either the trade is executed for it's entire size, or else none of it is executed.

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Question: If someone wants to sell, who do they trade with?

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1.25 bid 300

sell 20 at 1.25

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Example:

A	12:43:01.00	1.25 bid 30
B	12:43:01.02	1.25 bid 20
C	12:43:01.05	1.25 bid 250

trade!

sell 20 at 1.25

1.25 bid 300

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TERMINOLOGY – (Q&A)

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Example:

A	12:43:01.00	1.25 bid 10
B	12:43:01.02	1.25 bid 20
C	12:43:01.05	1.25 bid 250

1.25 bid 300

still first in line for 10 more!

- Tick increment (size): The minimum increment between a price and the next price. 100.01, 100.02, 100.03,... (1 cent tick increments)
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TERMINOLOGY – (Q&A)

Options Specific Terms

- Immediate-or-cancel (IOC) order: A trade type that is executed for either it's partial or full quantity, at (or better than) the limit price entered. Transacts instantaneously vs the market. The unfilled portion is immediately cancelled.
- GFD/GTC orders: order types that are good for day or good until cancelled by the originating party.
- Theoretical (theo) Value: Your fair value price for something
- Liquidity: The extent to which one can buy and sell large quantities of a stock/option/future without having to cross a large bid-ask spread and without moving the market. A function of size and width of the market.

HOW DO ELECTRONIC MARKETS WORK

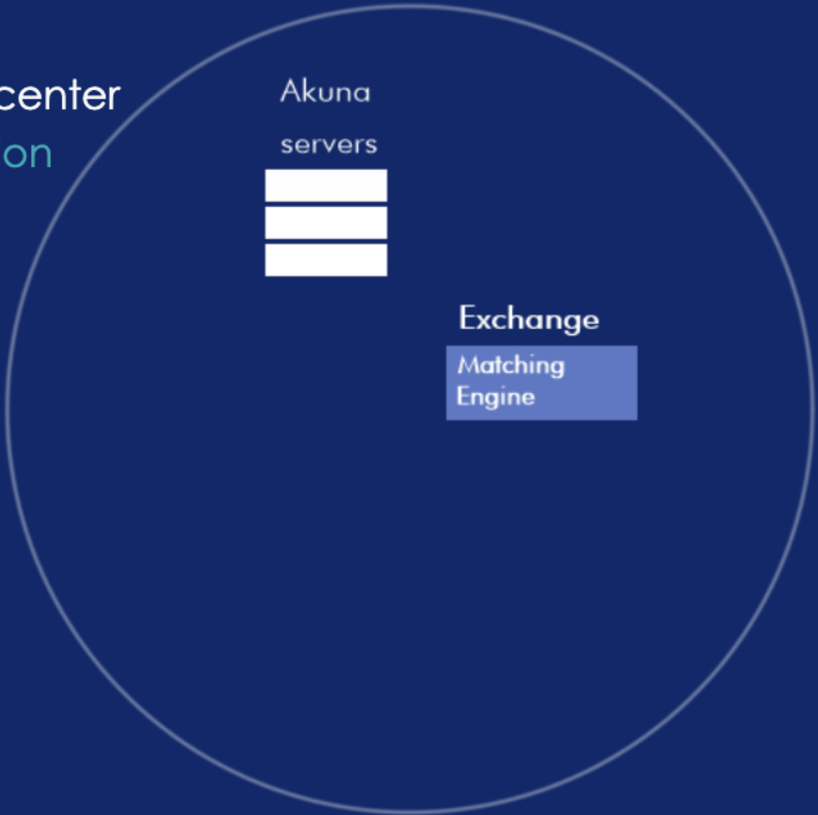
- We want our systems to be as close to the action as possible.
  - Reading data and reacting
    - Changing our markets
      - Queue priority!
    - Sending orders to execute trades

HOW DO ELECTRONIC MARKETS WORK

- Electronic Architecture

Data center

co-location



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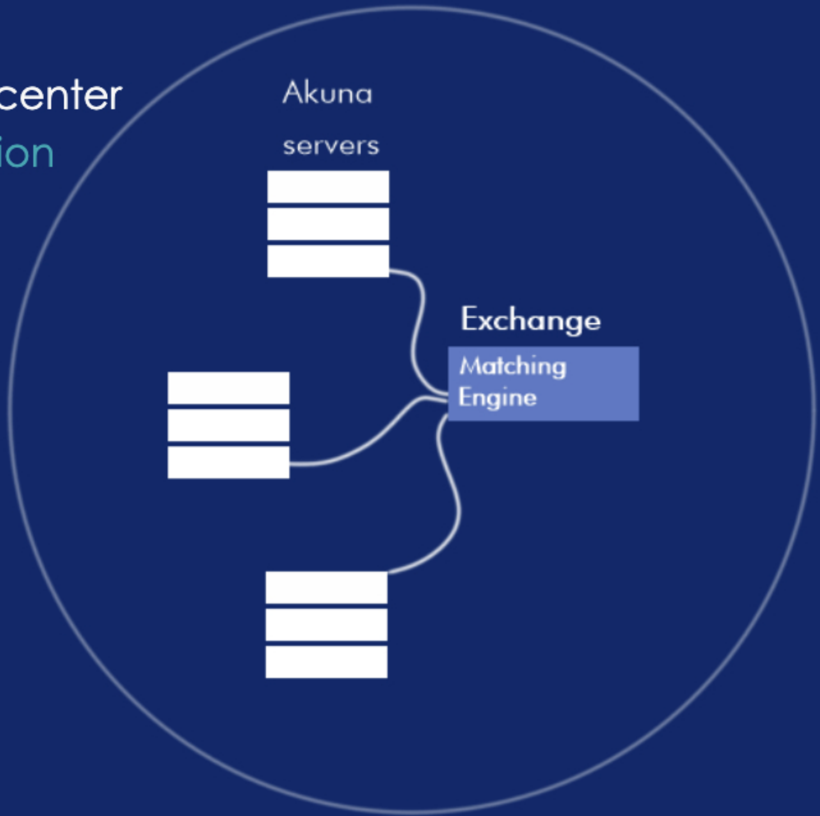

