

Market Mirroring Strategy

Software Architecture Specification 2019-01-31

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Possible Events

- OrderPlacement
- OrderCancelled
- OrderDone
- OrderFill
- QuoteBook

Source Market

- OrderPlacement
- OrderCancelled
- OrderDone
- OrderFill
- QuoteBook

Destination Market

- OrderPlacement
- OrderCancelled
- OrderDone
- OrderFill
- QuoteBook

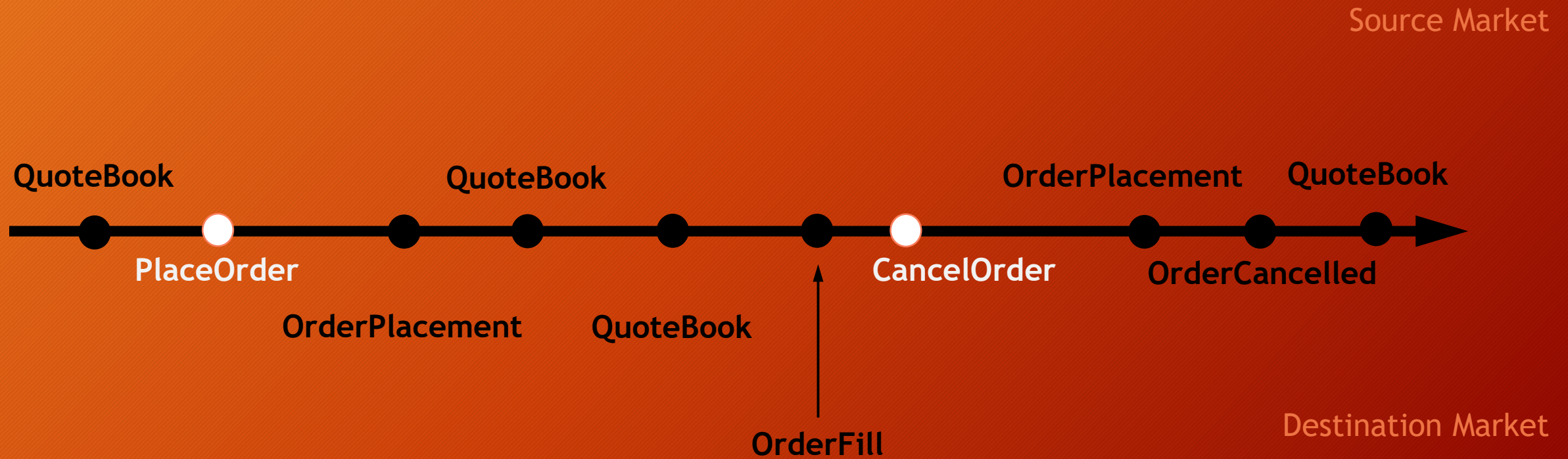
Source Market

- OrderPlacement
 - OrderCancelled
 - OrderDone
 - OrderFill
 - QuoteBook
-
- PlaceOrder
 - CancelOrder

Destination Market

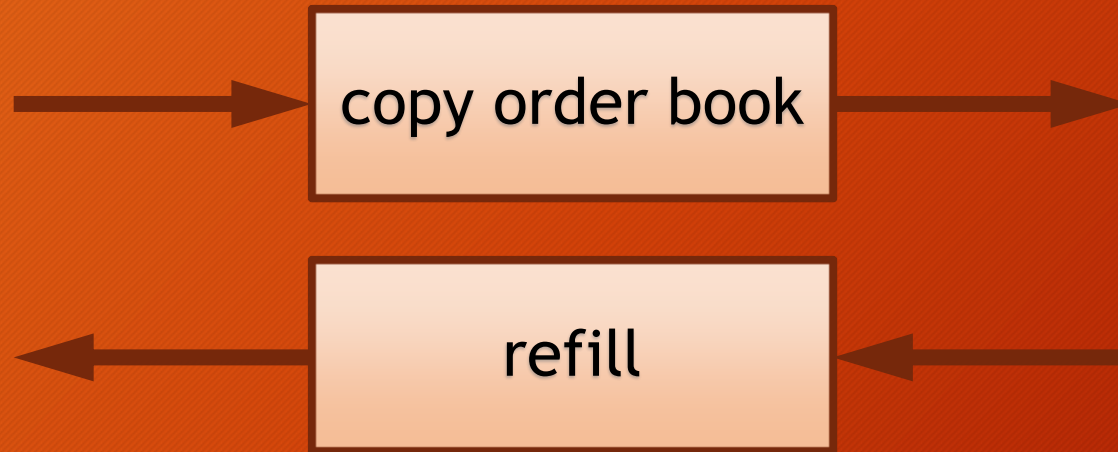
- OrderPlacement
 - OrderCancelled
 - OrderDone
 - OrderFill
 - QuoteBook
-
- PlaceOrder
 - CancelOrder

