

The Changing Landscape of Electronic Trading – The Technology Aspect

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Agenda

- Challenges geographically outside Korea
- Buy/Sell Side requirements outside Korea
- Investment Pressures
- Technology – Doing more with Less
- Where does this lead to – with examples
- The Economics of FIX Protocol as a Standard
- FIX Networks – Connecting Korea to the Global Capital Markets

Challenges outside Korea

US/Europe

- Rapid fragmentation of liquidity over the past few years
- Regulations such as MiFID have accelerated the rise of ECNs, crossing networks, MTFs and ATs

Japan

- Fragmentation was stale between early 2000's to 2012, but picking up since TSE/OSE merger due to regulatory friendly environment/public opinion
- Greyish best execution policy

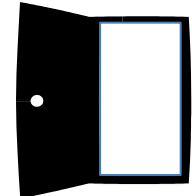
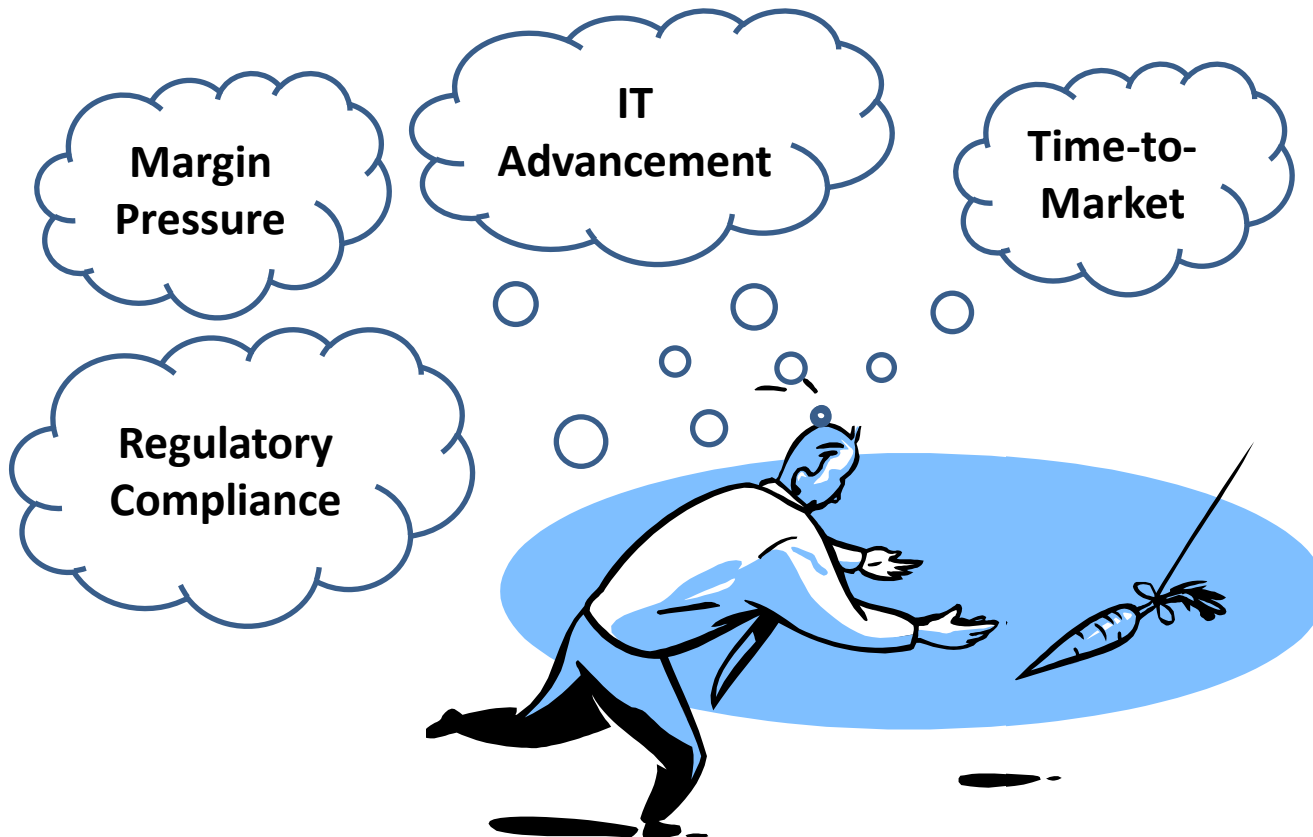
Globally – US, Europe, Japan/HK