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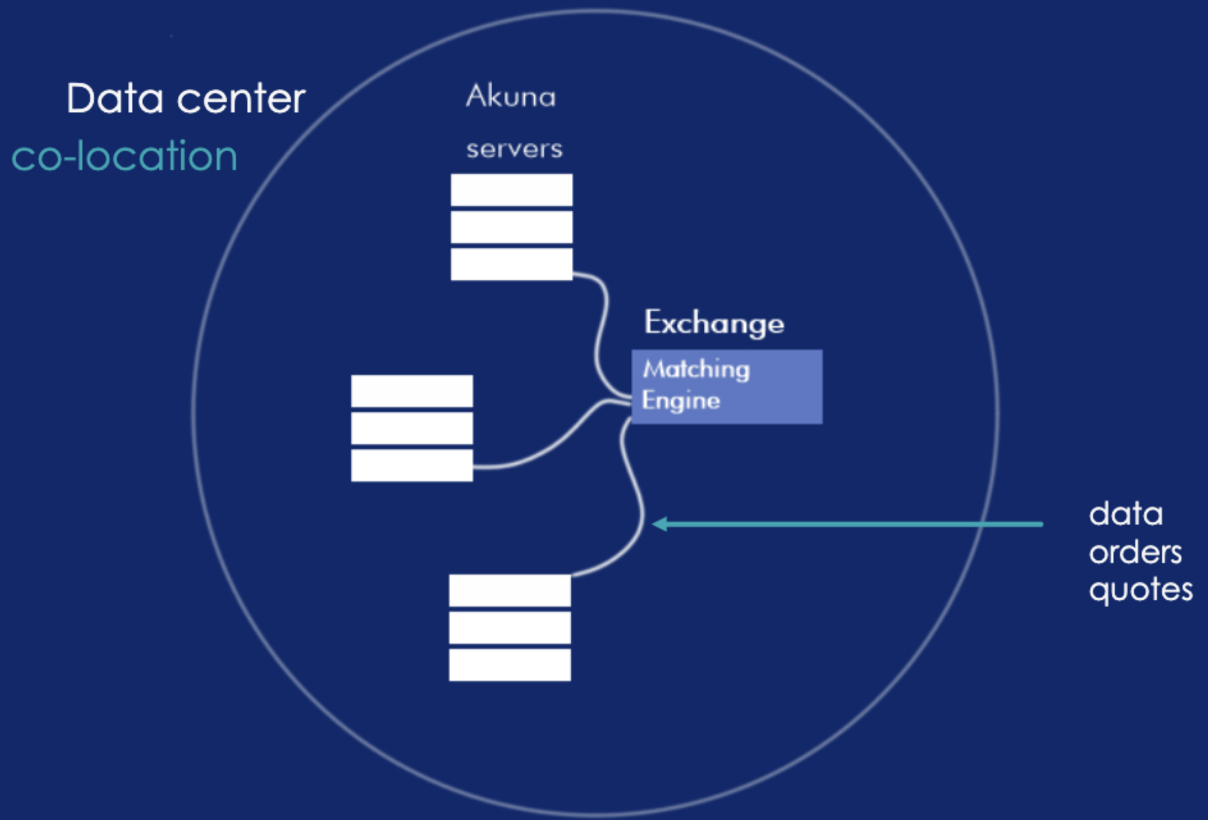

