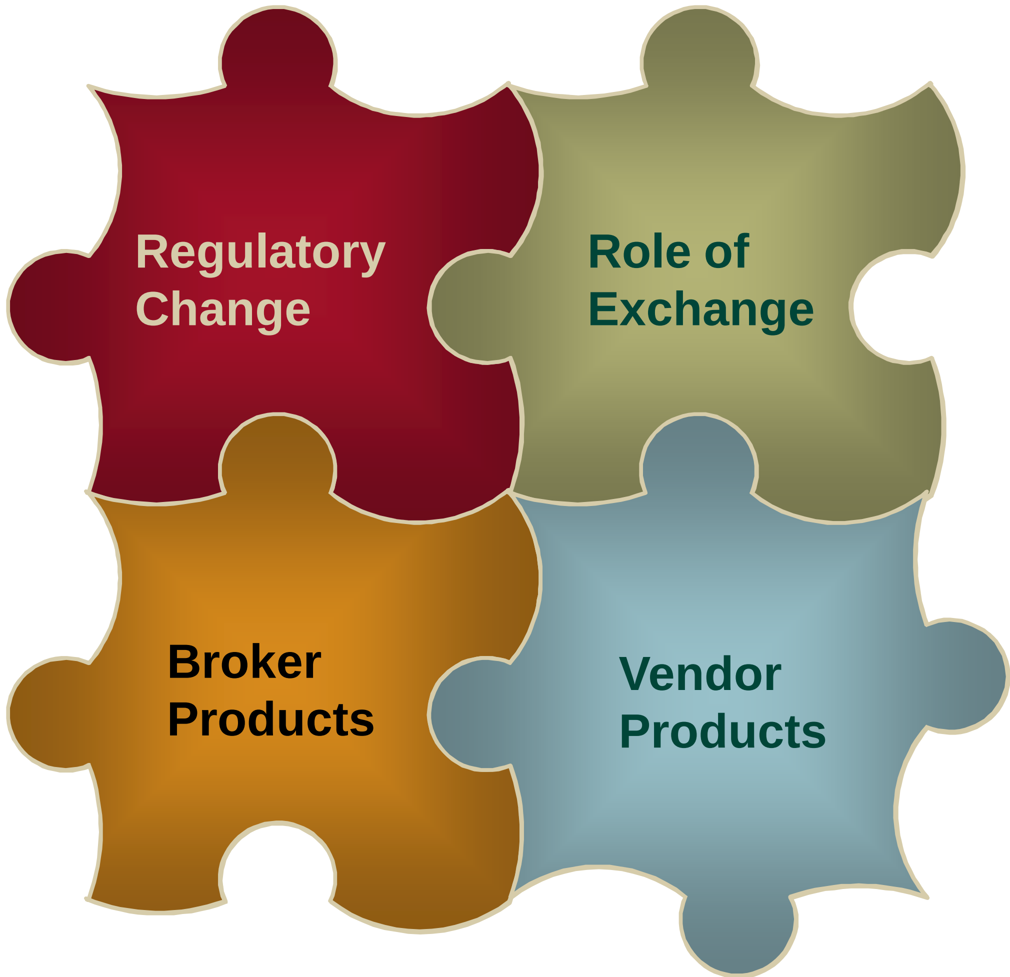
The Future Exchange Trading Landscape



Ronald Gould Managing Director Promontory Financial Group

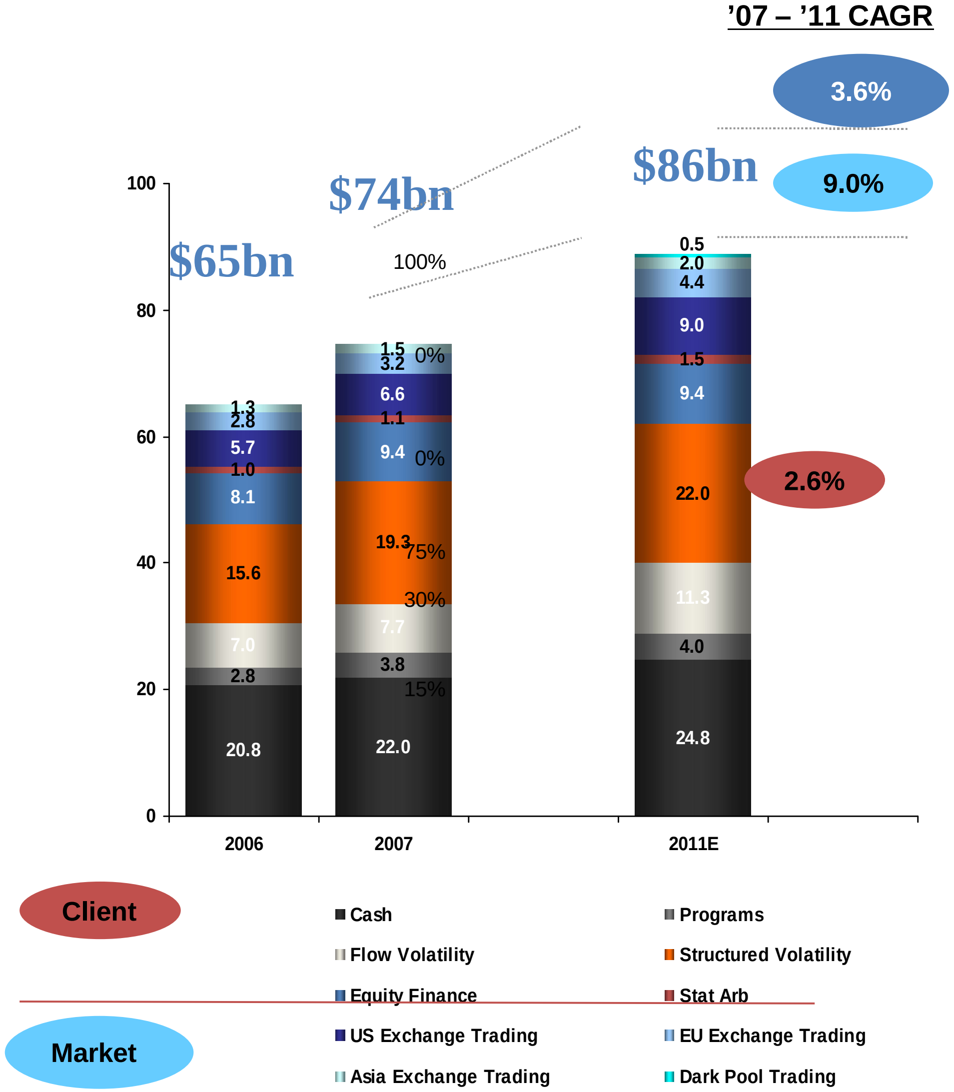
What got us here? – Change!

- Changing investor demands
  - speed > liquidity > cost
- Regulatory change
  - US > Europe > Asia?
- Technology change
  - Speed > capacity > connectivity

The Result (so far)

- Proliferation of trading venues
- Faster transactions
- More transactions
- Cheaper transactions
- Increased liquidity but fragmentation
- Emergence of global traders in multi asset classes – integrated trading strategies
- Clearing efficiencies

Global Equities Trading Fee Pool ($bn)



Key Market Trends

- Electronic trading represents the fastest growing execution product in global equities
- Total direct access electronic client wallet estimated to grow from $11bn in '07 to $20bn in 2011
  - 2007: Direct access is 18% of $11bn total client wallet
  - 2011: Direct access is 27% of $20bn client wallet
- Total global equity product exchange fee pool estimated to grow to $16bn by 2011 – 62% total growth from 2006
- Crossing Networks, ECNs, Dark Pools and Algorithmic execution channels are the fastest growing part of the equities fee pool

The Impact

- New technology & regulatory change fostered creation of new trading venues
  - Created a dramatic increase in overall trading capacity
  - Capacity utilisation dropped as trading rose but market share became more dispersed
    - All trading venues are like an industrial machine – capacity utilisation drives operating profitability
    - In a competitive environment, price pressure reduced margins and drove the need to find more trade volume

Where has it all led?

- Venue proliferation = profit pressure
- Profit pressure = drive for consolidation
  - LSE/Italia> LSE/Turquoise> LSE/TMX
  - Euronext> NYSE/Euronext> NYSE/Euronext/DB?
  - BATS/Chi-X etc

- Now what?