Event Timeline



Mirroring Strategy

Source
Market



Destination
Market

Source
Market

QuoteBook



copy order book

PlaceOrder /
CancelOrder



Destination
Market

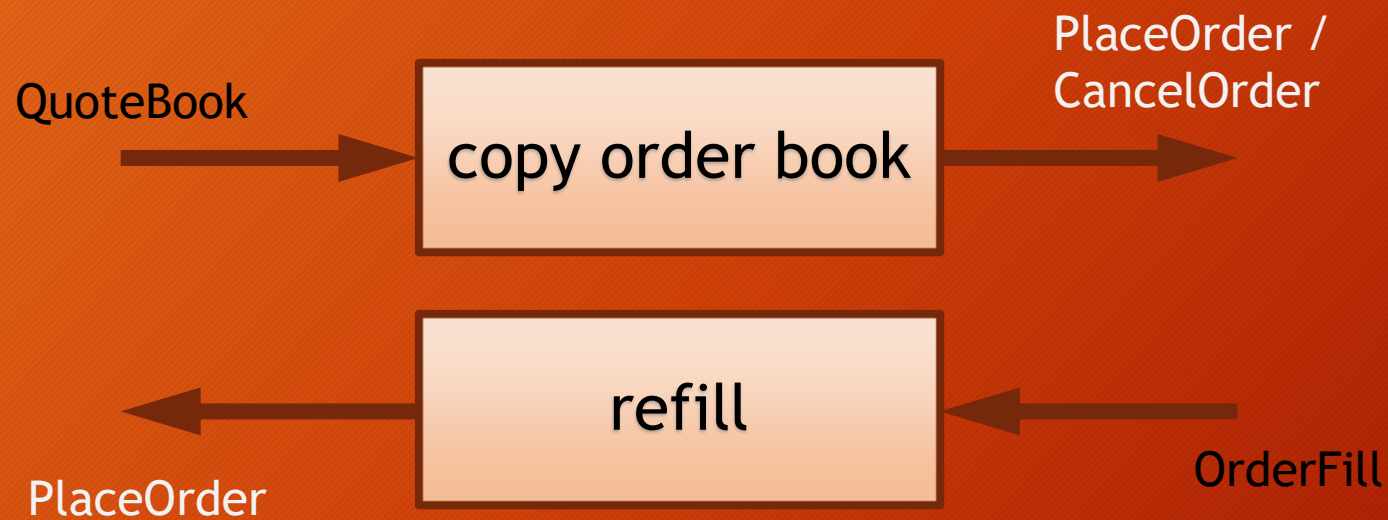


Source
Market



Destination
Market

Source
Market



Destination
Market

Source
Market

QuoteBook



copy order book



PlaceOrder /
CancelOrder

Destination
Market



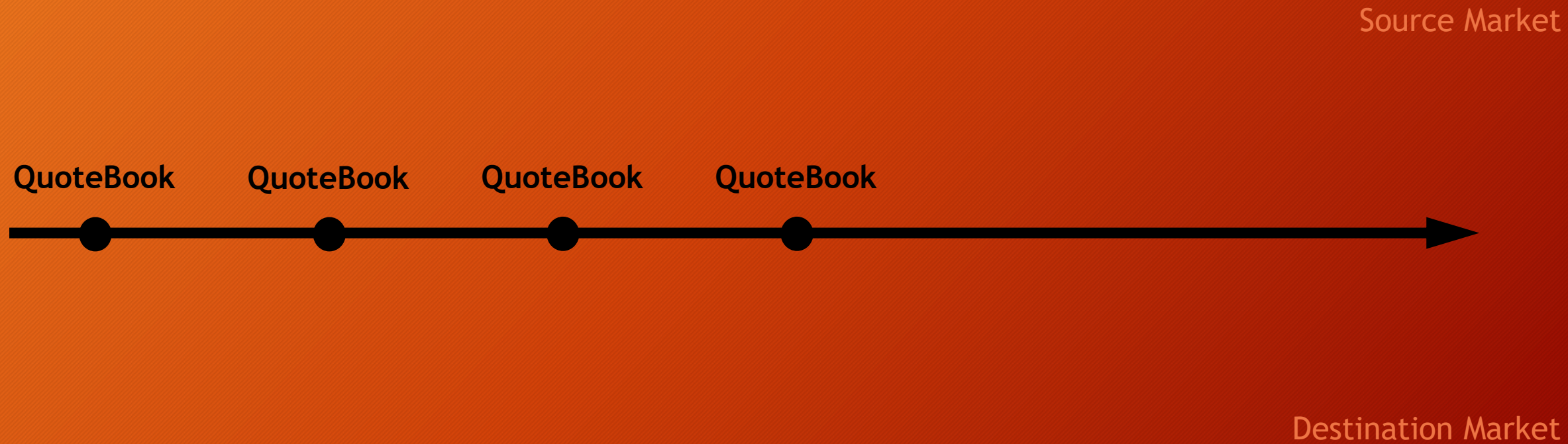
What if this happens?...



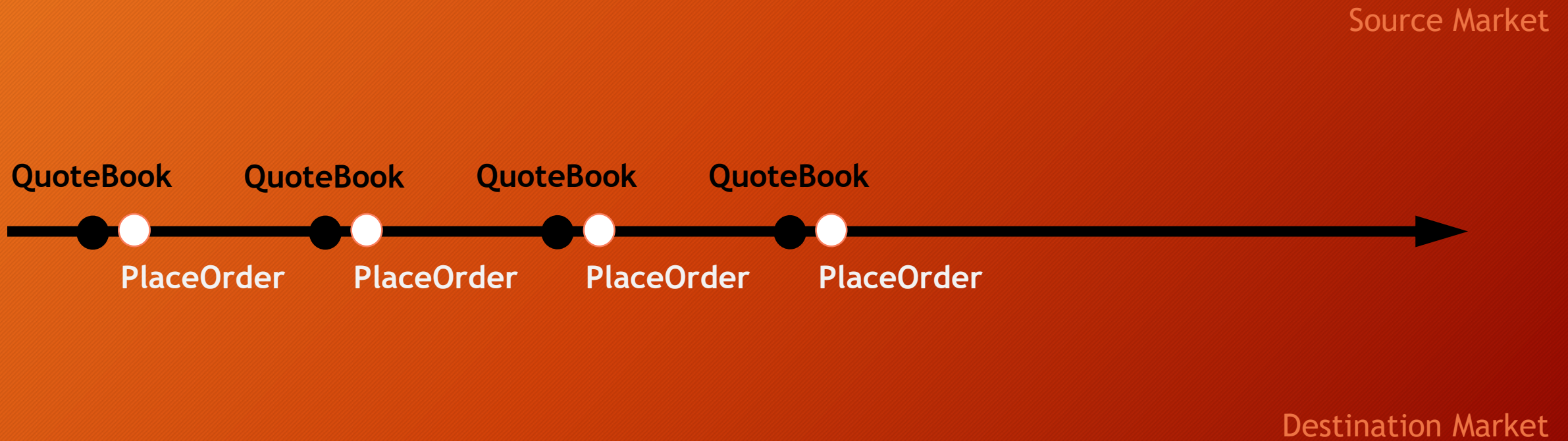
What if this happens?...



