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## Setting the Scene Electronic Trading and the FIX Protocol

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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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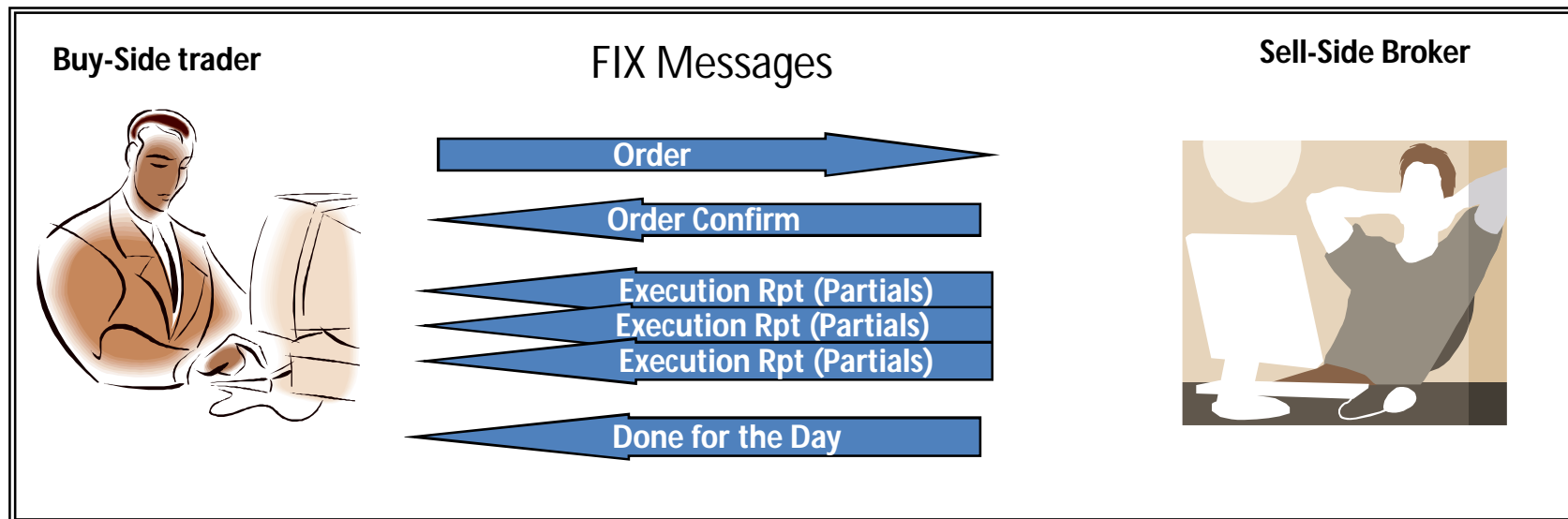
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# FIX - Financial Information eXchange

- FIX = The Financial Information eXchange Protocol
- FIX is a standard way of communicating trading information electronically between brokers, institutions and markets
- FIX is not a piece of software, network or a service – it is just a specification of a protocol





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# FIX - Financial Information eXchange

An example FIX message:

```
BeginString<8>=FIX.4.2 | BodyLength<9>=182 | MsgType<35>=Order-Single<D> | SenderCompID<49>=Client1 |  
TargetCompID<56>=GSUBSCS | MsgSeqNum<34>=7554 | SendingTime<52>=20090518-03:02:35 | SenderSubID<50>=Client1 |  
HandlInst<21>=Automated execution order, private, no Broker intervention<1> | Side<54>=Buy<1> | TransactTime<60>=20090518-03:02:34  
| OrdType<40>=Limit<2> | TimeInForce<59>=Day<0> | OrderQty<38>=100 | Symbol<55>=0005 | Price<44>=60.0000 |  
SecurityExchange<207>=Hong Kong Stock Exchange<HK> | Currency<15>=HKD | Account<1>=1 | IDSource<22>=CUSIP<1>  
SecurityID<48>=HK99000055 | ClOrdID<11>=02682870 | CheckSum<10>=215
```

- ◆ The FIX Protocol supports multiple message types...
  - Single orders
  - Indications of interest
  - Programs / List Trading
  - Allocations/Confirmations
- ◆ And multiple product types
  - Equities, Exchange Traded Derivatives, FOREX, Fixed Income



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# Using FIX - How do I get started?