Macro Market and Regulatory Trends

Macro Market Trends

	Arising Technology Developments	Resulting Outcome
Multiple Prime Brokerage Relationships	▪ The global financial crisis has caused hedge fund managers to reduce risk to any single prime broker.	▪ Higher costs for prime brokers. ▪ Both brokers and hedge funds require independent and flexible trading technology infrastructure.
Cost of Competing	▪ Increasing costs of trading in the new market structure has collided with post-crisis cost reductions and operational cost rationalization.	▪ Market participants are now more open to complete or partial external solutions. ▪ For hedge funds trading with multiple prime brokers, the “buy option” is more attractive than the “build option”.

Regulatory Trends

	Arising Technology Developments	Resulting Outcome
Clearing	▪ Further reduction of post trade costs will stimulate new European market entrants (e.g., from the U.S.) to connect to the new markets. ▪ Post-trade risk and risk management complexity is increasing with fragmentation.	▪ Move to real-time collateral management across interoperating clearers and real-time gross settlement. ▪ All of these forces accelerate demand for new low latency infrastructure-linking markets.
Regulations	▪ Potential systemic risk posed by high frequency trading in a fragmented, evolving market is fostering the impetus for enactment of a new wave of regulation.	▪ Fragmentation, need for multiple prime brokerage relationships plus the required infrastructure and expense makes a complete trading ecosystem a pre-condition in creating a solution.

Markets Are at Very Different Stages of Evolution toward "Orderly Virtual Markets"

Mature End State

	Fixed income	Commodities	Equities
Orderly virtual market *Multiple, linked exchange, ATS and internal dealer venues*	• FX		• U.S. cash equities
Exchanges/Single marketplaces *Regulated environment for order matching and price discovery among large groups of buyers and sellers*	• IR futures • Governments	• Crude oil, gasoline, gas oil • Metals • Agricultural • Power (Nordpool) • Ethanol • Coal • Natural Gas	• European cash equities • Index derivatives • Single name futures
OTC *Bilateral agreements between individual buyers and sellers (or agents); standardization and post-trade centralization vary*	• IR swaps • Flow credit derivatives • High grade bonds • High yield and EM bonds • CDOs	• Power (ex-Nordpool) • Carbon emissions • Fuel oil	• Total return swaps • Contracts for difference • Volatility derivatives • Retail structured products
Spot/contract *Bilateral, customized, extensively negotiated agreements*	• Structured credit • Loans	• LNG	• Structured derivatives

Clear Client Preference for Multi-Asset Trading Platforms

Factors Driving Multi-Asset Trading (% of responses)

Source: SIFMA, McKinsey

- > 50% of surveyed buy-side clients prefer trading off an integrated multi-asset class platform
- 100% of multi-strategy hedge funds and 70%+ of all hedge funds prefer single platforms
- Significant perceived benefits:
  - Easier integration with pre-trade research and analytics, especially across capital structure
  - More reliable reporting and post-trade analytics
  - Superior margining through netting and cross-margining
  - Easier optimization of buy-side algorithms as they need to interface with only one GUI and feature set
  - Eliminates need to create integration layer within buy-side to see integrated positions and balances

Lessons to Date

•Western markets operate an open competition model
•Open competition models have delivered, lower costs, technological innovation and enlarged liquidity
•Open competition models have also fragmented market shares, reduced capacity utilisation and pressured profit margins
•User owned alternative trading venues have re-introduced a kind of mutualisation
•The need for scale is driving consolidation
•Consolidation moves are crystalising conflicts between open competition models and national champions

•The battle between open competition models and national champions is still going and too close to call, even in Western markets. Politics may govern the result.

