

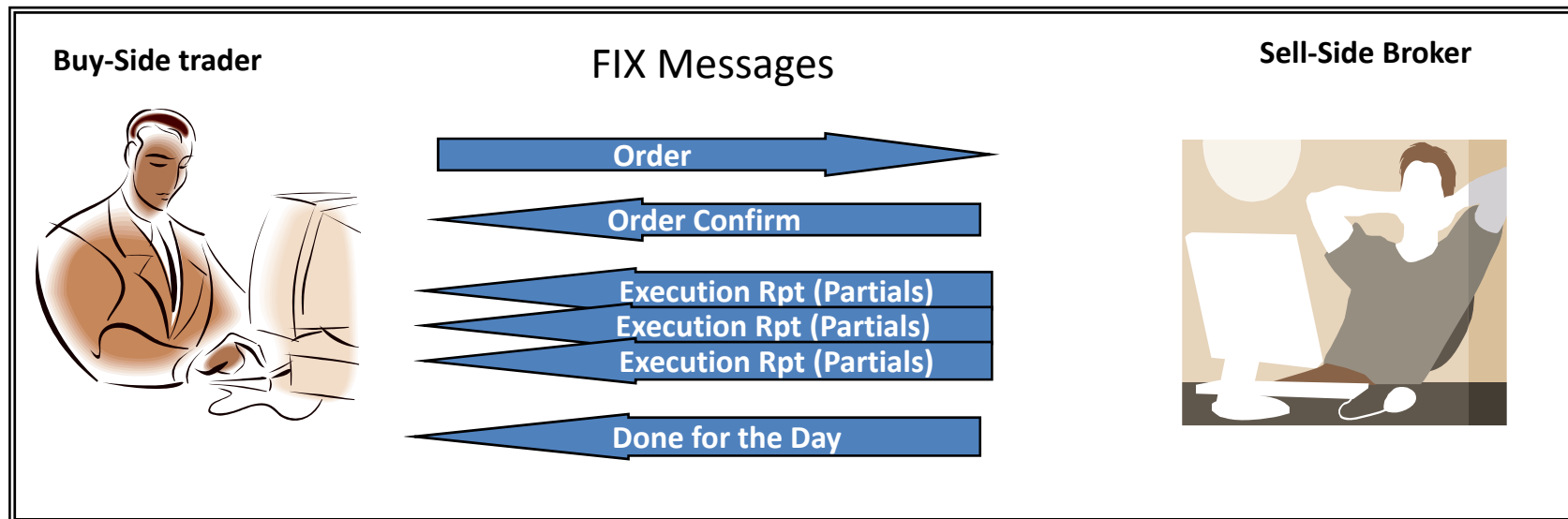
**FIX 101**

# 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



# FIX - Financial Information eXchange

- ◆ 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

# Some Examples of FIX Messages

Home NetAdmin NetMonitor

CameronFIX NetMonitor >> Logs

Server Groups: default Servers: localhostEquities

Equities.log

<<Line>> Go to  Order

<<Page>> Page Size

[First](#) [Last](#)

```
318 2007-08-02 13:27:28,625 INFO out.AG_Edwards_Schwab - >2 OrderSingle (BeginString(8)=FIX.4.2 | BodyLength(9)=106 |
MsgType(35)=OrderSingle(D) | SenderCompID(49)=Schwab | TargetCompID(56)=AG Edwards | MsgSeqNum(34)=2 |
SendingTime(52)=20070802-17:27:28 | Side(54)=Buy(1) | OrdType(40)=Limit(2) | HandlInst(21)
=AutomatedExecutionOrderPrivateNoBrokerIntervention(1) | Symbol(55)=ATU | OrderQty(38)=10000 | Price(44)=97.75 |
ClOrdID(11)=Order-0 | CheckSum(10)=115 | )

319 2007-08-02 13:27:28,625 INFO out.Barclays_Schwab - >2 OrderSingle (BeginString(8)=FIX.4.2 | BodyLength(9)=104 |
MsgType(35)=OrderSingle(D) | SenderCompID(49)=Schwab | TargetCompID(56)=Barclays | MsgSeqNum(34)=2 |
SendingTime(52)=20070802-17:27:28 | Side(54)=Buy(1) | OrdType(40)=Limit(2) | HandlInst(21)
=AutomatedExecutionOrderPrivateNoBrokerIntervention(1) | Symbol(55)=NRI | OrderQty(38)=10000 | Price(44)=70.64 |
