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FIXPROTOCOL
INDUSTRY-DRIVEN MESSAGING STANDARDSM

Setting the Scene FIX the Enabler & Electronic Trading



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Topics

- Overview of FIX and connectivity
- Direct Market Access
- Algorithmic Trading
- Dark Pools and Smart Order Routing



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10,000+ firms use FIX globally

- ◆ FIX is the market standard for electronic communication between Buy and Sell side



- ◆ Developed, owned and managed by leading brokers, vendors and institutional investors to promote increased trade connectivity



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FIX – Electronic trading example

Connecting electronically via FIX gives access to a wide range of services.

Buy Side Firm

Order Routing/Trading system

Orders / Fills /
Allocations

Sell Side Broker

FIX engine

**Direct Market
Access**

**Algorithmic
Trading**

**Single Stock
Desks**

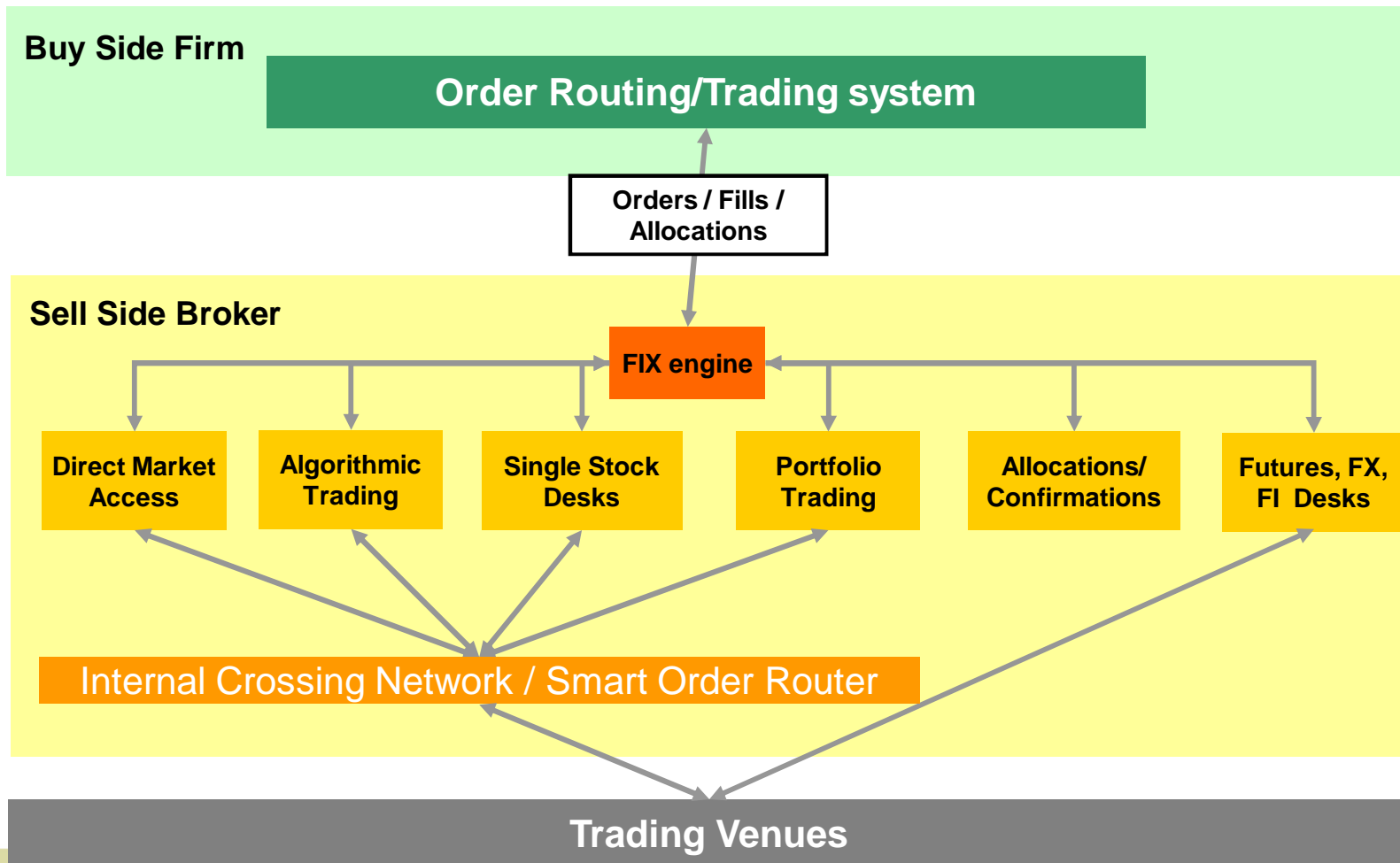
**Portfolio
Trading**

**Allocations/
Confirmations**

**Futures, FX,
FI Desks**

Internal Crossing Network / Smart Order Router

Trading Venues