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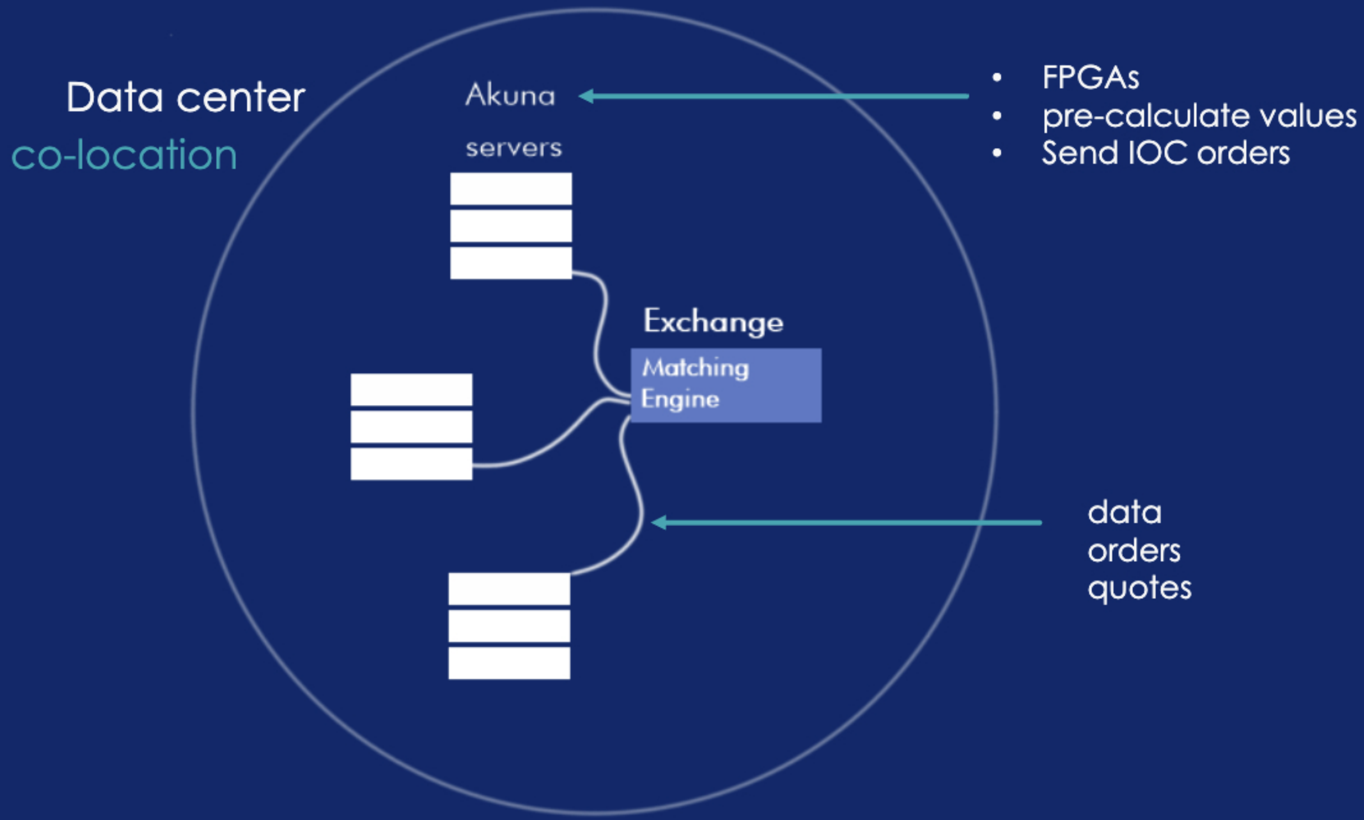

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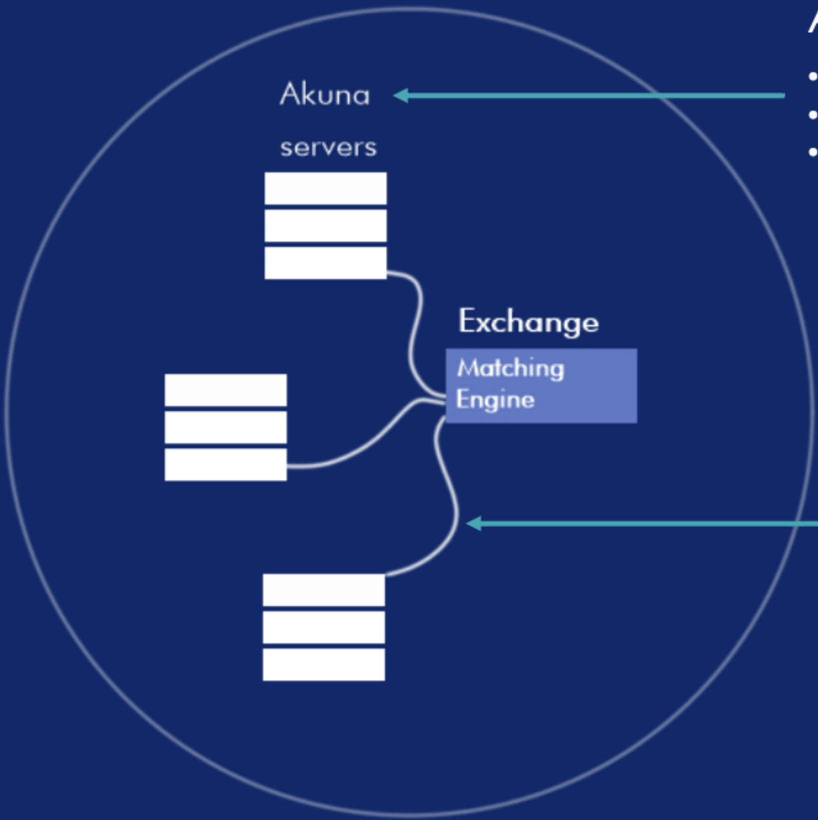

Anything that requires speed is done here!