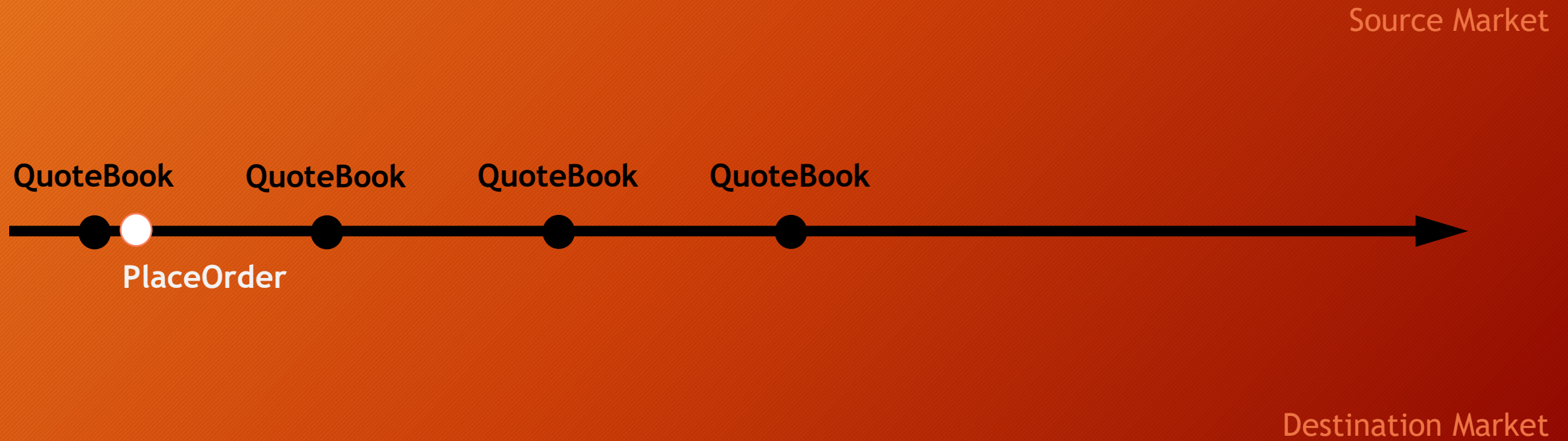
What if this happens?...



What if this happens?...