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Clarifying the Terminology

- **Worked (or Care) order flow**
 - Sending electronic orders to your usual sales-trader for manual acceptance
 - Traditional trading process similar to telephoned orders
- **Direct Market Access (DMA)**
 - The ability of a buy-side trading desk to route orders directly to an execution venue without intervention by a sell-side trader
 - The sell-side provides memberships, technology, trade support and credit
 - Comprehensive automated checks and controls are in place to protect both the client and the broker
- **Algorithmic Trading**
 - Placing an order of a defined quantity into a strategy that automatically generates the timing and size of market orders
 - Typically constrained to trade to a benchmark, price or time
 - In-house or vendor provided models or broker provided models
- **Smart Order Routing**
 - Algorithmic model for managing multiple liquidity sources
 - Can be applied to all trading, including DMA and Algorithmic trading



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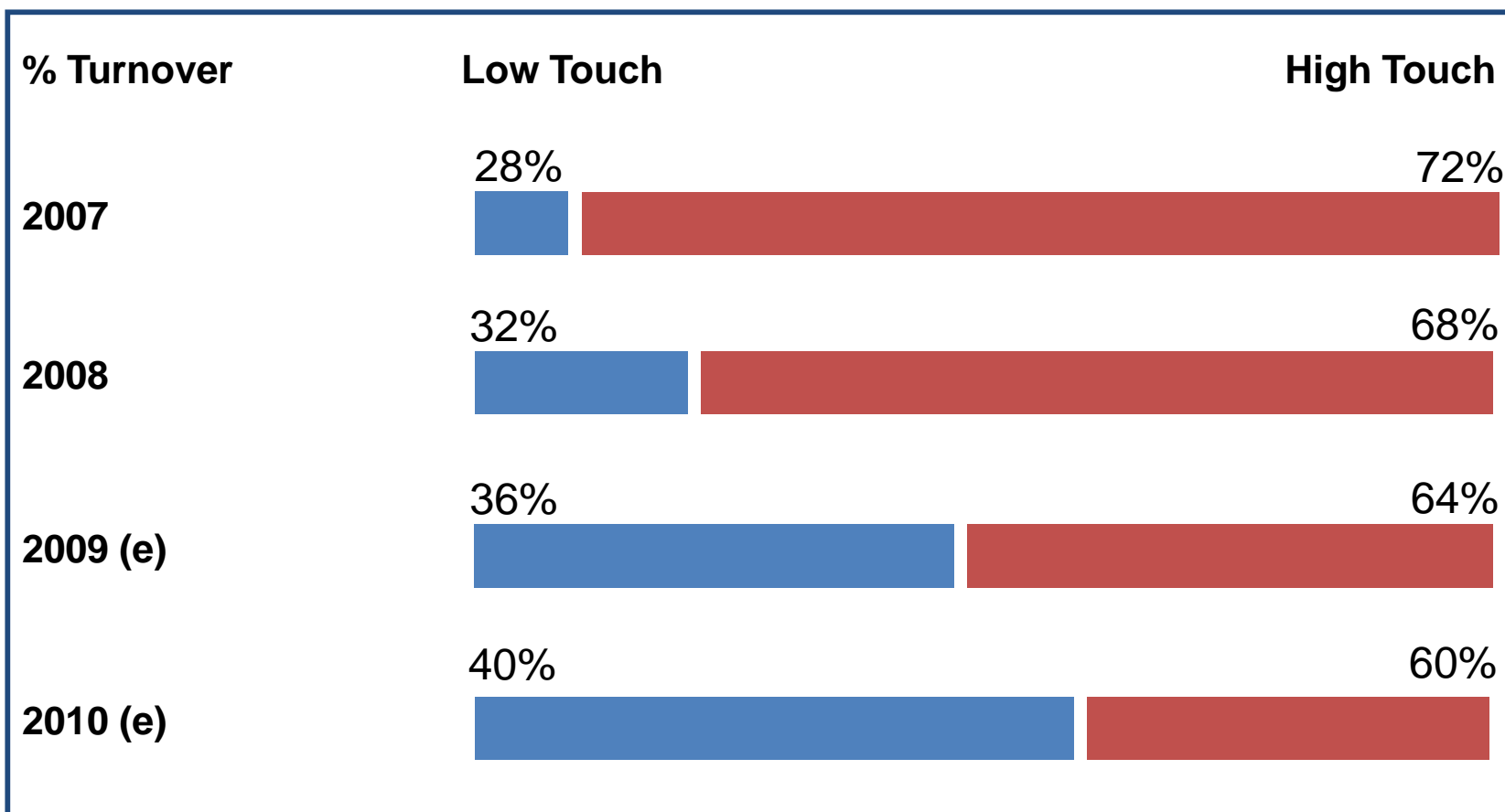
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Growth in DMA and Algorithmic trading