- Challenging and costly to connect to numerous sources of liquidity
- Difficult to keep up with the pace of technology development and cost
- Firms lack IT resources and competency
- Pressure on margin combined with reduced budget force firms to do more with less

Buy-Side/Sell-Side Requirements outside Korea

- Access to low latency market data in normalized format from fragmented markets
- Algo trading survival critical
- Trading system that can handle large quantity of low latency data and calculations
- DMA access to multi venue and multi market
- Smart order routing to reach diverse venues for sell sides
- Analytics
 - Pre-trade compliance checks for buy sides, and post trade risk management
 - Pre-, post-trade analytics (cost of trade)
 - Data mining
- Reduce IT infrastructure and connectivity through outsourcing, cloud computing

Investment Pressures



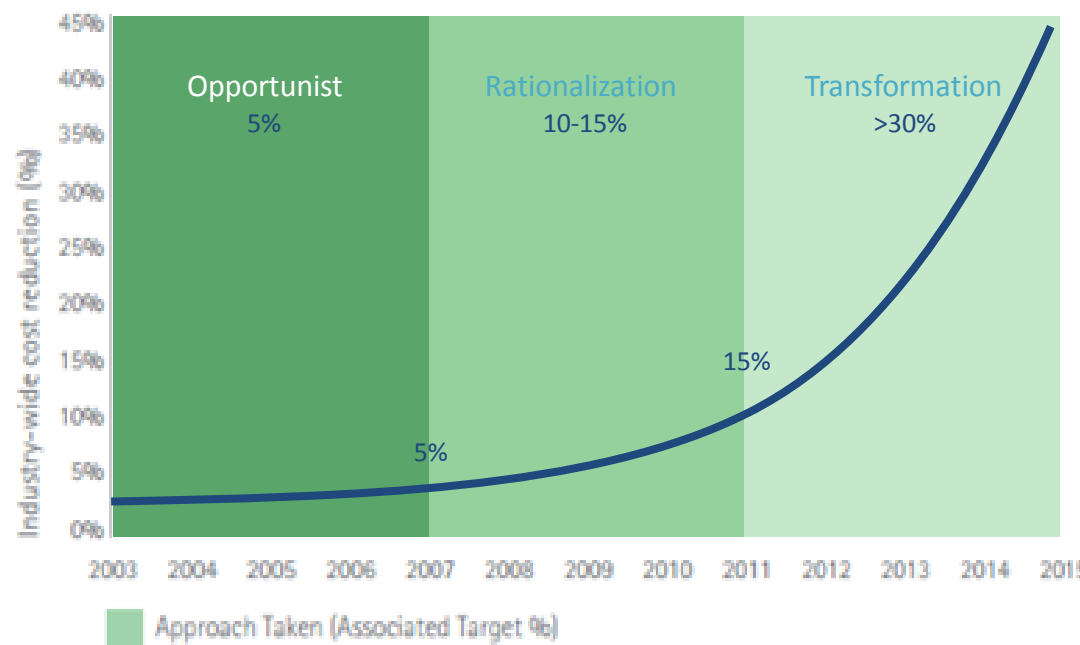
- ✓ Managed Services
- ✓ Modular and Advanced Technology
- ✓ Cost efficiency

Technology – Doing More with Less

Challenge: Drive Down Costs

- Billions of dollars in cost reductions required from infrastructure
- Growing costs around uncontrollable issues, like regulation
- Non-revenue opportunities costing too much time and money
- Margins are increasingly being compressed throughout the industry