ClOrdID(11)=Order-0 | CheckSum(10)=036 | )

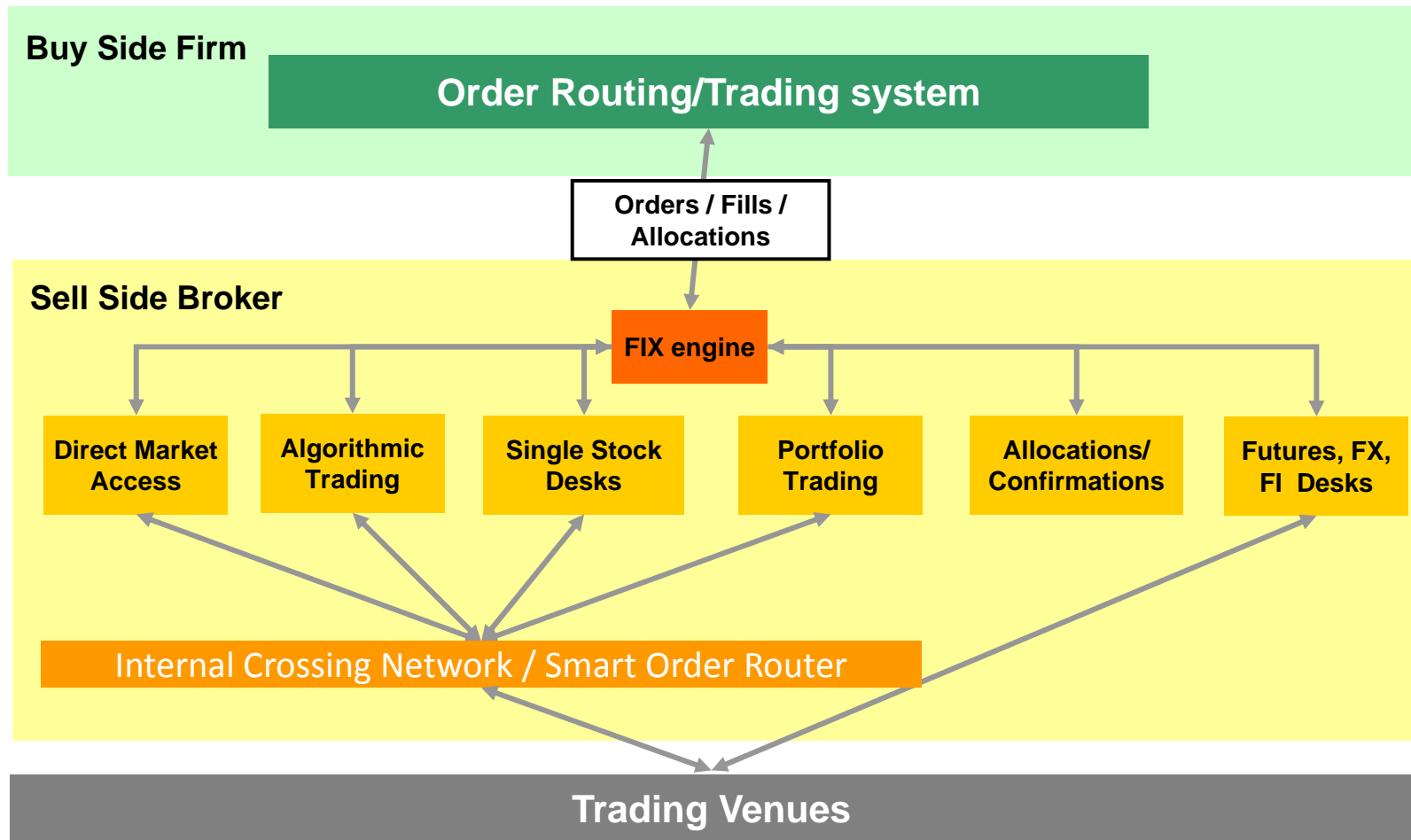
320 2007-08-02 13:27:28,625 INFO out.BNP_Schwab - >2 OrderSingle (BeginString(8)=FIX.4.2 | BodyLength(9)=99 | MsgType
(35)=OrderSingle(D) | SenderCompID(49)=Schwab | TargetCompID(56)=BNP | MsgSeqNum(34)=2 | SendingTime(52)
=20070802-17:27:28 | Side(54)=Buy(1) | OrdType(40)=Limit(2) | HandlInst(21)
=AutomatedExecutionOrderPrivateNoBrokerIntervention(1) | Symbol(55)=HZO | OrderQty(38)=10000 | Price(44)=21.64 |
ClOrdID(11)=Order-0 | CheckSum(10)=180 | )

321 2007-08-02 13:27:28,640 INFO out.Cantor_Schwab - >2 OrderSingle (BeginString(8)=FIX.4.2 | BodyLength(9)=97 | MsgType
(35)=OrderSingle(D) | SenderCompID(49)=Schwab | TargetCompID(56)=Cantor | MsgSeqNum(34)=2 | SendingTime(52)
=20070802-17:27:28 | Side(54)=Buy(1) | OrdType(40)=Limit(2) | HandlInst(21)
=AutomatedExecutionOrderPrivateNoBrokerIntervention(1) | Symbol(55)=JRC | OrderQty(38)=0 | Price(44)=6.09 | ClOrdID
(11)=Order-0 | CheckSum(10)=056 | )

322 2007-08-02 13:27:28,640 INFO out.Cazenove_Schwab - >2 OrderSingle (BeginString(8)=FIX.4.2 | BodyLength(9)=104 |
MsgType(35)=OrderSingle(D) | SenderCompID(49)=Schwab | TargetCompID(56)=Cazenove | MsgSeqNum(34)=2 |
SendingTime(52)=20070802-17:27:28 | Side(54)=Buy(1) | OrdType(40)=Limit(2) | HandlInst(21)
```