The vast majority of vendor trading platforms support FIX

## Bloomberg EMSX — Global EMS

The screenshot shows the Bloomberg EMSX Add Order window. It features a 'Quick Buttons' section with 'B - VolIn150'. The main area is a form for entering order details, including 'Montage' (Side, Quantity, Ticker, Type, Limit, TIF, Broker), 'HandInst' (CashQ), 'Account', 'Instructions', 'Strategy', and 'Broker Fields' (Start Time, End Time, % VOLUME, OPG, MOC). There are also 'Additional Fields' for GTD, StopPx, OddLots, ExecInst, P/A, and CFID. The 'Settle' date is 05/21/09 and 'ExchDest' is US. Buttons for 'Add', 'Route', 'Manual', and 'Clear' are at the bottom.

## Trading Screen — Global EMS

The screenshot shows a trading screen window for 'Equity' with 'Option' selected. It displays market data for 'UBS 100%' and '13 HUTCHISON ORD'. The interface includes 'Buy' and 'Sell' buttons, a 'Price' field, and a 'Display' section. Below the market data, there are 'Submit' and 'DMA' buttons, and a 'Depth' section with 'New Order', 'Cancel All', and 'Pre-Trade' buttons. The 'Price' is 6.321275 USD and 'Actual' is 0 USD. There are also 'Strategy Parameters' and 'OPG' fields.

## Eze Castle — Global OMS

The screenshot shows the 'Execution: Sending Order to UBSW' window. It includes a 'Destination' dropdown set to 'US' and a 'Tactic' dropdown set to 'TAP'. There are 'Start Time', 'End Time', and 'MOC' fields. The 'Order Type' is 'MKT' and 'Limit Price' is '62.80'. There are also 'Comp Price' and '% Volume Cap' fields. The window has 'Cancel' and 'Send' buttons at the bottom.

## Hundsun

The screenshot shows the Hundsun trading platform interface. It features a table with columns for '指令编号' (Order No.), '委托状态' (Order Status), '交易市场' (Market), '证券代码' (Security Code), '币种' (Currency), '委托方向' (Order Direction), '指令价格' (Order Price), '指令数量' (Order Quantity), '委托数量' (Order Amount), '成交数量' (Executed Quantity), '成交均价' (Executed Price), '未委托量' (Unexecuted Amount), '指令金额' (Order Amount), '累计成交金额' (Cumulative Executed Amount), '今日委托数量' (Today's Order Quantity), '今日成交数量' (Today's Executed Quantity), '未委托量' (Unexecuted Amount), and '组合名称' (Portfolio Name). Below the table, there are sections for '行权信息' (Exercise Information) and '正在执行的指令' (Orders Being Executed).

## TORA — Global EMS

The screenshot shows the TORA trading platform interface. It features a table with columns for 'R', 'S', 'px', 'lv', 'op', 'ac', 'cl', 'tk', 'MCLS', 'MKT', 'OVER', '2.0', '18121.8', '62.30', '2.4', 'p%', '-3.11', '486.4', '78.8', '62.55', '407.6', '141.2', '62.50', '266.4', '133.6', '62.45', '152.8', '73.2', '62.40', '59.6', '59.6', '62.30', '2.4', '2.4', '62.25', '13.6', '16.0', '62.20', '68.4', '84.4', '62.15', '51.6', '138.0', '62.10', '149.8', '285.6', 'UNDER'. Below the table, there are sections for 'TIF', 'PC', 'bk account', 'tag', 'alloc method', 'o/c', 'sol', 'DM\_ACC', 'Internal acc', 'tradebook', 'fls', 'syn', 'DemoGroup', and 'Reg DMA', 'Worked', 'Send DMA', 'Man', 'BUY' buttons.