- FPGAs
- pre-calculate values
- Send IOC orders

data
orders
quotes

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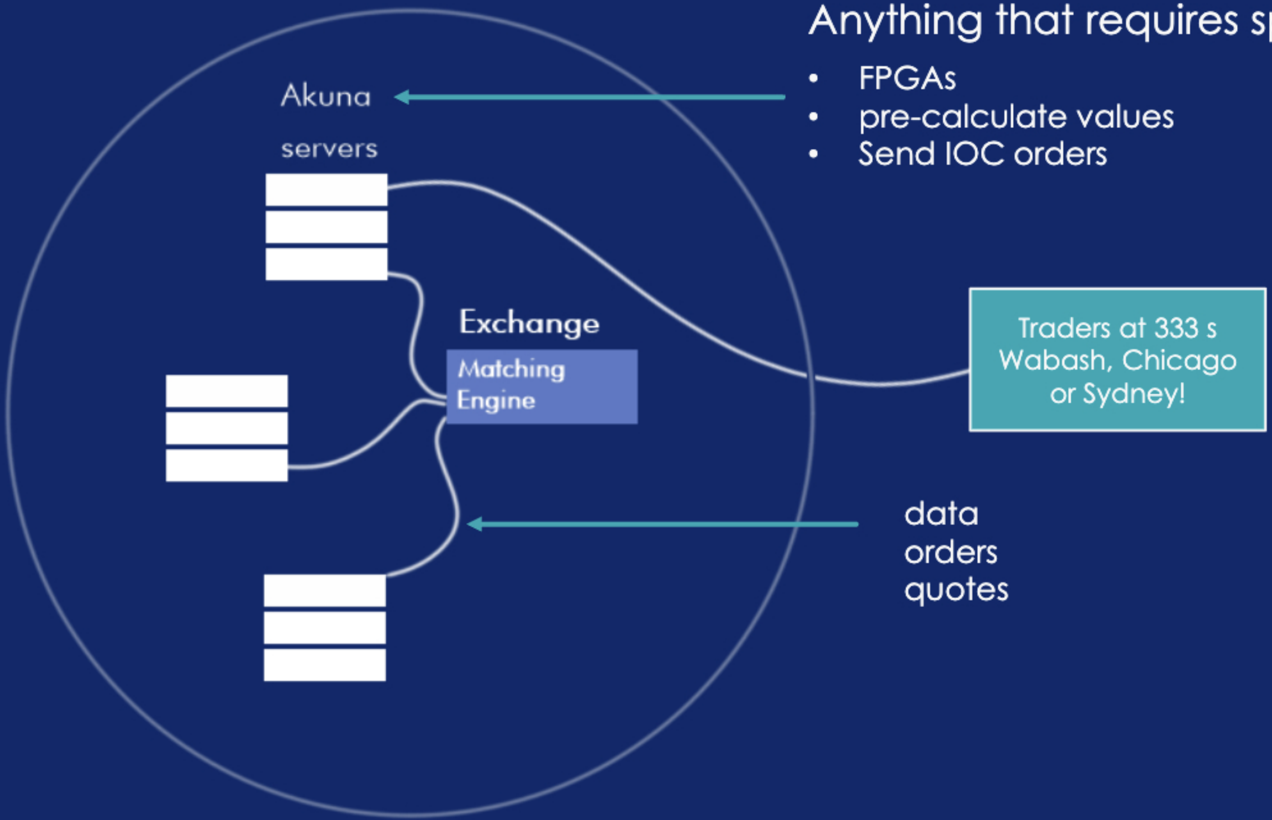

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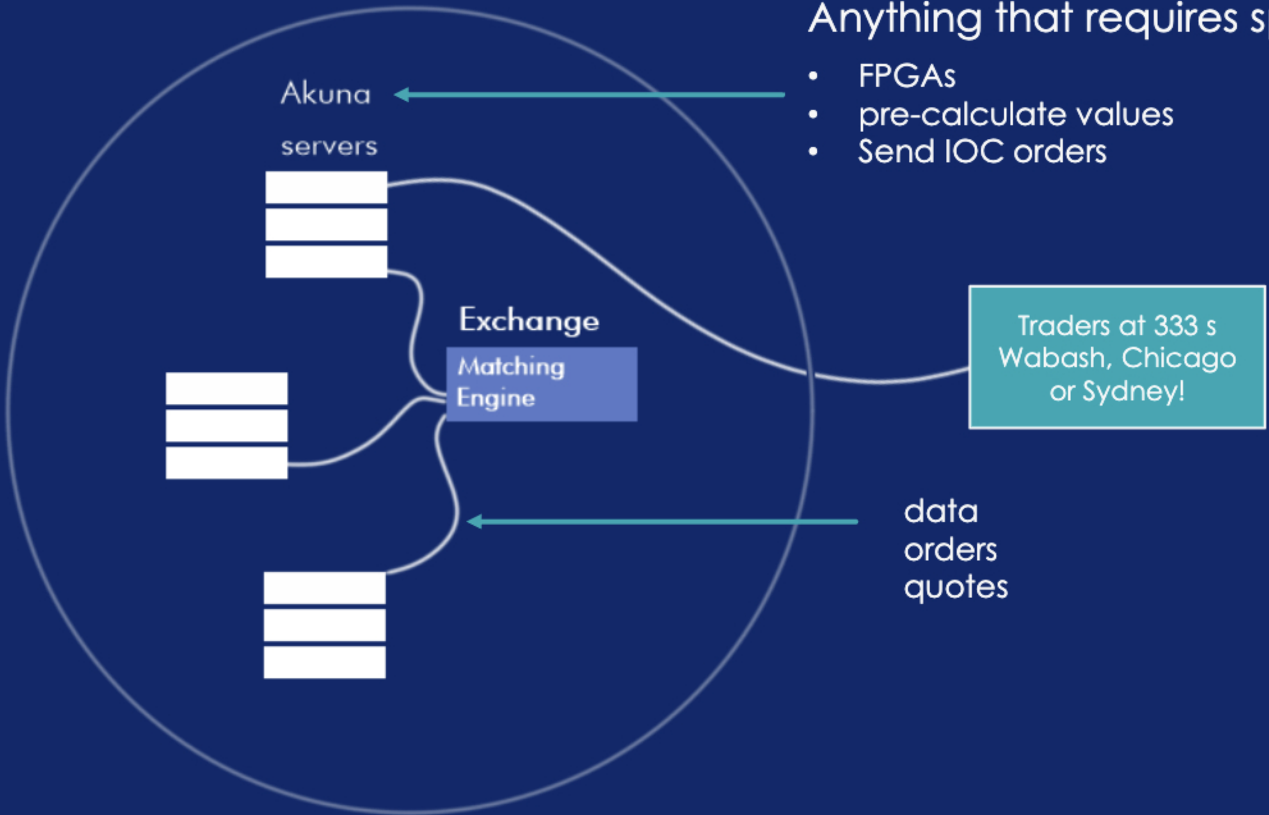