What we want



Source
Market

QuoteBook



copy order book



PlaceOrder /
CancelOrder

Destination
Market



Source
Market

QuoteBook

copy order book

PlaceOrder /
CancelOrder

Open
Orders

Destination
Market



Source
Market

QuoteBook

copy order book

PlaceOrder /
CancelOrder

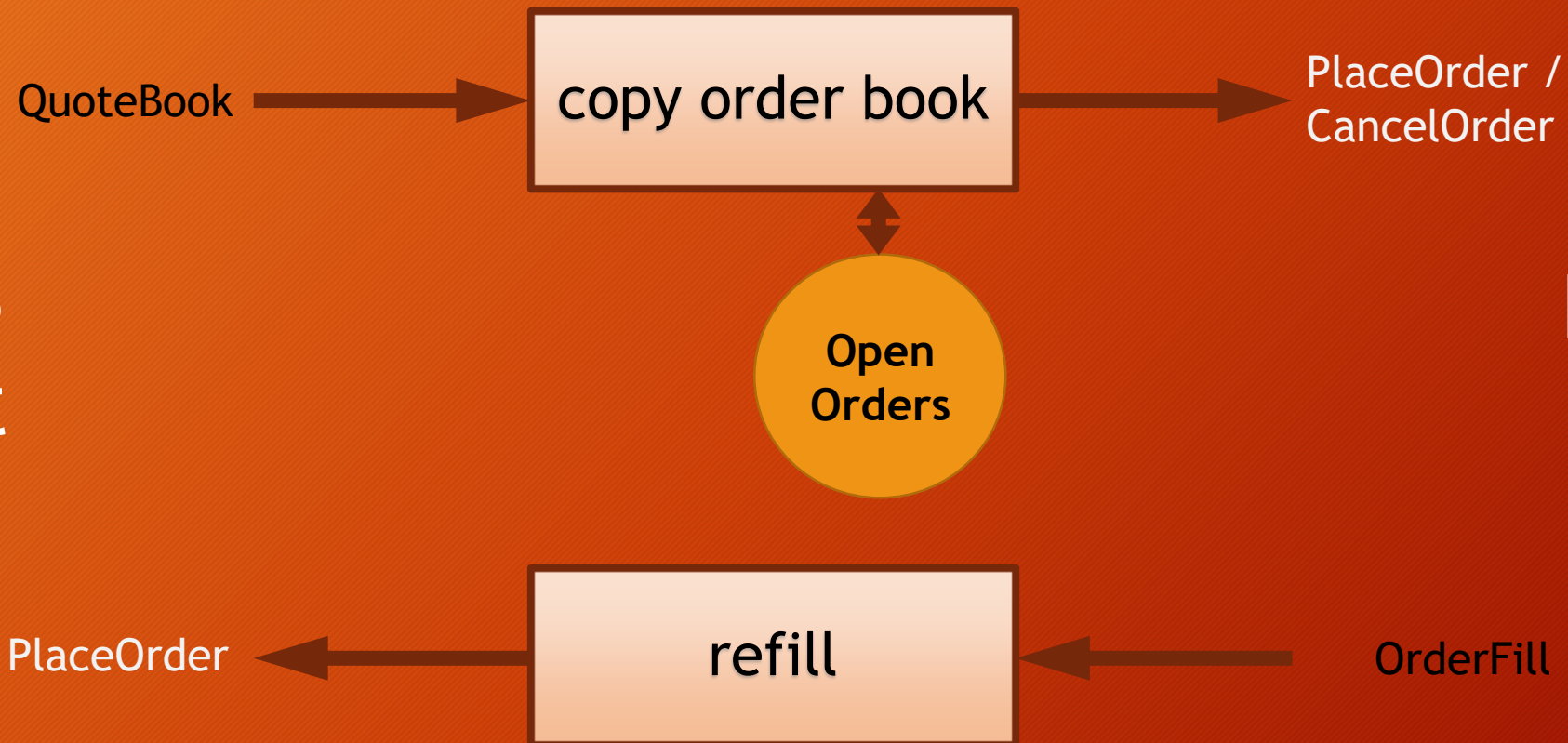
Open
Orders

Destination
Market

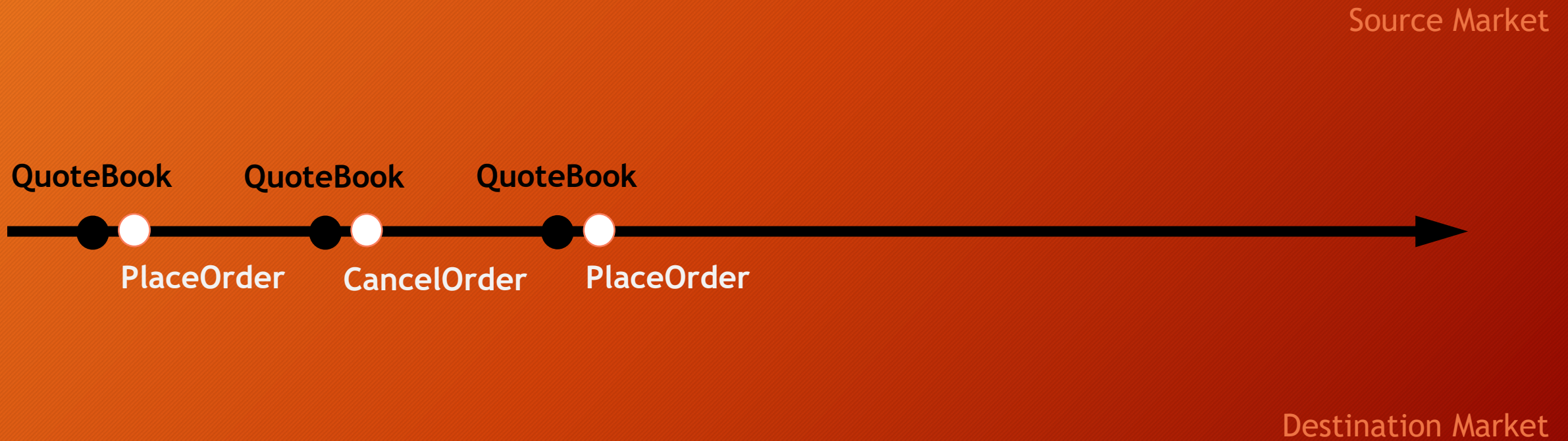
PlaceOrder

refill

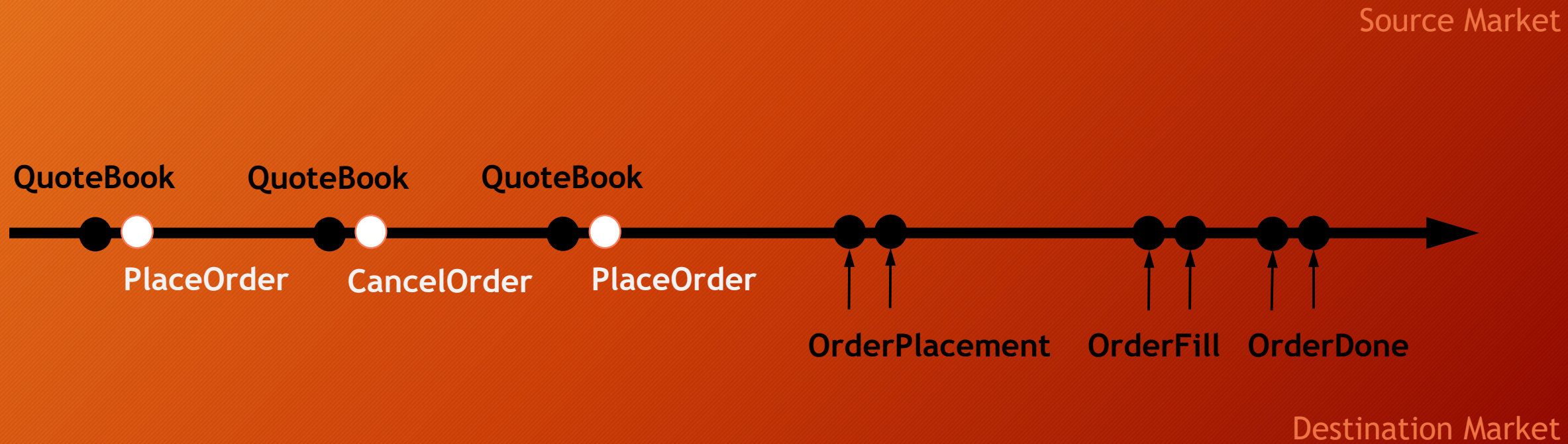
OrderFill



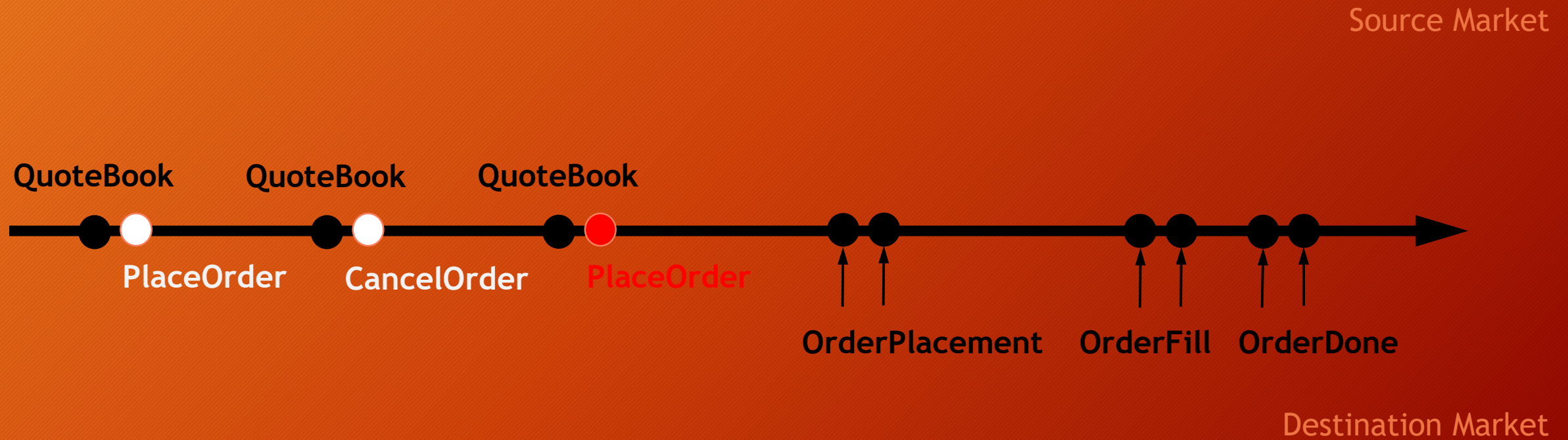
What if this happens?...



What if this happens?...