Changes to European Landscape



Source: The TABB Group, 2008



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The drivers towards DMA and Algorithmic Trading

- ◆ **Control**
Client wants more control over how the order is executed
- ◆ **Speed**
Sometimes want to lift an offer “right now”
- ◆ **Anonymity and Confidentiality**
Wants to trade in secret for a variety of reasons
- ◆ **Cost**
Low-touch execution leads to a lower execution charge
- ◆ **Unbundling**
Payment model allowing clients to decouple execution from advisory
- ◆ **Fragmentation/Competition and Liquidity (US and EU now, Asia future)**
Multiple venues for trading the same stock. Algos make it easier



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Algorithms and FIX: Same goal, different tools...

- **Algorithms/FIX: Same job, new tools**
- **Offers market participants new tools to improve efficiency and performance**
 - New tools make your trading experience better:
 - Do more with less.
 - Improve execution performance.
 - Eliminate communication error.
- **Shift in market advantage**
 - No longer does size and relationship rule the day. Everyone gets a seat at the table and anonymity means each order is treated the same.





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Several types of algorithms have evolved

◆ **Schedule driven algorithms**

- Structured with fixed start and end, adheres to schedule
- VWAP, TWAP, AtOpen, AtClose

◆ **Mechanical algorithms**

- Pegged/Float Algorithms

◆ **Market driven algorithms**

- Reactive, monitors real-time activity, reacts to events
- Volume Inline, Price Inline, Implementation Shortfall, etc

◆ **Liquidity Seeking algorithms**

- Pro-active liquidity seeking algorithms, most sophisticated
- Intelligently accesses multiple 'dark' and 'lit' pools

◆ **Selecting the right algorithm is key**

- Selecting **when** to use algorithms and **which** algorithms to use.
- Seeing a steady move away from VWAP to more price sensitive and liquidity seeking algorithms