- Changing settings
- Adjusting parameters
- Turning quotes on/off

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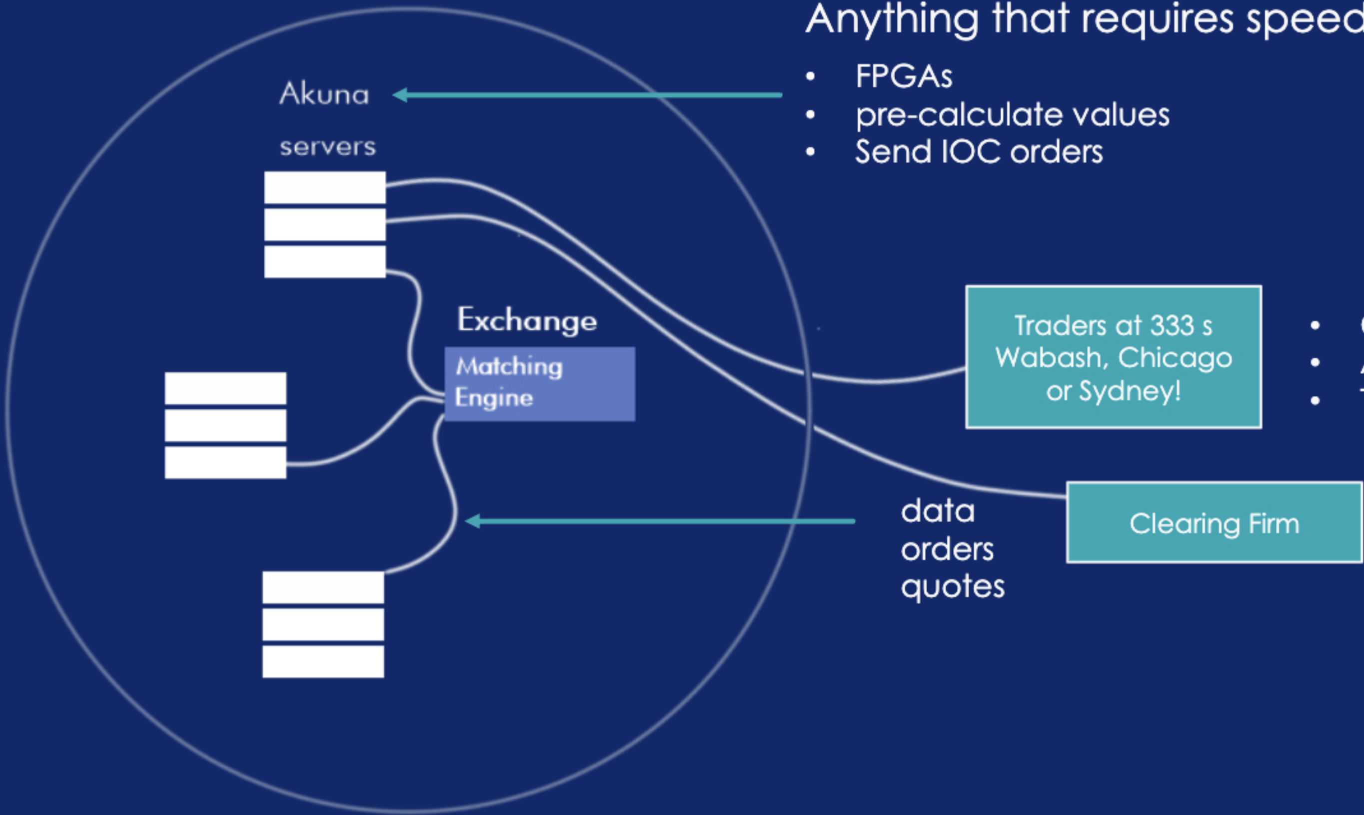
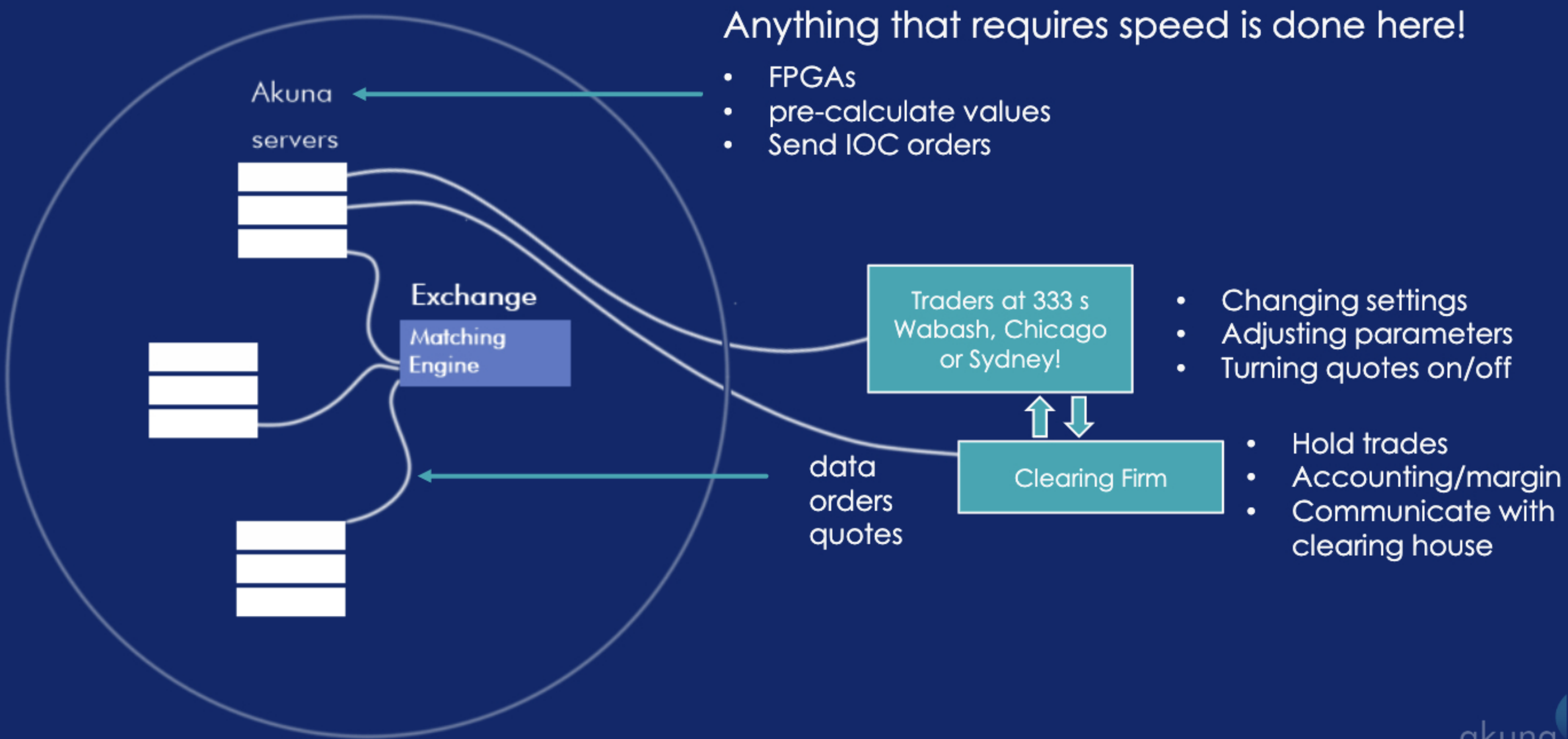


