Rising to the Top: Finding the Best Liquidity in Dark Pools

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BUILDING THE NEW BUYSIDE™

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Dark Pools Are a *ZERO SUM* Game

- Traditional dark pools invited like-minded participants
  - The objective was to minimize impact
- Newer entrants tend to invite a wider variety of participants with different objectives:
  - Institutions – minimize impact
  - DMA flow – reduce cost
  - Market makers, prop desks, and high frequency funds – earn short-term alpha
- Dark pools are a ‘zero sum game’ by construction
  - The objectives of newer entrants make them less attractive to institutions

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How to Extract Quality Liquidity

1

Understand contra-types in dark pools

2

Separate contra-types in dark pools

3

Measure performance and contra-types in dark pools

4

Optimally allocate to minimize Implementation Shortfall

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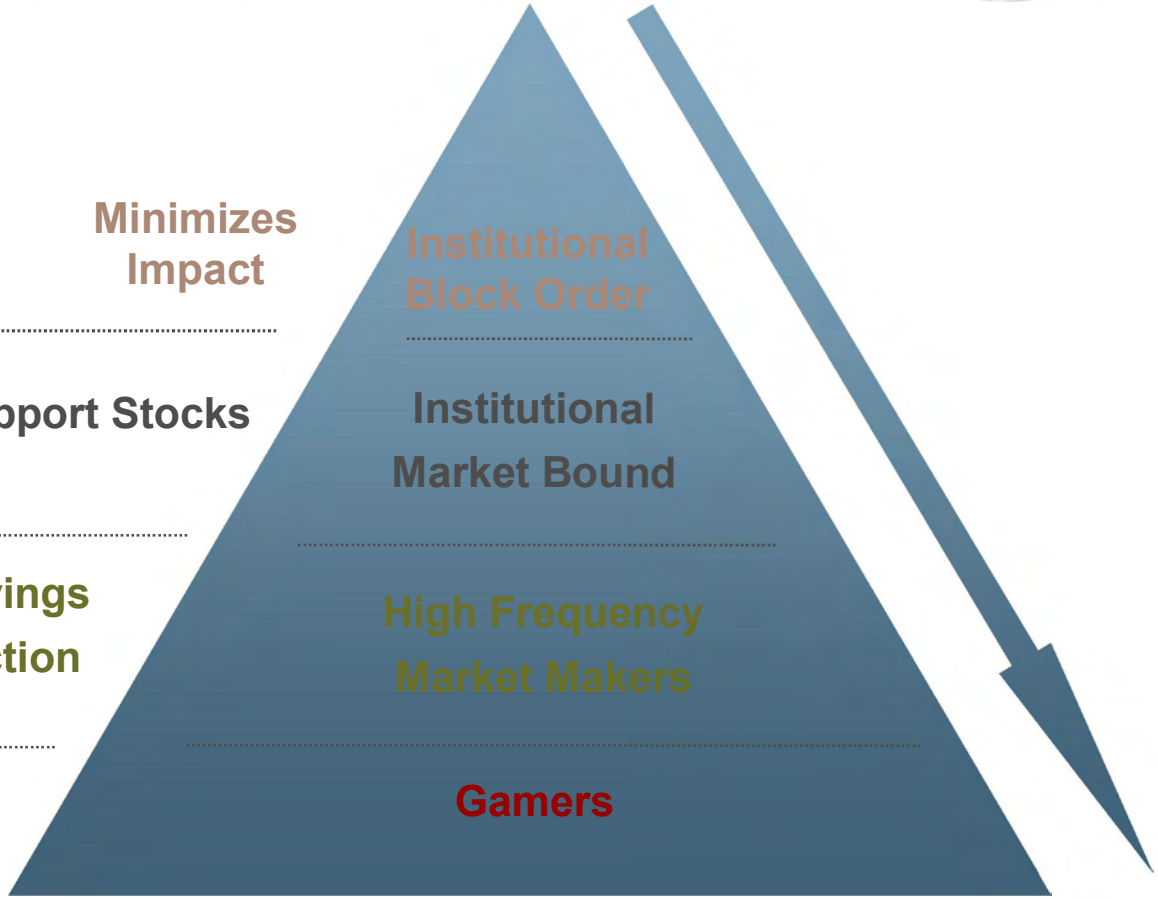
Understanding Contra-Types



*Based on internal ITG research: "Are You Playing in a Toxic Dark Pool? A Guide to Preventing Information Leakage," Hitesh Mittal, *Journal of Trading*, Summer 2008.