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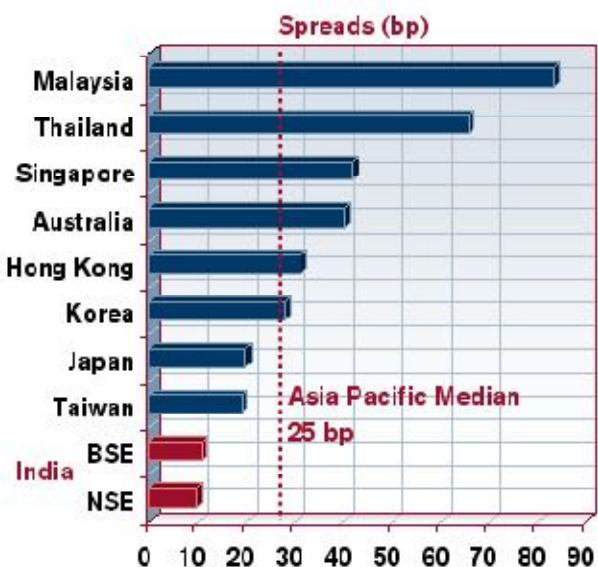
INDIA: Market Structure and Execution Costs

- India's Market structure is Unique
 - High volume: as high as 8% of Asia's total volume
 - Lowest Spreads in the region
 - Relative little shown liquidity on the inside market

Very difficult to trade without market impact.

Algorithms and DMA solutions have to be used with tight constraints

- Anonymity is key in the market
- Algorithms better than DMA
- Users need to employ tight limits
- Algorithms should eliminate block prints from consideration





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Defining a dark pool

- “Non-displayed liquidity”
 - Displayed liquidity now being called “light pools”
 - Some categorization will include alternative venues
- An old concept, new name
 - This has been the role of brokers for years
- Categorizing dark Pools – by ownership
 - Independent (Liquidnet, BlocSec, Instinet, ITG Posit, etc)
 - Broker/Dealer internal dark pools (CS Crossfinder, UBS PIN, Citi Match)
 - Consortium owned (Turquoise in Eur, BIDS in the US)
 - Exchange owned (Chi-x and SGX proposal in Singapore)
- Regulatory implications affect it differently in each market
 - Some regulation means it still needs to be report to central exchanges



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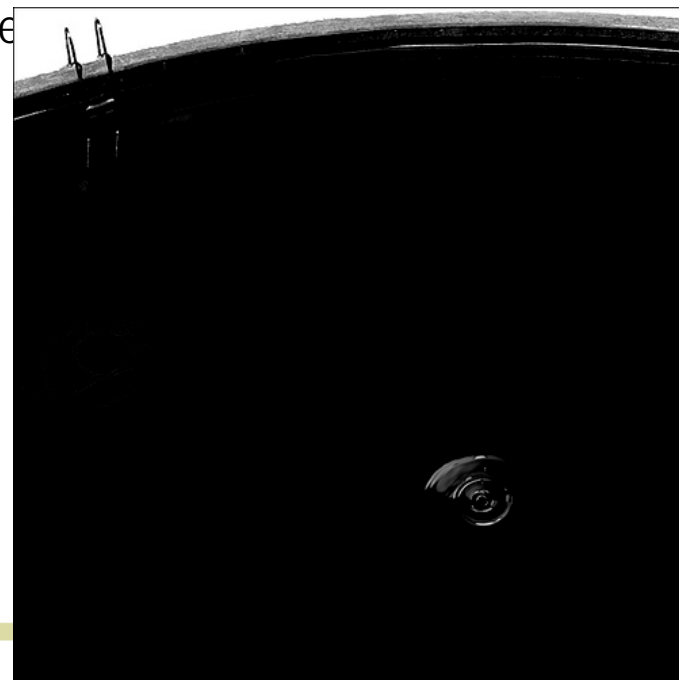
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Dark Pools - Why all the buzz?