- Changing settings
- Adjusting parameters
- Turning quotes on/off

- Hold trades
- Accounting/margin
- Communicate with clearing house

HOW DO ELECTRONIC MARKETS WORK

- Electronic Architecture



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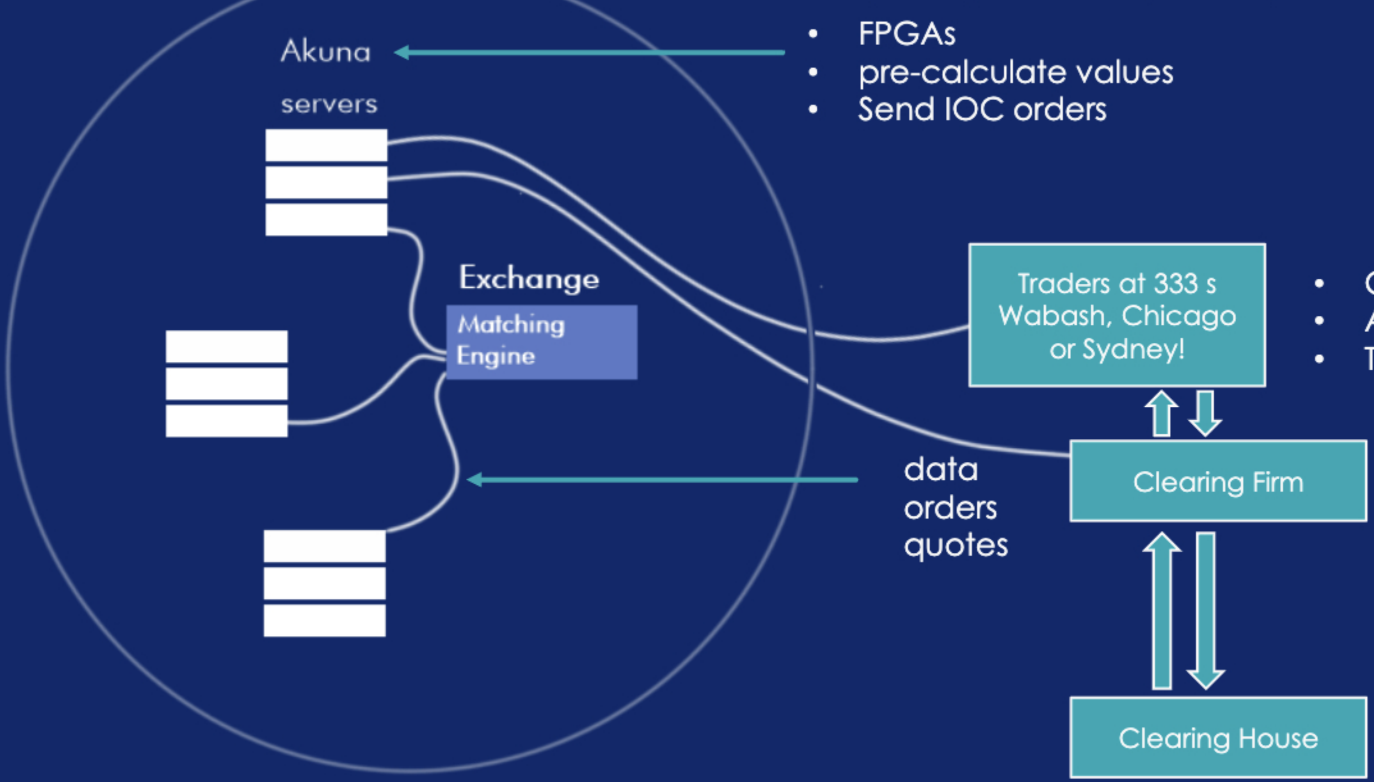