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Separating Contra-Types

ITG's Liquidity Filter technology uses this logic to interact intelligently against each type of liquidity

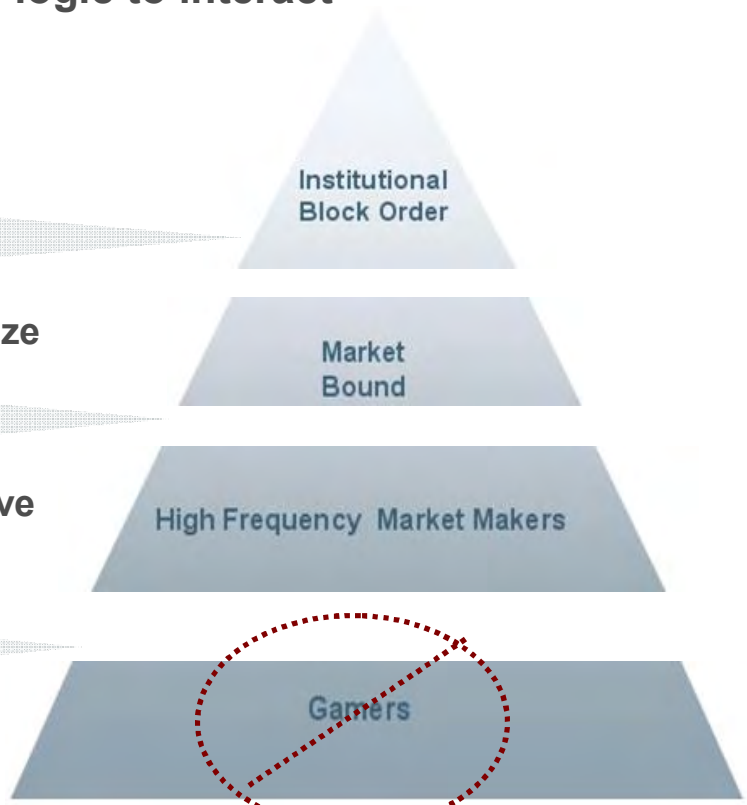
Large Client Order

Uses minimum size on orders

Uses order type Peg Passive without min size

Shuts down IOIs by sending small aggressive orders

Avoids gamers by not allowing orders to get pinged



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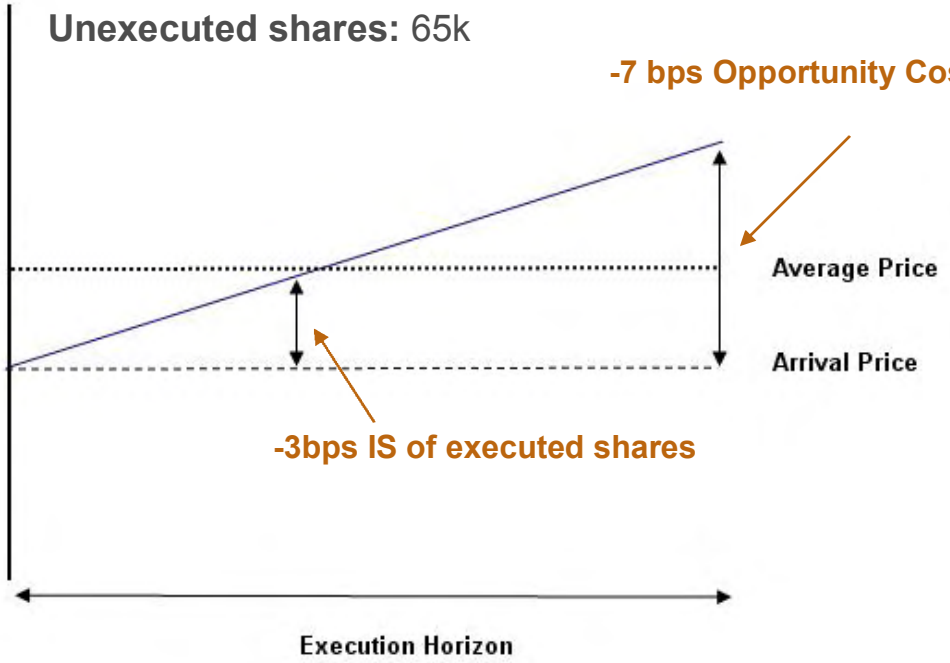
Understanding Implementation Shortfall