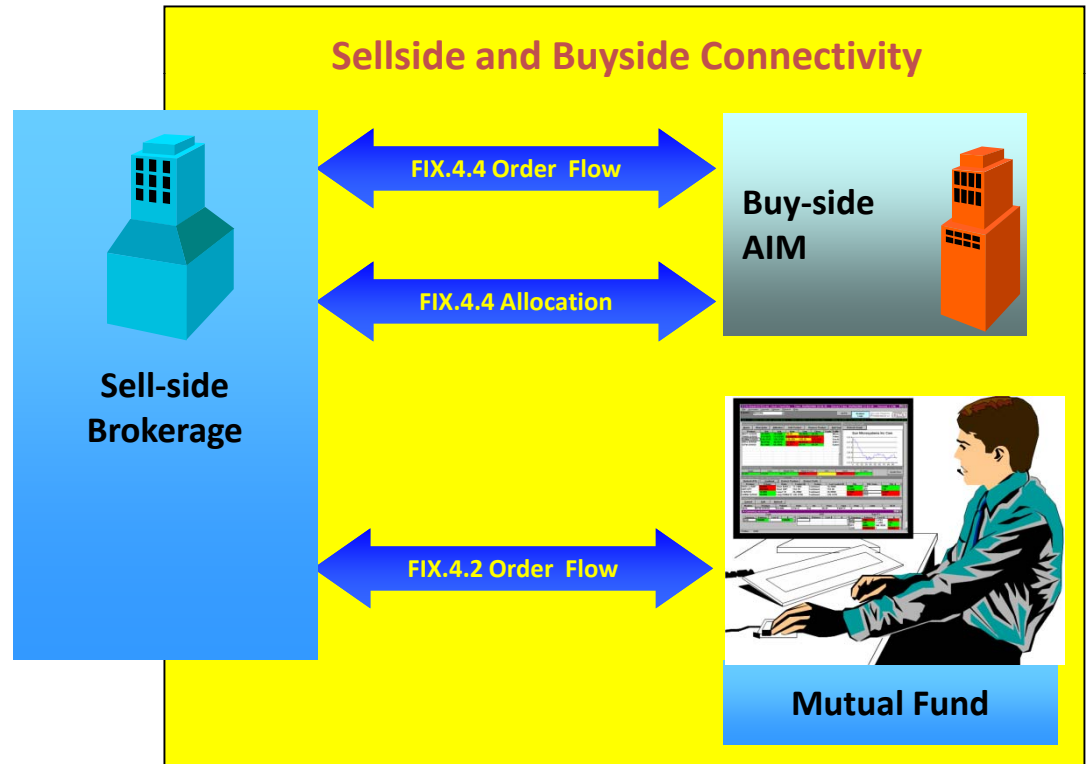
# FIX – Electronic trading example

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



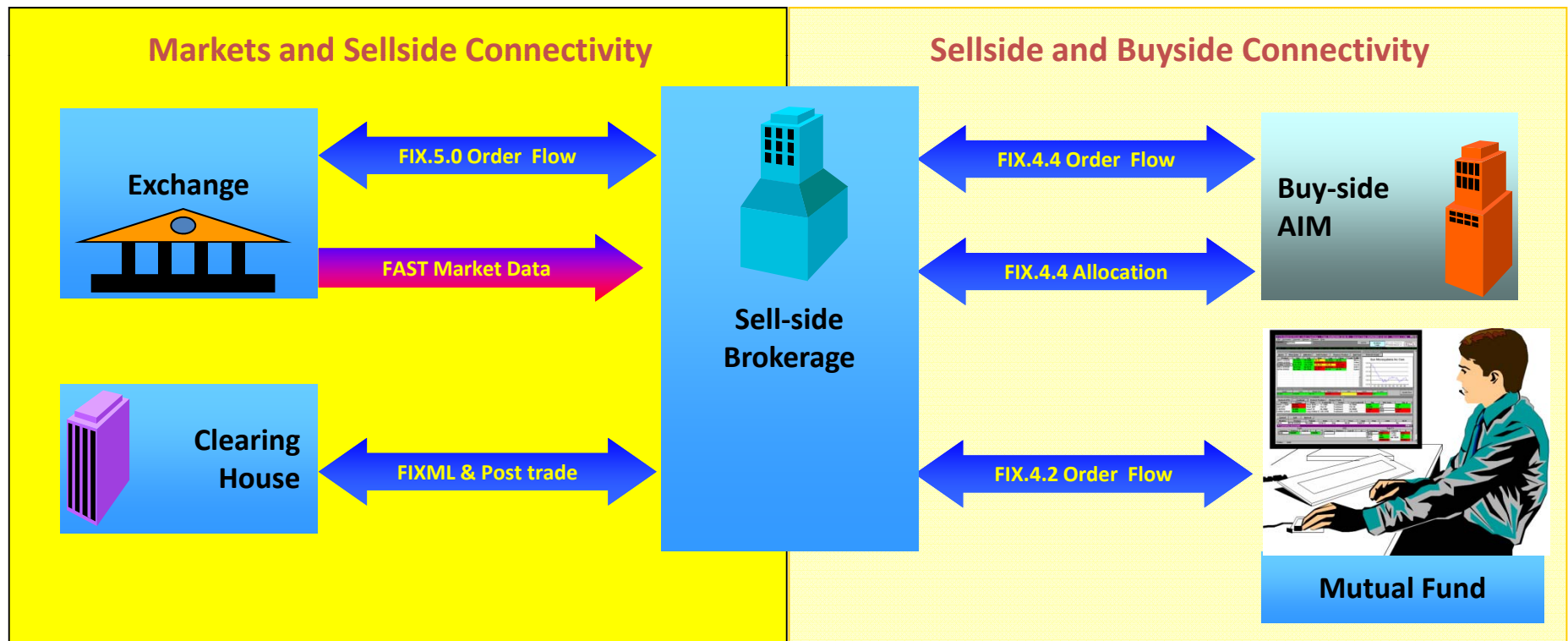
# Interoperability between Buy-side and Sell-side

Adoption of the FIX protocol has resulted in higher levels of interoperability for the financial services community, saving firms the cost of maintaining multiple syntaxes within the same area of the transaction lifecycle.