We must wait



Source
Market

QuoteBook

copy order book

PlaceOrder /
CancelOrder

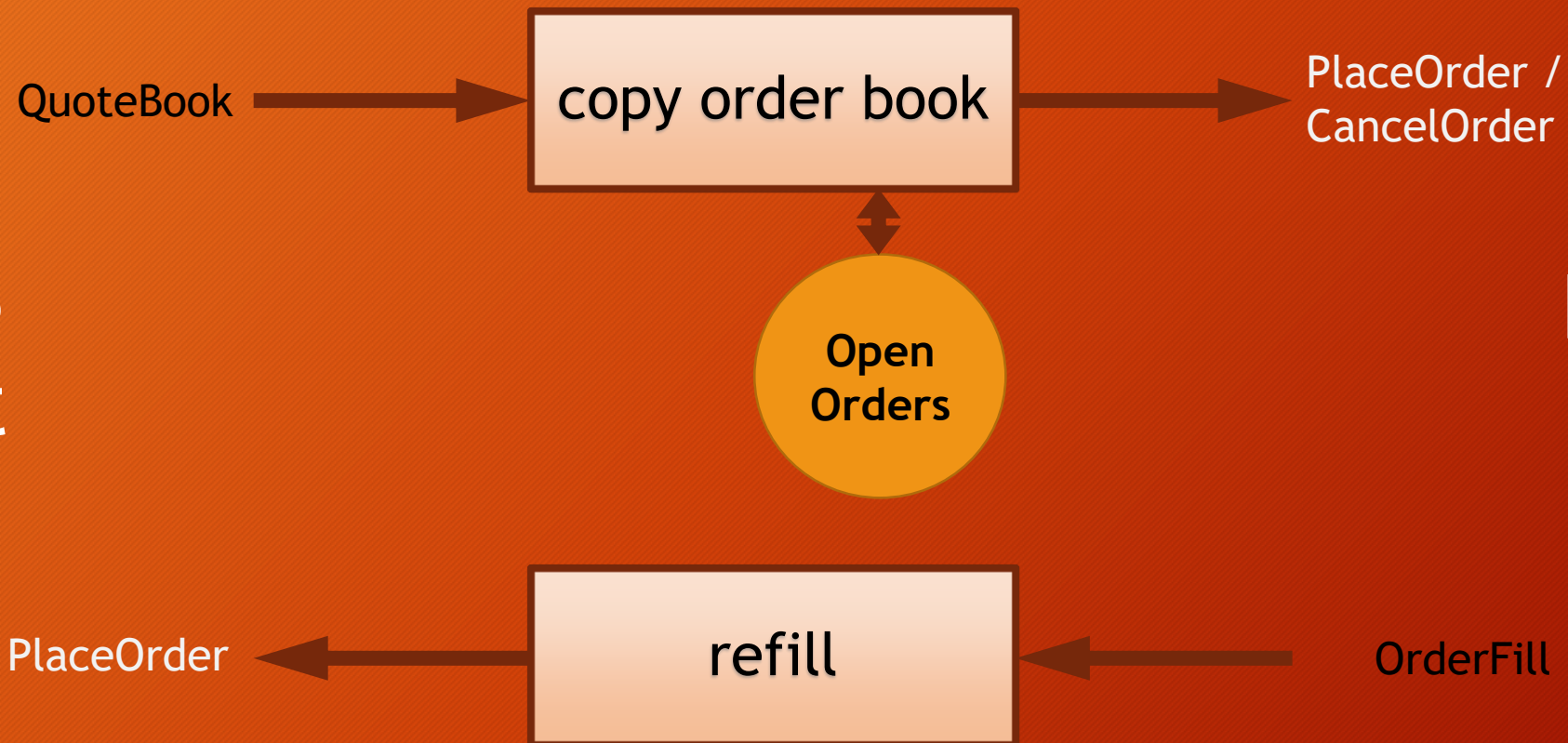
Open
Orders

Destination
Market

PlaceOrder

refill

OrderFill



Source
Market

QuoteBook

copy order book

PlaceOrder /
CancelOrder

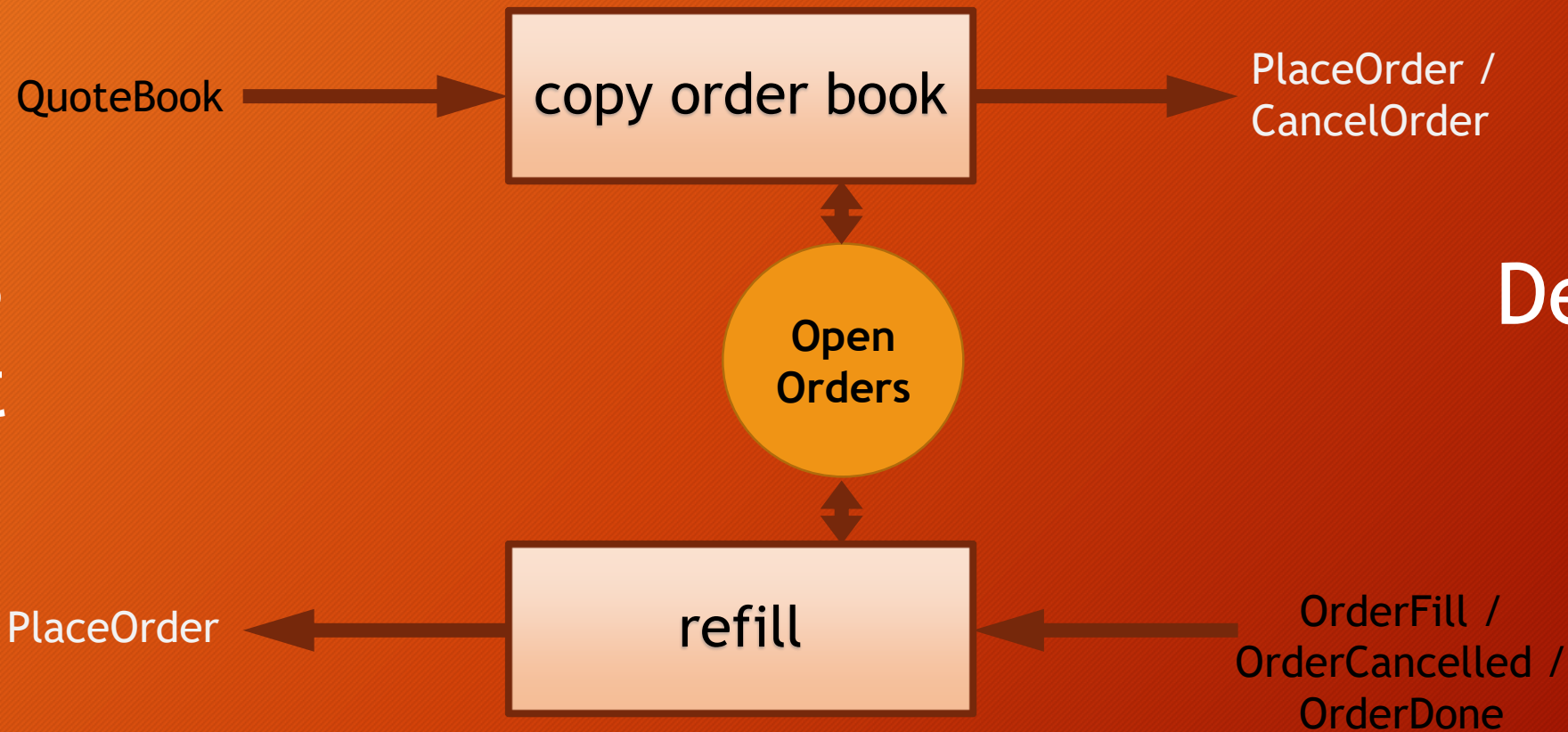
Open
Orders

PlaceOrder

refill

OrderFill /