Example: Buy 100k ABC
Executed shares: 35k
Unexecuted shares: 65k



IS of Executed Shares	Opportunity Cost	Total Implementation Shortfall
-3bps	-7bps	5.6bps

Total Implementation Shortfall = execution cost vs. arrival + potential cost of executing the residual order based on the current stock price

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How to Measure Performance of a Dark Pool

- Implementation Shortfall of executed shares
- Fill rate
- Adverse selection
- Opportunity Cost: the cost of trading unexecuted shares
- **Implementation Shortfall + Opportunity Cost**

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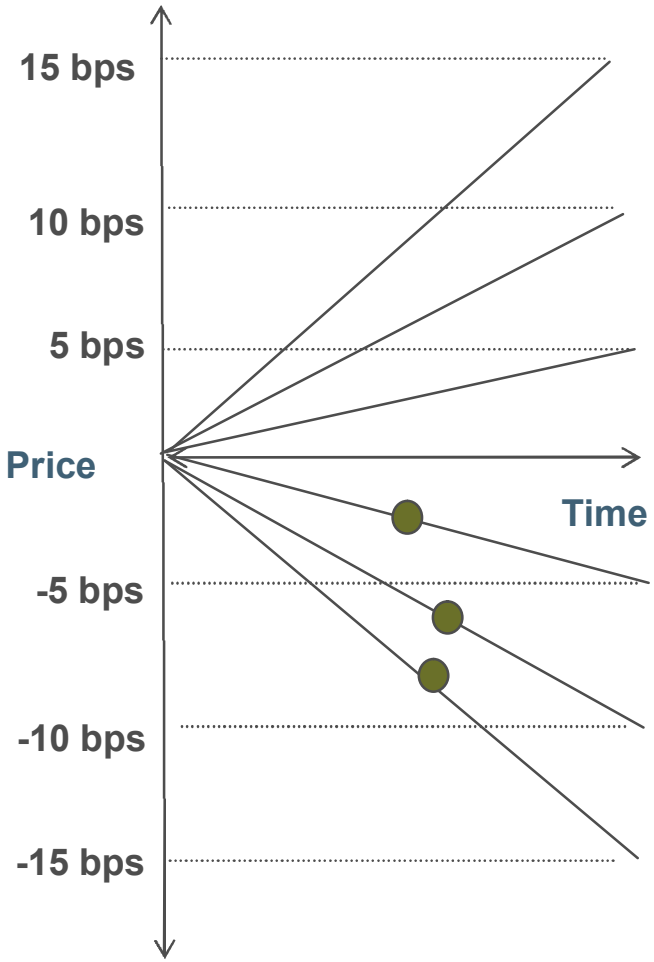
Looking at Fill Rates Alone is Not Enough



Example: 6 Buy Orders

- Fill rate: **50%** Great!!
- IS cost on fills: **Negative** Great!!

- Opportunity Cost: **High** Not Great
- Total IS cost:

(IS Cost + Opportunity Cost) **High** Not Great

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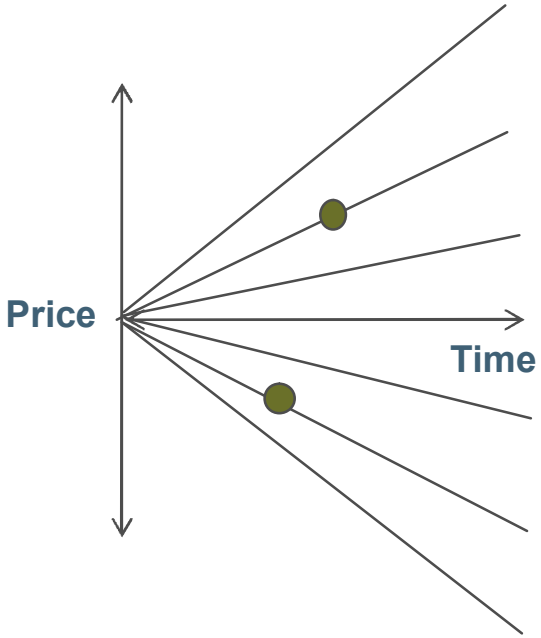
Looking at Fill Rates Alone is Not Enough



- Fill rate: **25%** OK
- IS cost on fills: **0** OK

- Opportunity Cost: **0** Great!!
- Total IS Cost:

(IS Cost + Opportunity Cost) **0** Great!!