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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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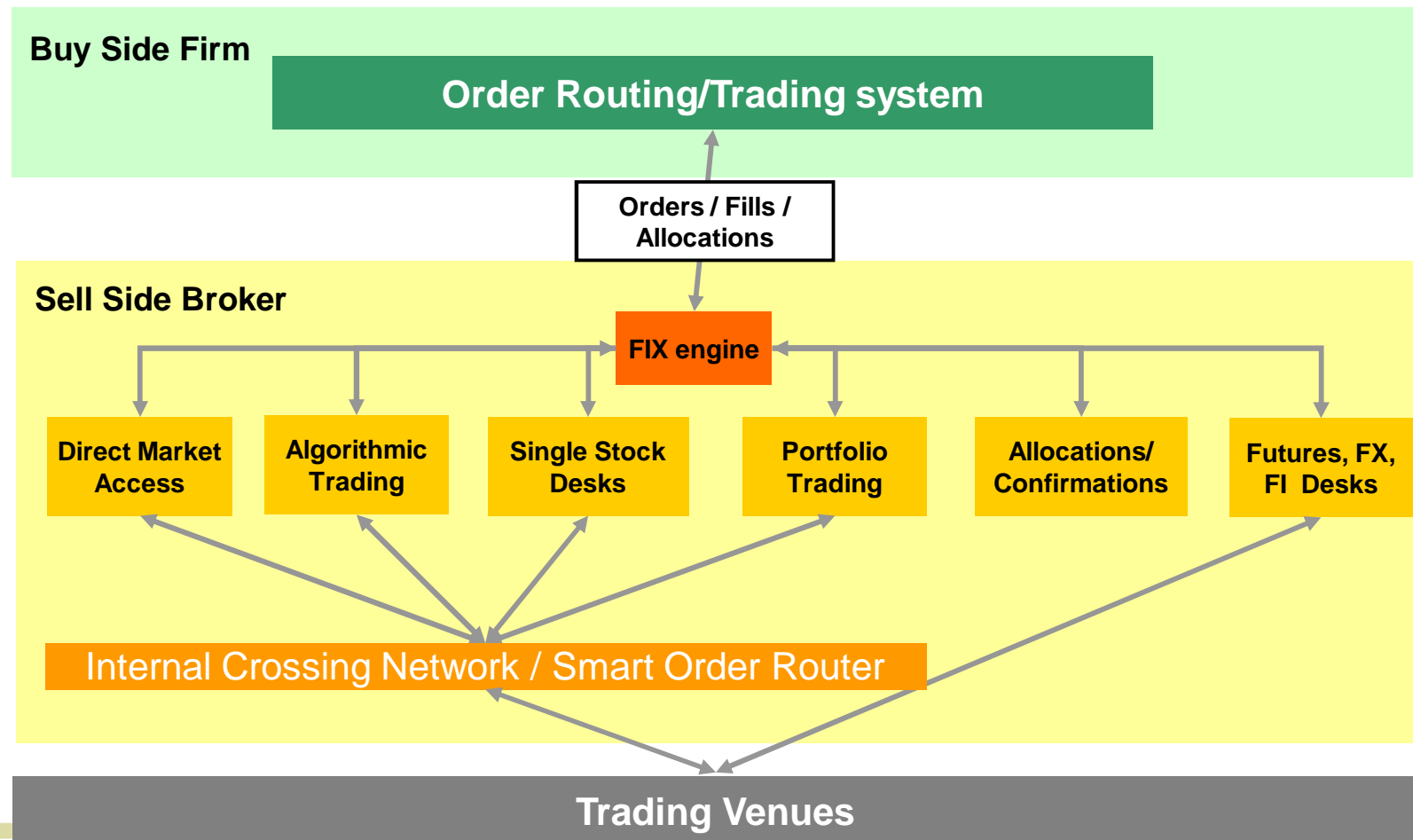
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# FIX – Electronic trading example

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





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# Clarifying the Terminology

- **Worked (or Care) or Basket order flows**
  - Sending orders electronically to sellside's sales-traders or program traders for manual acceptance
  - Traditional trading process similar to telephoned orders
- **Direct Market Access (DMA)**
  - Buy-side trading desk routes/trades 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 venues
  - All trading can make use of SOR to achieve Best Execution