# Interoperability between Market and Sell-side

Adoption of the FIX 5 protocol should result in the same higher levels of interoperability for market side connectivity, sell side the cost of maintaining multiple syntaxes within the same area of the transaction lifecycle.



## Who currently uses FIX?

Today, it is estimated that there are in excess of 10,000 organisations using the FIX protocol.

- Virtually every major stock exchange ECN/MTF and dark pool
- Leading derivative exchanges
- Major investment banks
- The world's largest mutual funds, money managers and hedge funds
- Majority of ISVs, ASPs providing trading & risk management solutions
- Thousands of smaller investment firms



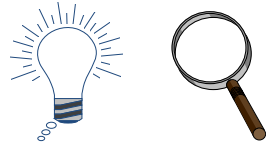
# 10,000+ Firms Use FIX Globally



# Example: FIX Order Flow – Asset Manager to Broker

Asset Manager

Broker



IOIs & Advertisements



Order



Order Confirm



Don't Know Trade



Execution Rpt (Partials)

Execution Rpt (Partials)

Execution Rpt (Partials)

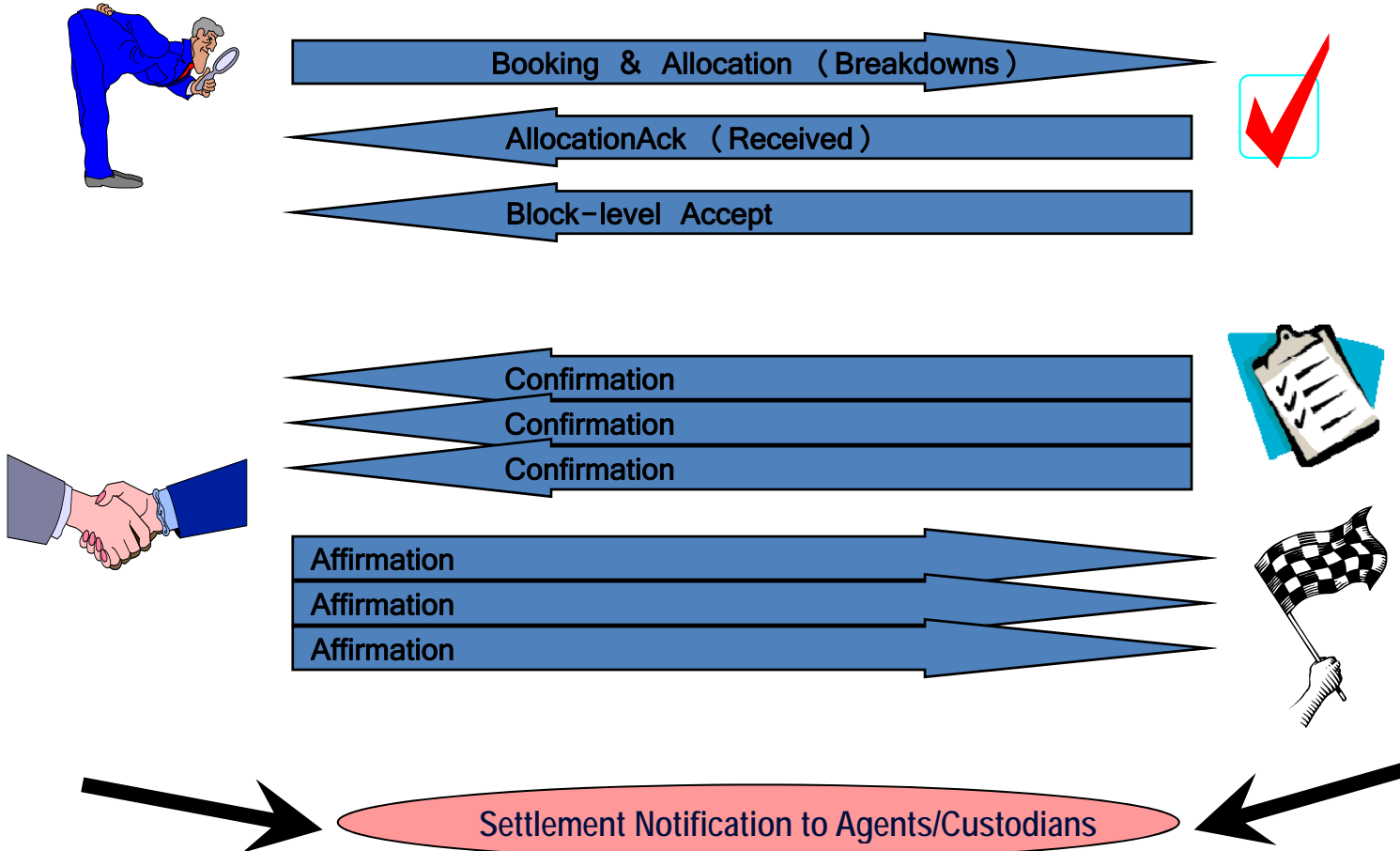
Done for the Day



# Example: Post Trade FIX – Asset Manager to Broker

Asset Manager

Broker