- Dark pools are theoretically the *'Most Wanted'* for institutional buy-side client
 - Trading without impact
 - Moving large orders quickly and with limited risk
- Challenging the status-quo
 - New market venues in addition to the traditional e
- Creating competition
 - New companies means new marketing, new buzz
 - Everyone striving to get involved
- The Buzz
 - Flash Orders: Not so fast...
 - Reg ATS Changes:
 - Actionable IOI's < \$200k must be displayed





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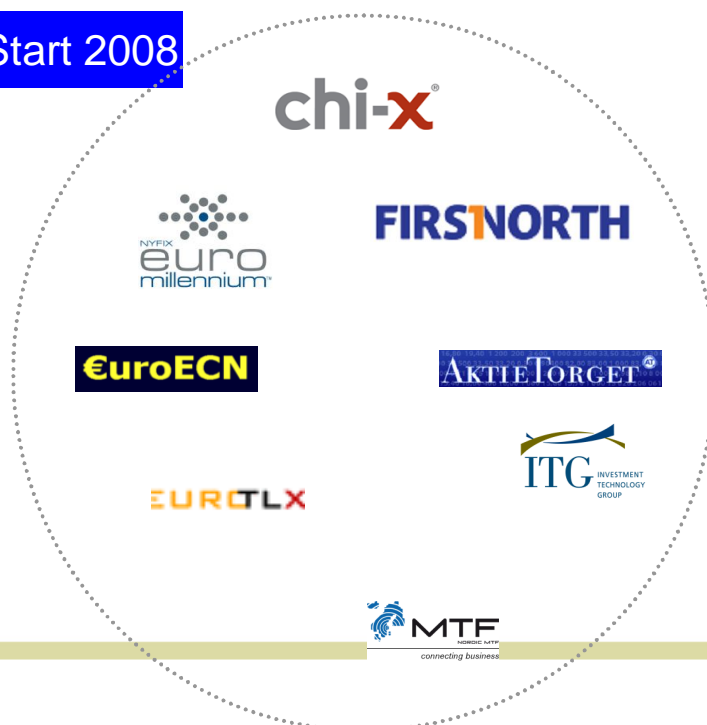
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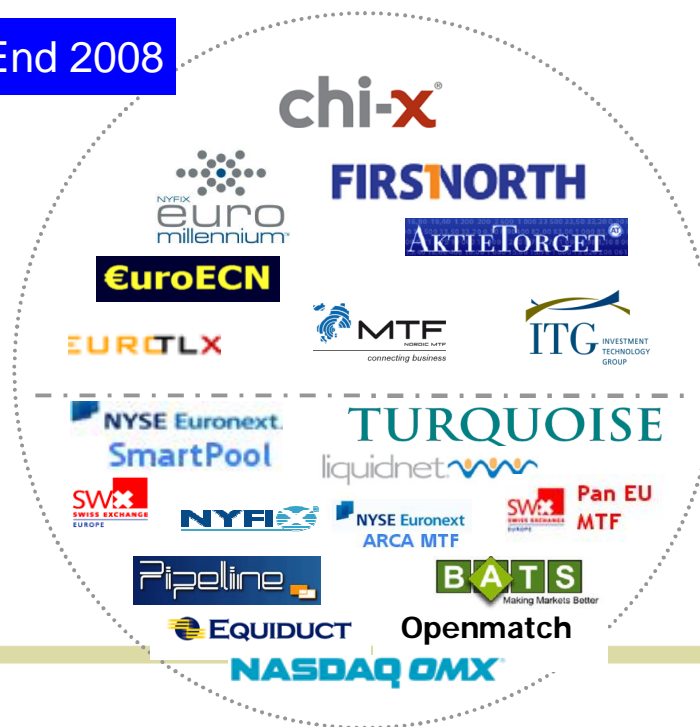
Dark Pools

- In the US market dark pools have gone from relative obscurity pre-2002 to over 40 venues that capture over 12% of US equity market volume
- Europe has seen even faster change
 - Chi-X already seeing almost 20% of FTSE 100 volume

EU Start 2008



EU End 2008





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Evolution of the Liquidity Pool