Higher adverse selection = Higher opportunity cost

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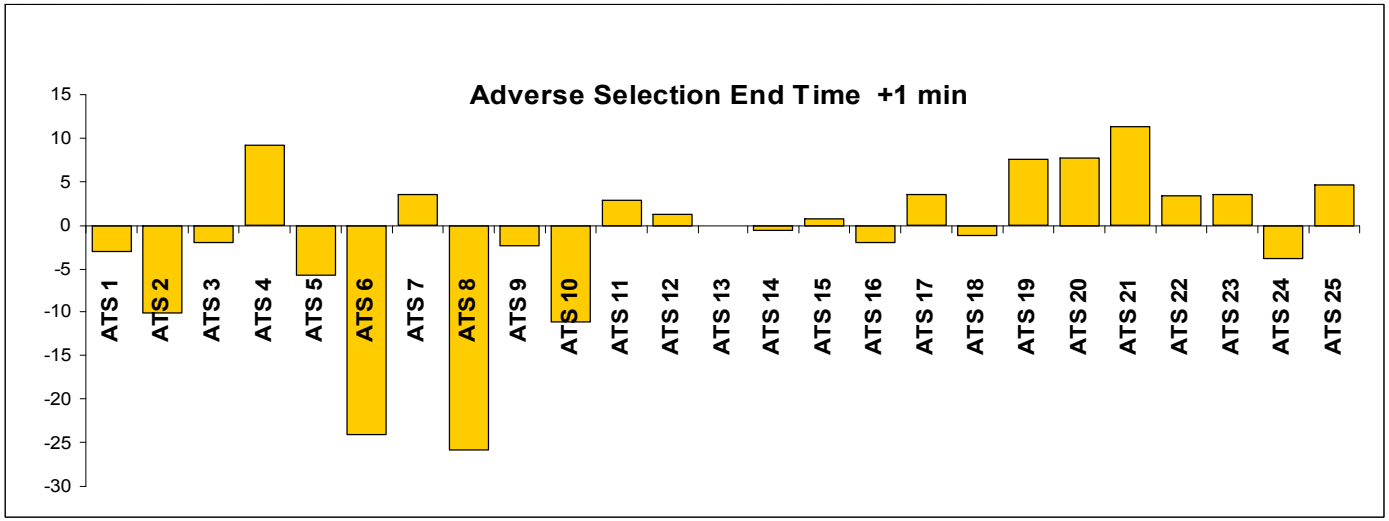
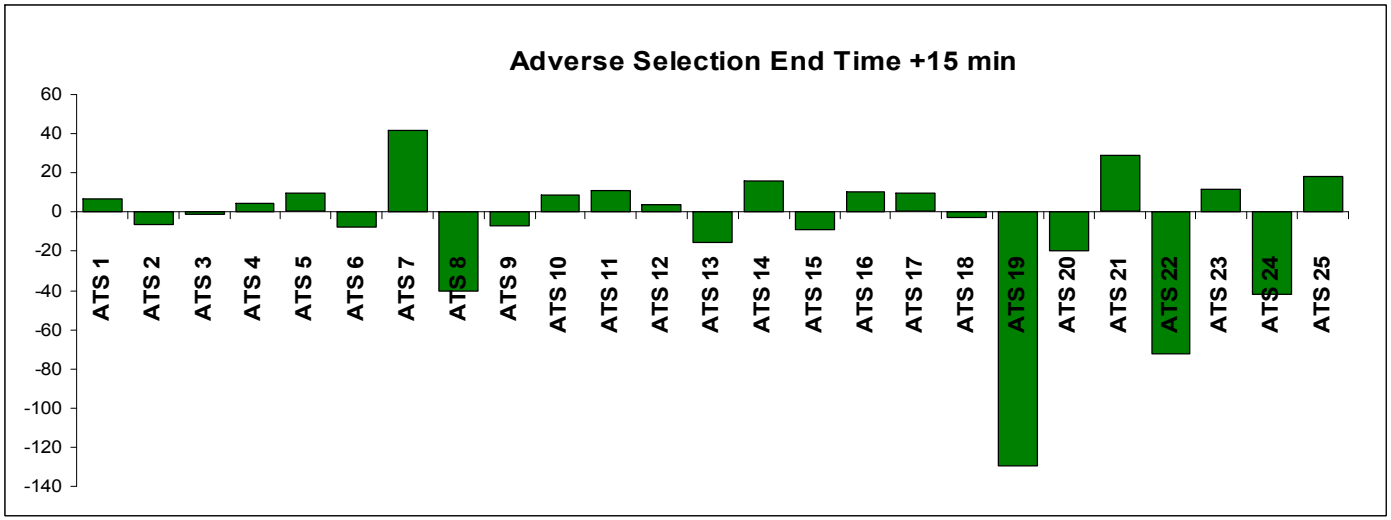
Adverse Selection Across Dark Pools