# Australia Has Significant Usage Of FIX Today

**Exchanges/ECN's** - Australian Stock Exchange, Sydney Futures Exchange, Liquidnet, Chi-X, AXE

**Investment Banks/Brokers** – Citigroup, Macquarie, UBS, Goldman/JP Morgan, Commonwealth Securities, Merrill Lynch, Credit Suisse, ABN, Deutsche, JP Morgan, Morgan Stanley + most tier 2 brokers

Many Asset Managers / Hedge Funds

Nearly all software vendors/technology providers – IRESS, Charles River, Latent Zero, Macgregor, Bloomberg, Tora, Orc, Ullink, ITG, Nyfix, Instinet etc

# Australia Was Early to Electronic Trading But Late to FIX

- Very early use of electronic trading
- Widespread usage of SEATS & IRESS
- Diversification driving increased demand for investing offshore
- Growing focus from non-Australian domiciled business on investment into Australia
- Increasing usage of FIX driven by international order flow

# The Benefits FIX Presents for Australia

- **A global protocol** - FIX is the pre-eminent global electronic trading protocol
- **Simple connectivity** - FIX provides easy connectivity to multiple counter-parties
- **Multi-asset class** - FIX is an open standard for multiple security classes
- **Vendor Neutral** – FIX reduces reliance on broker and vendor proprietary solutions
- **Industry-driven, not-for-profit** - The FIX Protocol is owned and maintained by FIX Protocol Limited

# 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

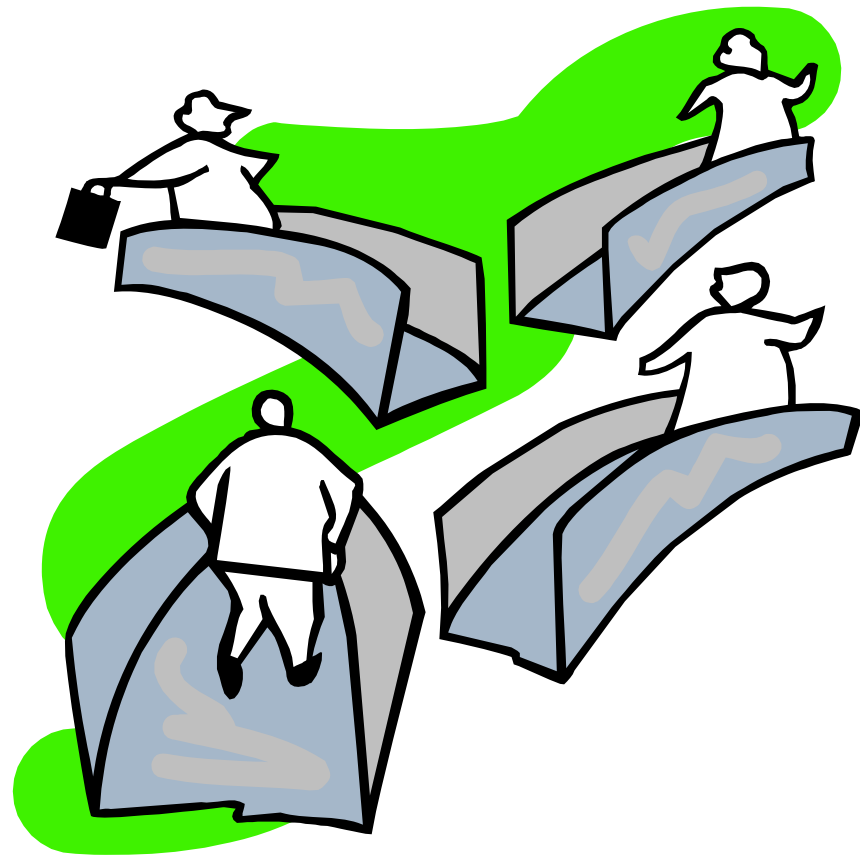
# The drivers towards DMA and Algorithmic Trading