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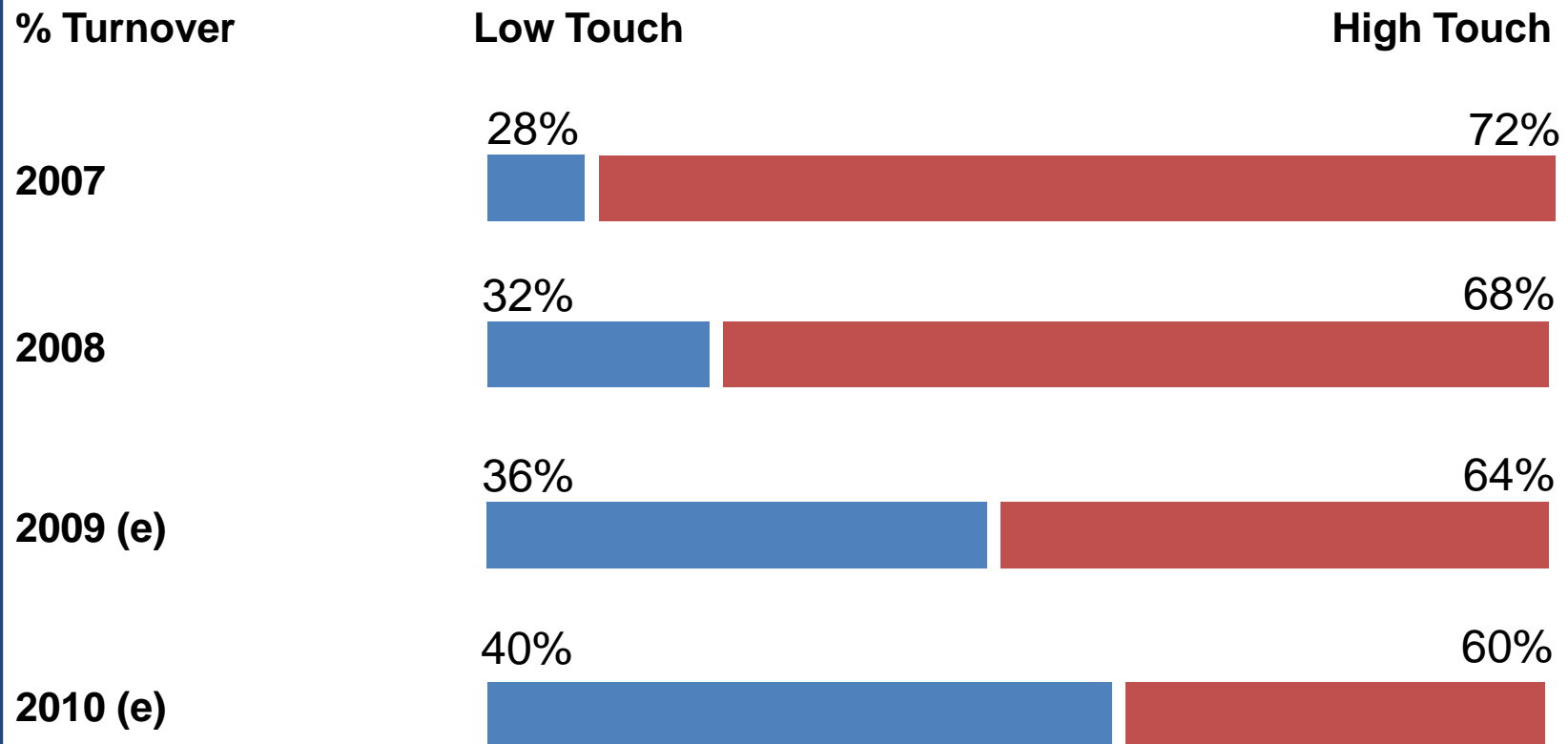
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# Growth in DMA and Algorithmic trading

## 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 and Liquidity**  
Multiple venues for trading the same stock. Computer algorithms make it easier
-



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# Several types of algorithms have evolved

## ◆ **Benchmark or Scheduled-driven algorithms**

- Structured with fixed start and end, adheres to schedule
- VWAP, TWAP, Implementation Shortfall, etc

## ◆ **Market-driven algorithms**

- Reactive, monitors real-time activity in the market, reacts to events
- Volume Inline, Price Inline, etc

## ◆ **Liquidity Seeking algorithms**

- Intelligently accesses multiple pools of liquidity – exchanges, alternative lit and dark pools
- Dagger, Sniper, TAP, etc.