•Asia is completely different

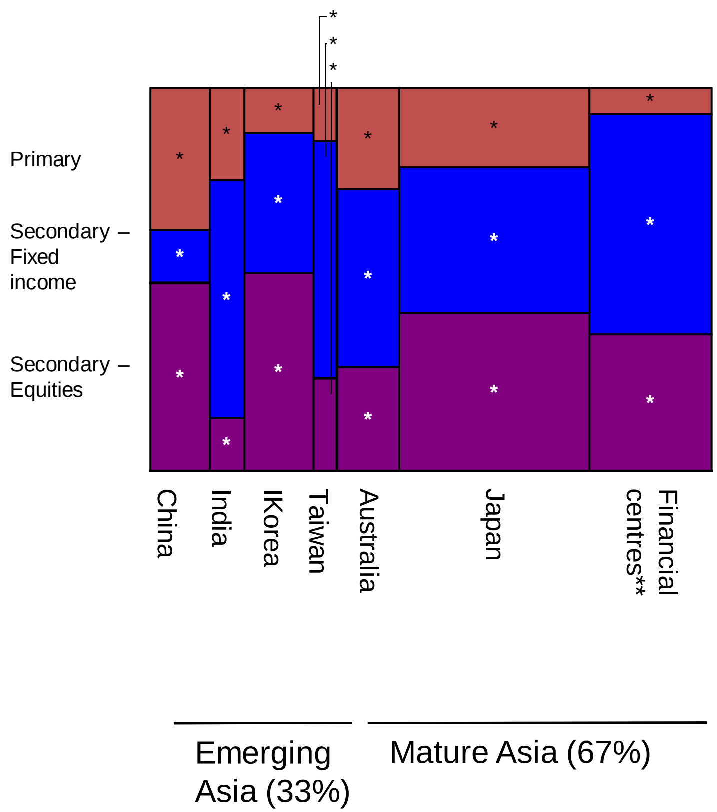
	The Near Future -- EUROPE	The Near Future -- ASIA
Speed	■ Virtually all European lit books will have latency under 250µs between Q4 2010 and Q1 2011. ■ Latency in many market places will be under 50µs by Q4 2011. ■ All inter-market link latencies exceed trade process cycles by a factor of 4x or significantly more, excluding the participant algo trading technology stack.	■ The launch of the TSE's Arrowhead in January 2010, combined with new major market platform releases throughout Asia by the end of 2011, means that all platforms are operating faster than the intervening links between markets except Hong Kong. ■ Most major platforms will operate in the 500µ to 6ms range.
Distributed Trading	■ Driven by MiFID, new markets and technological advances, liquidity is becoming highly fragmented.	■ Alternative markets – lit, dark, crossing, block – are proliferating across the region, but particularly in Japan and Australia. ■ IOC and other order types critical to high frequency trading and electronic market making are now emerging
Synchronization	■ Matching engines will be unsynchronized from the highly distributed trading architectures. – Due to distributed trading architectures, unsynchronized matching engines, and matching engine speed that will be faster than link latency.	■ Matching engines will be unsynchronized from the highly distributed trading architectures. – Due to distributed trading architectures, unsynchronized matching engines, and matching engine speed that will be faster than link latency.
Routing	■ Smart Order Routing is evolving into distributed algorithmic routing.	■ The new arbitrage opportunities created by the rise of multiple market models, multiple venues within a country and the advent of cross border listed derivatives is driving the need and demand for SOR in Asia.
Enhanced Content	■ Distributed trading infrastructure with linked applications.	■ Distributed trading infrastructure with linked applications.