- ◆ **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



# The Future

- Of course FIX works. But our work in FIX is not done!
- FIX continues to expand in new directions
- Much of this expansion is driven by:
  - Exchanges and Regulators
  - Non-US business requirements
- This presentation will:
  - Discuss FPL's current strategy
  - Highlight changes in recent FIX versions of benefit to Exchanges and Regulators
  - List some ongoing projects



# FPL Strategy

- FIX lowers costs for markets and participants
- Standardized usage of FIX lowers costs
- Center-Out Strategy: Focus on Exchanges and Regulators
- New Hires:
  - Bernie Simon, FPL Membership Relations (2010)
  - Edward Mangles, Asia-Pac Regional Director (2009)
  - Stuart Adams, EMEA Regional Director (2009)
- Extension Pack (EP) Releases
  - New functionality can be approved and ready to implement in as little as 2 months
  - EPs are now published on the [www.fixprotocol.org](http://www.fixprotocol.org) website

# FIX 5.0 – December, 2006

- FIX 5.0 (Application Layer) separated from FIXT 1.1 (Session Layer)
- Algorithmic Trading enhancements
- Cross Order enhancements
- Clearing, Trade Reporting, and Allocation Reporting
- Market Data Optimizations
- Listed Derivatives Collateral Reporting
- User Defined Spreads
- FX Enhancements
- Order Routing (Reserve, Peg, Triggered)
- Support for China and MiFID

# FIX 5.0 SP1 – March, 2008

- Security Definition
- Continuous Quoting, Quote Negotiation
- Market Data Enhancements and Recovery
- Derivatives, Options, Equities, Trading Session Parameters
- Market and Market Segment Definition
- Mass Action Enhancements and Report Messages
- Multileg Order Enhancements
- Contingent Orders
- Application Sequencing
- Performance enhancements for Exchanges

# FIX 5.0 SP2 – April, 2009

- Derivates Trade Capture enhancements
- Delta Position Limits
- Energy Products
- FX: Non-Deliverable Forwards
- Credit Default Swaps clearing
- Exotic Options
- London Stock Exchange (LSE) enhancements
- Party and Risk Limits Reference Data

# Since FIX 5.0 SP2

- Investment Industry Regulatory Organization of Canada (IIROC) regulatory data feed
- ASIC Short Position Reporting Going Live
- Large Options Position Reports
- Margin messages for derivatives
- More LSE enhancements
- Parties Reference Data enhancements
- Market Data enhancements
- FX matching enhancements
- OTC Trading and Clearing enhancements

# Current and Upcoming Projects

- Account Management Working Group:
  - Entitlements
- FIXatdl (algorithms)
- FAST (compressed market data) and Binary FIX (compressed order flow) for High Frequency trading
- Stateless FIX
- Communicating message rate throttling limits
- FIX Inter-Party Latency reporting
- Working with:
  - Hong Kong Exchange
  - New Zealand Exchange
  - Australian Securities and Investments Commission (ASIC)