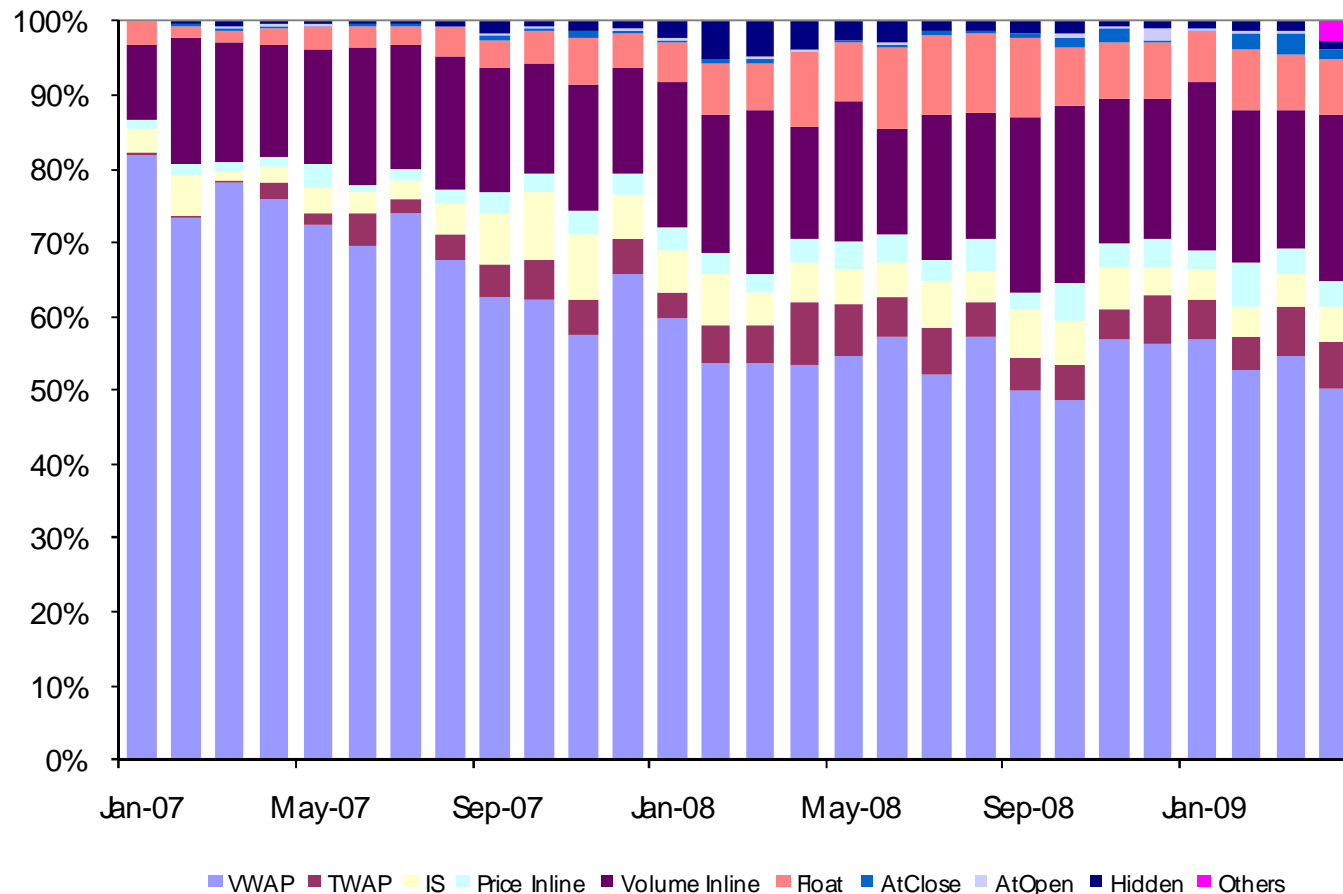
## ◆ **Selecting the right algorithm is key**

- Selecting when to use algorithms and which algorithms to use



# Asia Pacific Algorithm Usage

Seeing a steady move away from VWAP to more price sensitive and liquidity seeking algorithms





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## Dark Pools - Why all the buzz?