Asian Trading Venue Landscape

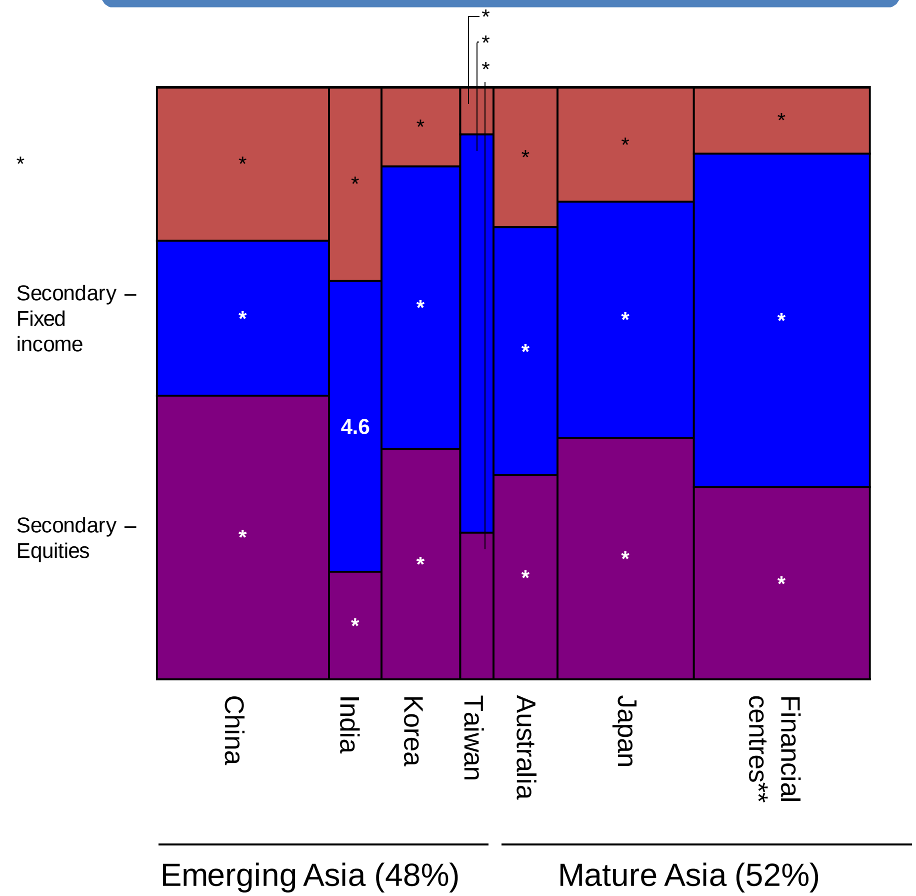
- Asia is a mix of monopolies & hybrids
    - Little to suggest that politics will permit major change from current balance
- No pan-Asian regulation and little probability it will develop
- National competition will remain a powerful factor in maintaining status quo
- Pressure for change will come from investors, new technology & national champions looking for growth options
    - Investment in technology demands higher returns
    - Investors want lower costs and more integrated trading
    - Emergence of pan-Asian clearing possibilities will put pressure on current national models
    - Protected exchanges will seek cross border links to leverage technology investments
    - Alternative liquidity providers, including dark liquidity, will become more accepted and mainstream
    - “linkage vendors” will make alliances more effective

The Prize

2006 Revenue Pools* ($56bn)



Estimated 2012 Revenue Pools* ($125bn)



* Primary includes M&A, DCM, ECM, syndicated lending. Fixed income includes FX, rates, credit, commodities, FI prop. Equities include cash equities, equity derivatives and equity prop. Excludes corporate lending and specialized finance.

** Comprised of Hong Kong and Singapore

Source: McKinsey analysis

Foolish Predictions

- Open competition models will drive continuing consolidation, subject to political interference
  - NYSE/DB will struggle to realise economies
  - LSE/TMX “
  - BATS will discover Asia – organic or acquisition?
- Asia will evolve in a hybrid fashion
  - Asian regulators may permit more alternative venues over time to keep the exchanges “honest” and stimulate innovation
  - Quasi-monopolies will continue but under pressure to innovate more and cost less
  - Exchange alliances likely across Asia – a kind of market “code sharing” SGX & ASX, OSE, BSE
  - More integrated multi asset class trading structures, both local and cross-border
  - Vendor links between venues facilitated by exchange investments in technology
  - Pan-Asian clearing will make a debut

Local Challenge

- HKEx is the world's most valuable trading venue ($24b vs. NYSE@ $9.2b)
- Without its China listings, HKEx is a smaller & less liquid exchange than in the 1990's – China
- The Shanghai Stock Exchange is struggling to upgrade its technology & approach – it will get there eventually
- RMB non-convertibility and foreign buyer restrictions are the biggest roadblocks to SSE regional dominance
    - These can disappear overnight!
- HKEx has a time window within which it must make itself uniquely critical in a broader PRC context or face irrelevance in the future
    - Technology leapfrog needed
    - Integrated RMB products
    - Integrated multi-asset trading platform and products
- If HKEx can do this, the case for backing SSE into HKEx may be compelling