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- Matches trades between clearing firms

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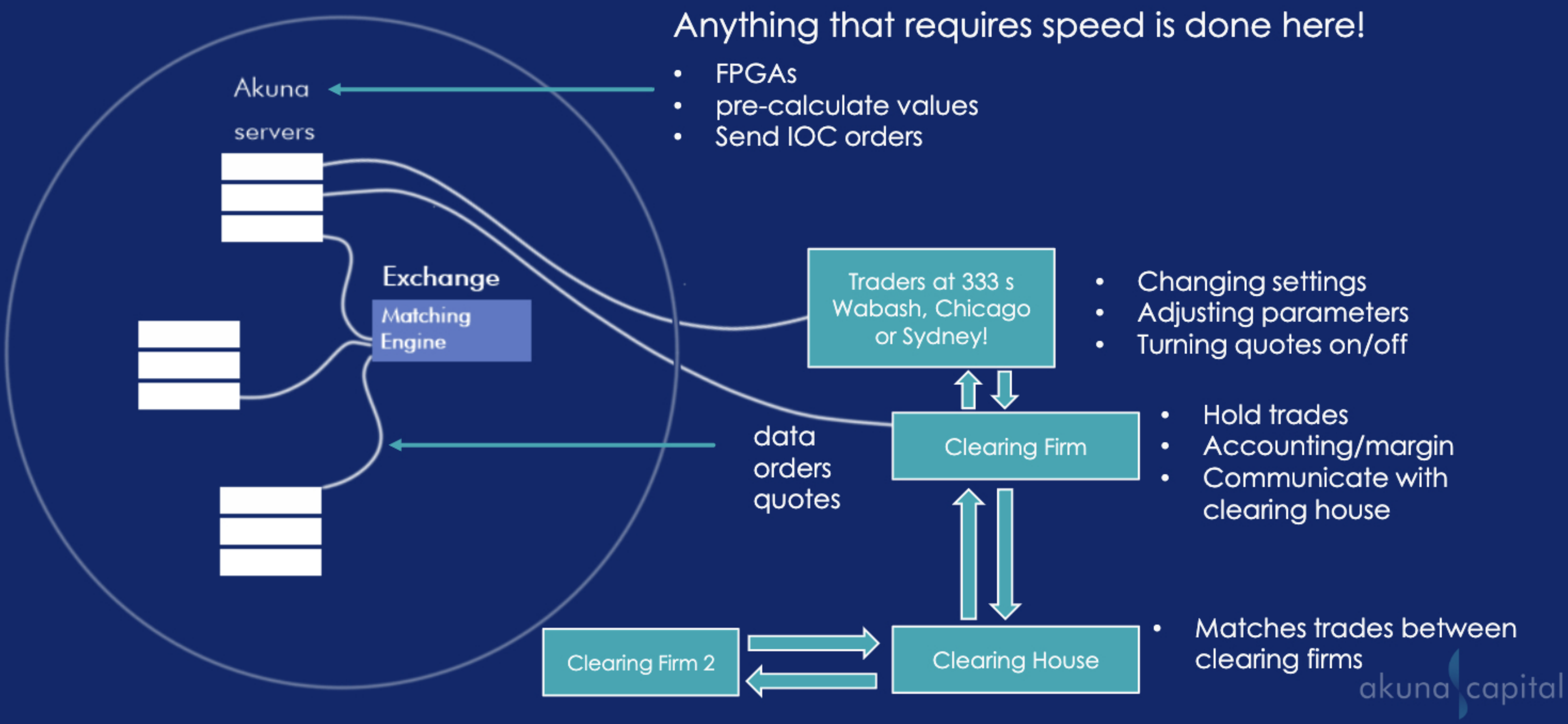

HOW DO ELECTRONIC MARKETS WORK

Questions?