OrderCancelled /
OrderDone

Destination
Market



QuoteBook

copy order book

PlaceOrder /
CancelOrder

Source
Market

1. Requested Actions
2. next available COLD

Destination
Market

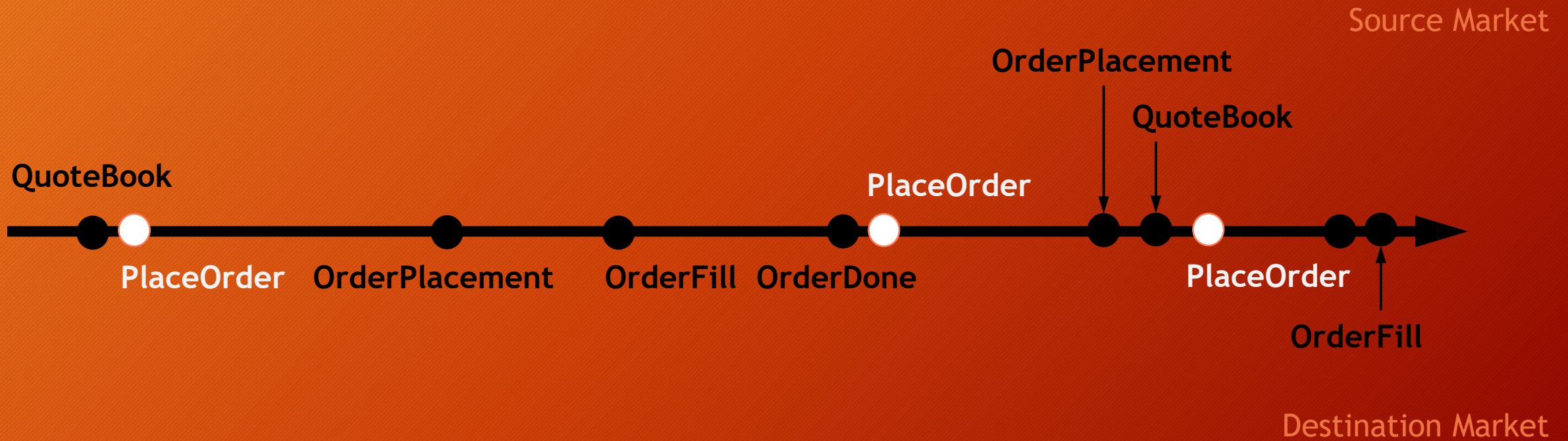
PlaceOrder

refill

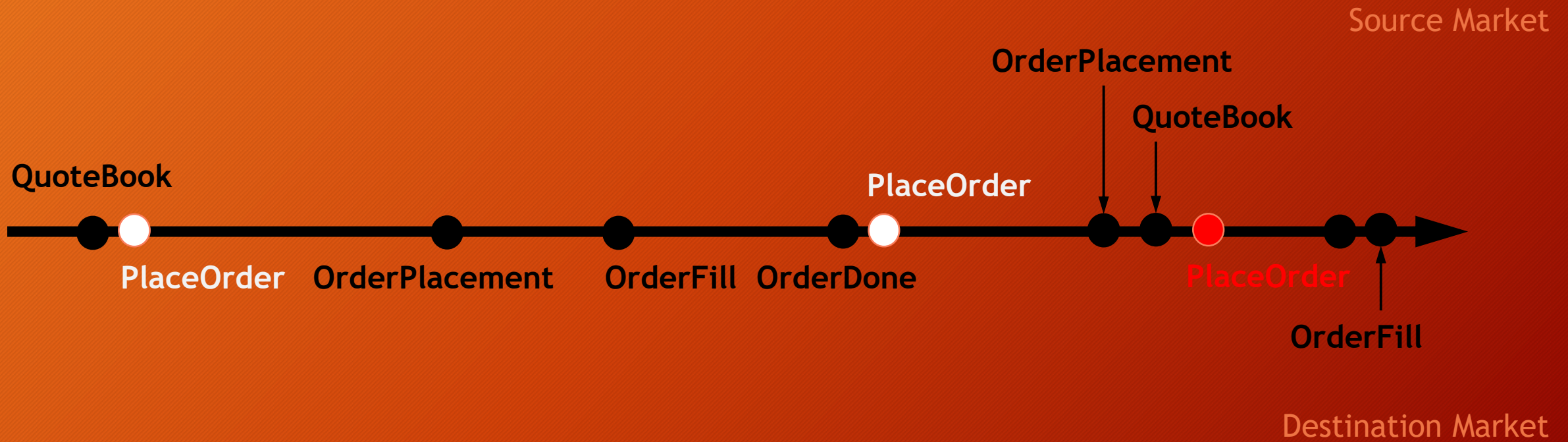
OrderFill /
OrderCancelled /
OrderDone



What if this happens?...