- **Dark pools are theoretically the *ultimate quest* for institutional buy-sides**
  - Trading without impact
  - Moving large orders quickly and with limited risk
- **Challenging the status-quo**
  - New market venues in addition to the traditional exchanges
- **Creating competition**
  - New venues with business models from the traditional exchanges
  - Everyone striving to get involved



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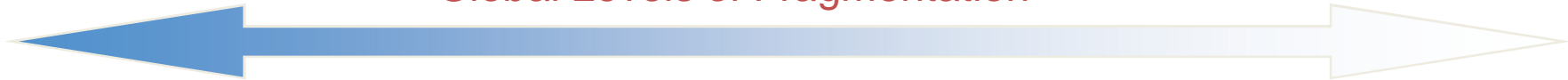
# Defining a dark pool

- **“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 (Citi Match, CS Crossfinder, UBS PIN)
  - Consortium owned (Turquoise in Europe, BIDS in the US)
  - Exchange-owned
- **Different implications from different regulatory requirements in each market**
  - Some regulation mandate central reporting to primary exchanges



# Dark Pools

## Global Levels of Fragmentation



High

USA

- Highly fragmented market circa 40-50 venues
- The recent years of massive growth in trading volumes made new venues viable
- Fragmentation is now being followed by consolidation

Europe

- Regulatory initiative (MiFID) is resulting in Europe fragmenting
- Almost 20% of FTSE 100 volume traded on Chi-X

Asia Pacific

- Not yet fragmented
- Similar to Europe pre MiFID, i.e. single issuer / exchange model

Low

EU Start 2008



EU End 2008

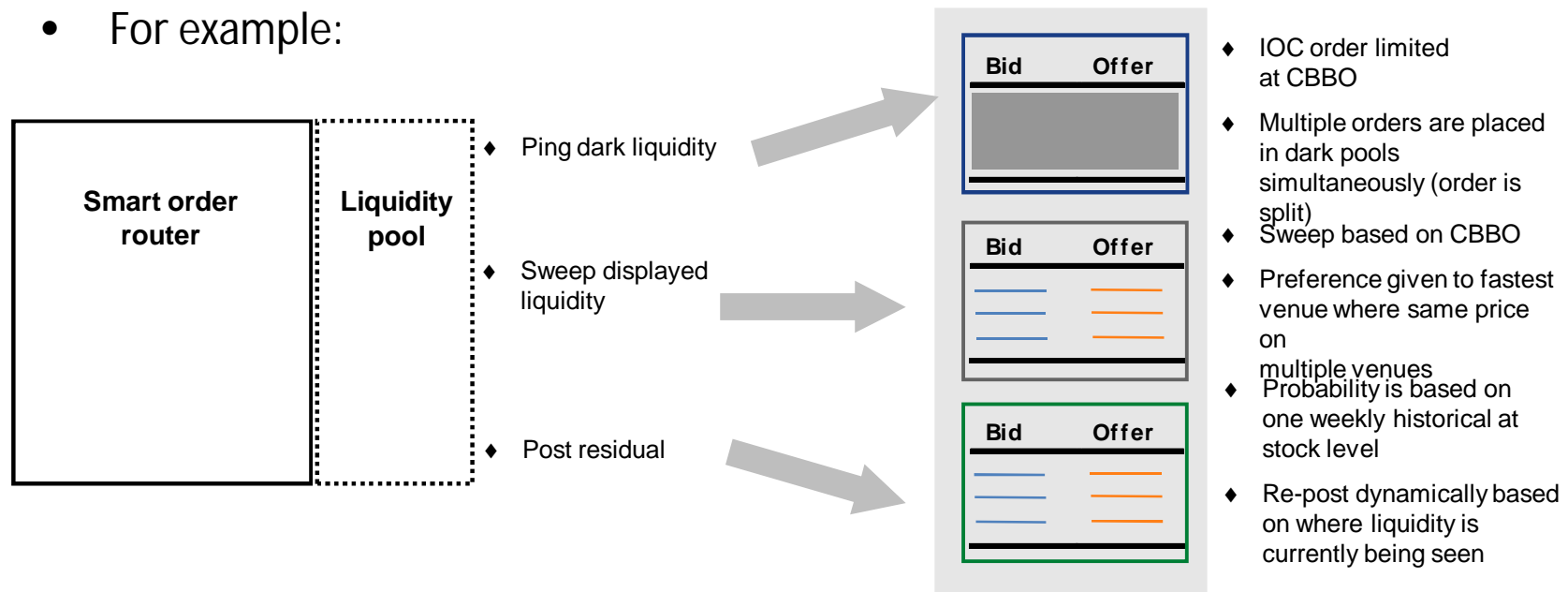




# Smart Order Routing

- 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 – FIX and Technology is key

- 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!