- Electronic Architecture

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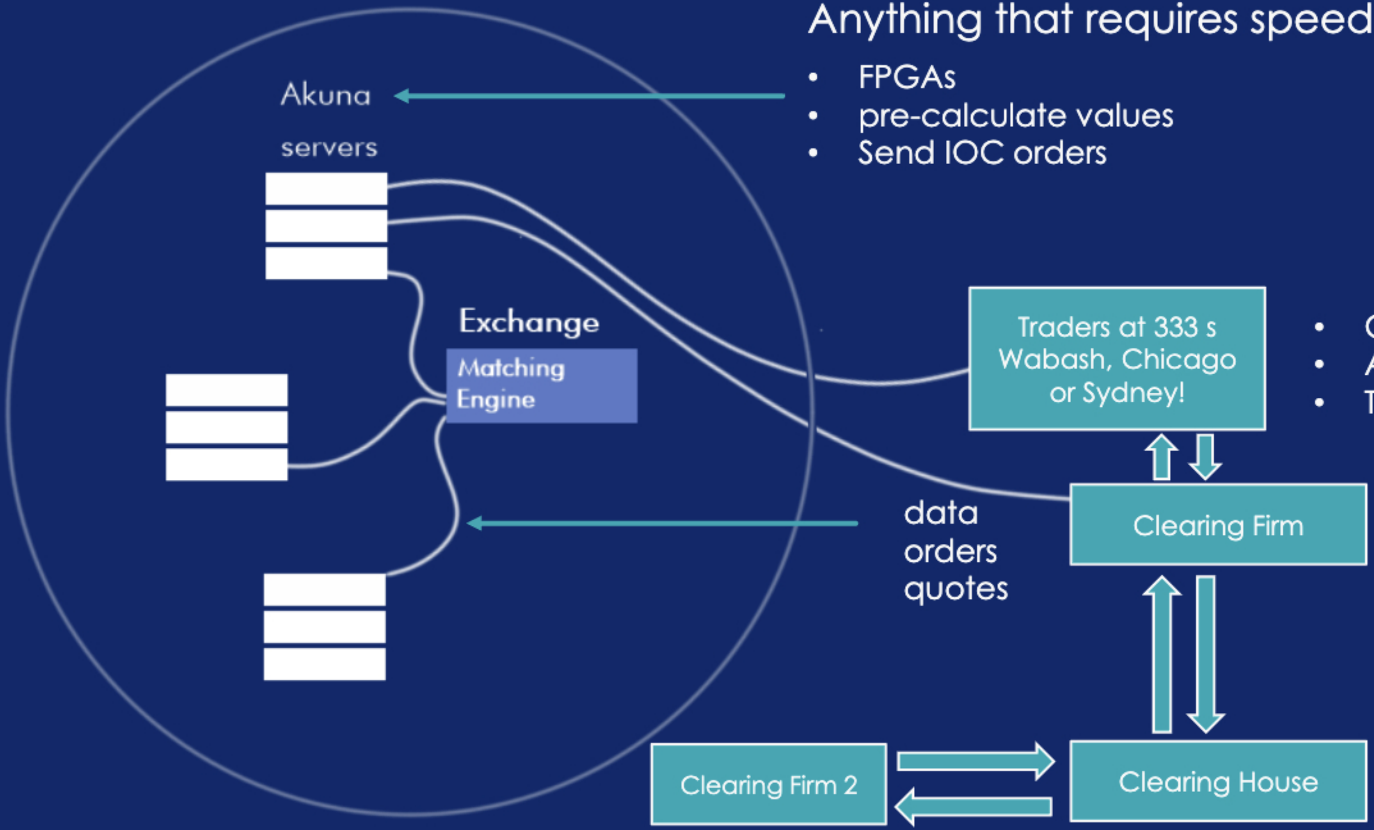

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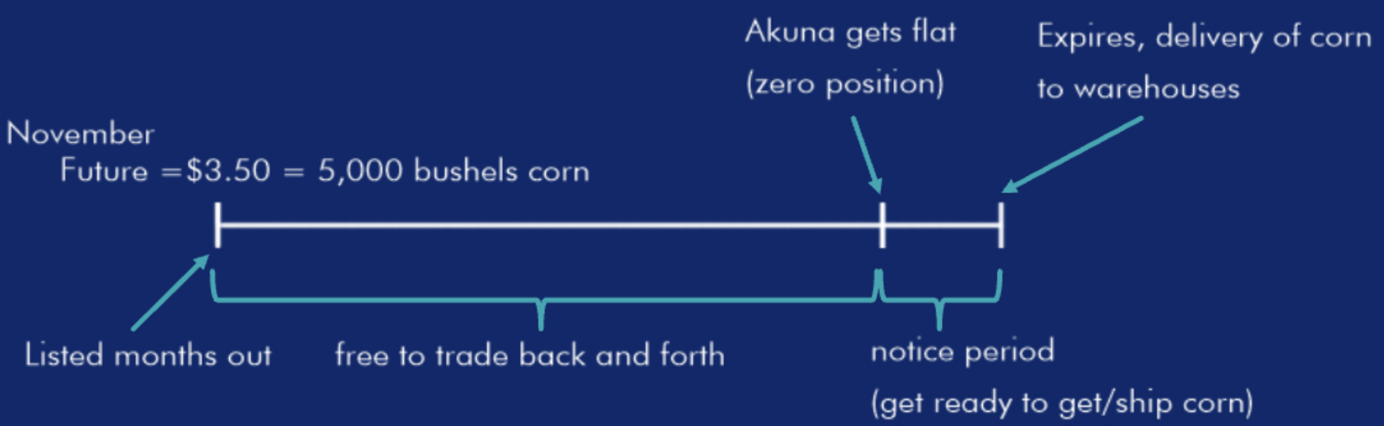
STANDARDIZED CONTRACTS

- Before exchanges a producer and consumer would enter into a contract (forward).
  - Counterparty risk – Will consumer pay? Will producer deliver?
  - Standards – What is the quality of the delivered product?
  - Increments – Must find someone to trade with, for your size
- The exchange(s) sets up business
  - Exchange guarantees contracts
    - Product guaranteed to a certain quality or specification, delivery location
    - Granular trading increments (ie. 5,000 bushels)
    - Can trade with anyone!
      - Exchange actually becomes your counterparty with the contract traded.

THE LIFE OF A FUTURE

- Future = Standardized contract
- Developed for Farmers
- Now <1% get delivered



Corn and soybean delivery zones

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