Growth of Dark Pool Volumes in the US

% Turnover

Dark Liquidity

2006

2%

2008

8%

2009 YTD

12%

2011 (e)

19%



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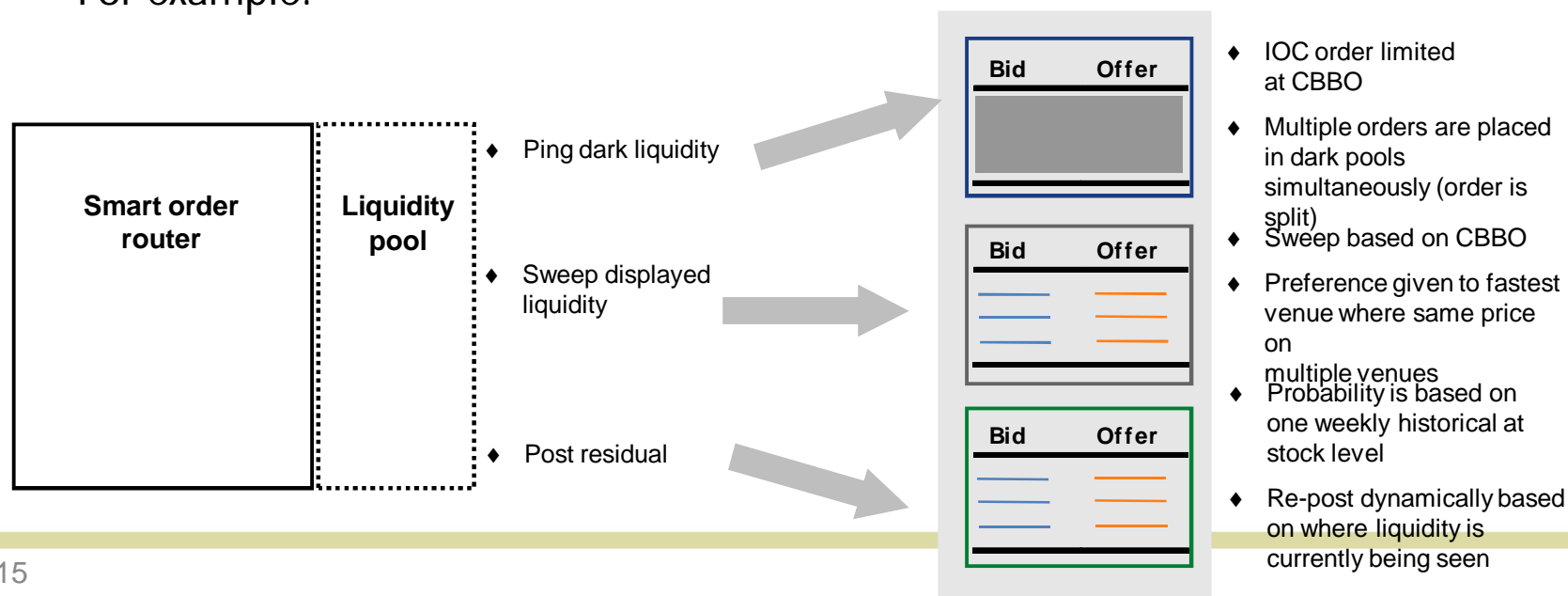
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Smart Order Routing

- Whilst common place in US trading and more recently Europe, market fragmentation resulting from new execution venues and dark pools are gradually bringing the concept to the Asia Pacific
- The key to effective trading in a fragmented market is not only having connections but how you treat each individual market to maximise trading opportunities whilst minimising signalling risk
- For example:





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In Conclusion

- The business case for technology

- For “plain” order routing, FIX enhances the business process and is a complement to the phone
- But for products and services such as....
 - Direct Market Access
 - Algorithmic Trading
 - Efficient Crossing and Internalisation
 - Smart Order routing
- FIX is a prerequisite as these services cannot be accessed or carried out manually!