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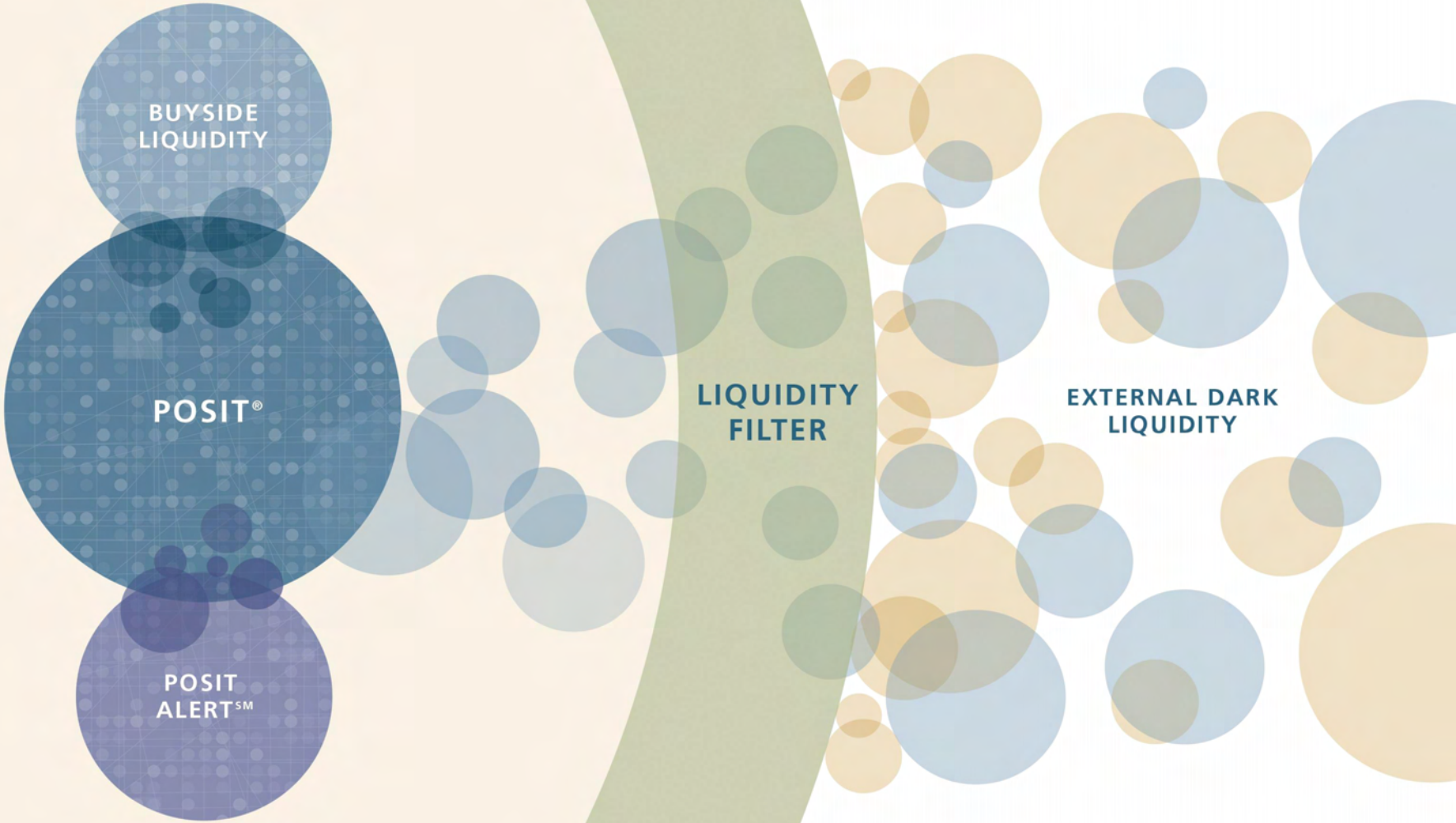
Optimally Allocate for Best Performance