We must wait



QuoteBook

copy order book

PlaceOrder /
CancelOrder

Source
Market

1. Requested Actions
2. next available COLD

Destination
Market

PlaceOrder

refill

OrderFill /
OrderCancelled /
OrderDone



QuoteBook

copy order book

PlaceOrder /
CancelOrder

Source
Market

1. Requested Actions
2. next available COID
3. realized exposure

Destination
Market

PlaceOrder

refill

OrderFill /
OrderCancelled /
OrderDone



QuoteBook

copy order book

PlaceOrder /
CancelOrder

Source
Market

1. Requested Actions
2. next available COLD
3. realized exposure

Destination
Market

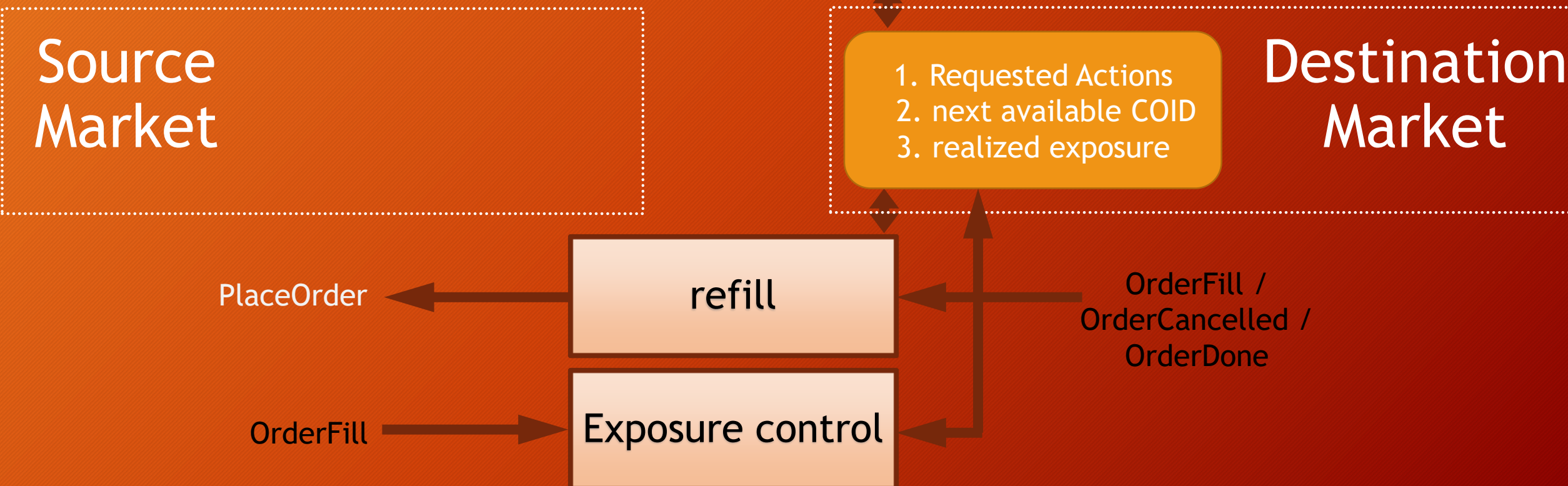
PlaceOrder

refill

OrderFill /
OrderCancelled /
OrderDone

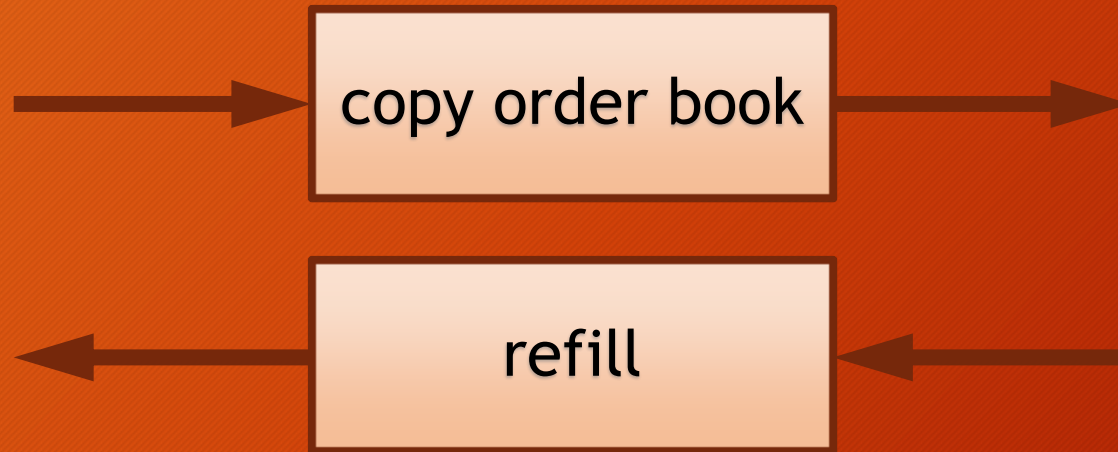
OrderFill

Exposure control



Specifying parameters

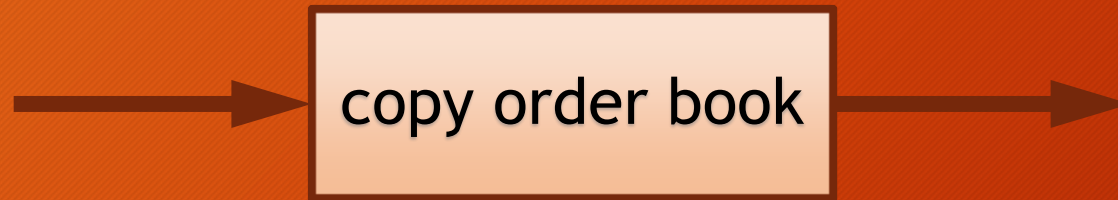
Source
Market



Destination
Market

Specifying parameters

Source
Market



Given:

- QuoteBook

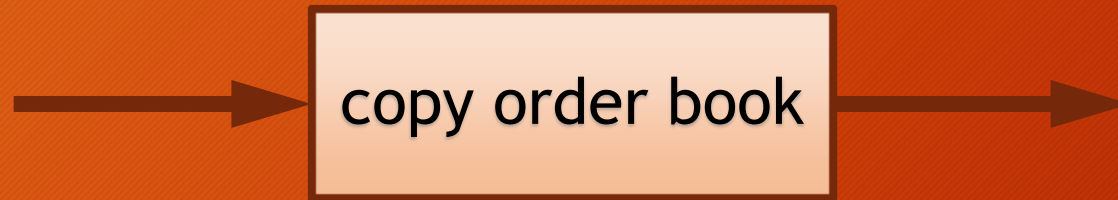
Set Target:

- (side, price, volume)

Destination
Market

Specifying parameters

Source
Market



Destination
Market

Given:

- QuoteBook

Set Target:

- (side, price, volume)

Will be limited by maximum exposure

Still to be improved

- Cancelling all orders to decrease open volume
- Filtering order book
- Failure treatment
- ...