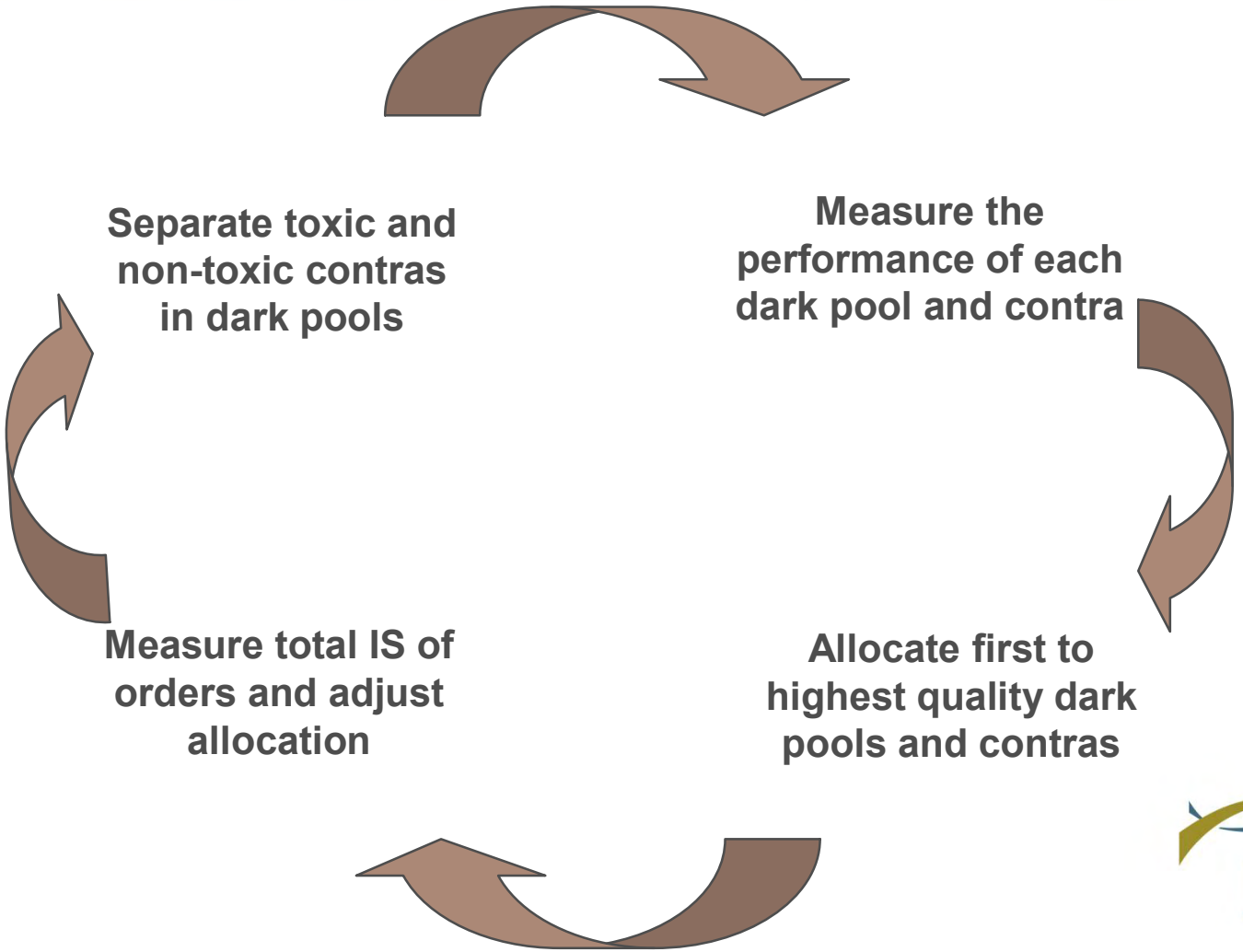
- Spreading orders across multiple pools leads to more information leakage
- Higher information leakage = Higher IS cost
- Allocation should be adjusted based on
  - Adverse selection
  - Average impact in each pool
  - Average fill rate in each pool

POSIT Marketplace℠



ITG's Liquidity Filter

At the Core of POSIT Marketplace℠



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