Firms Expected to Cut 20-30% of Costs

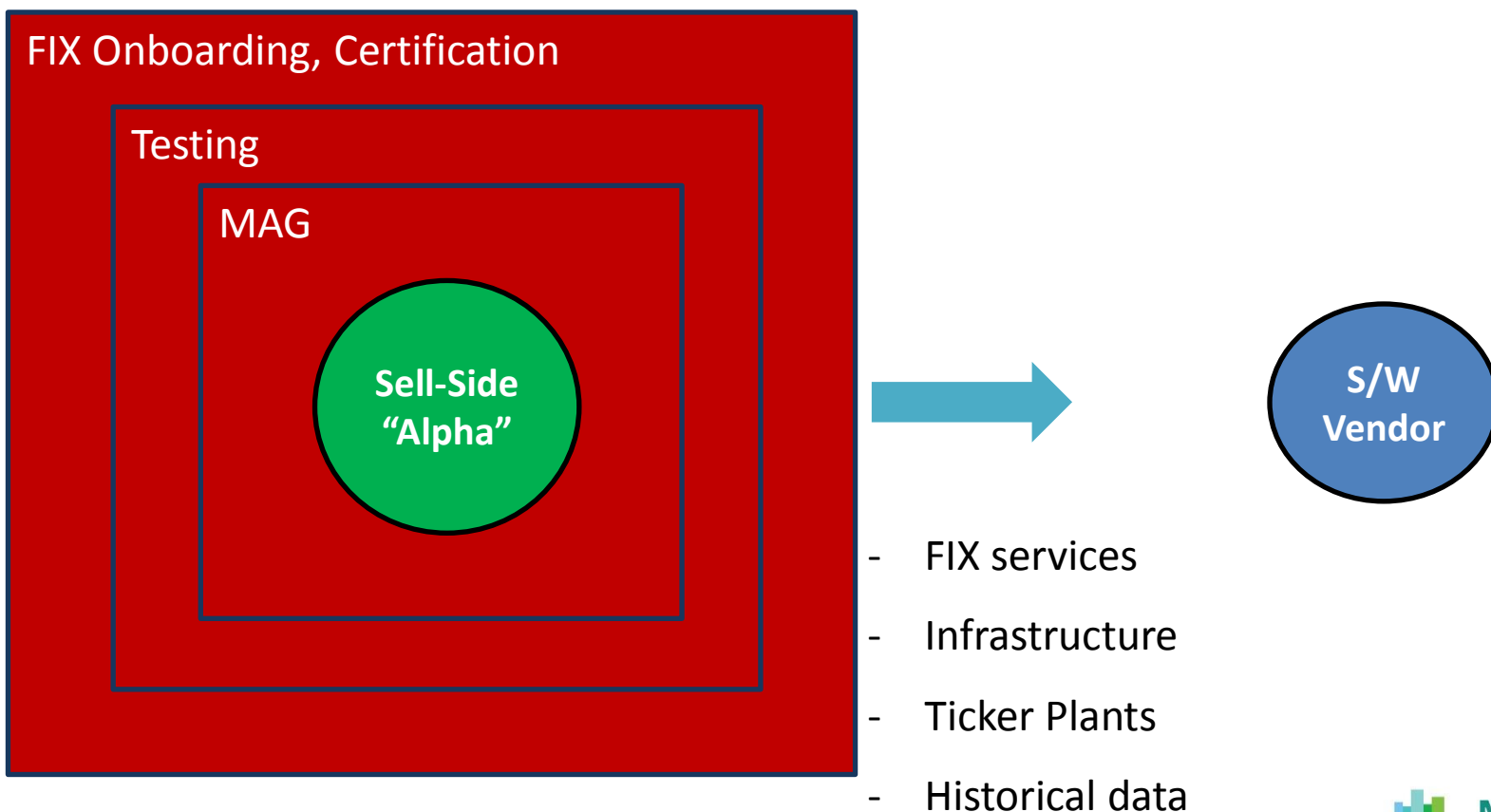


Source: Accenture Research

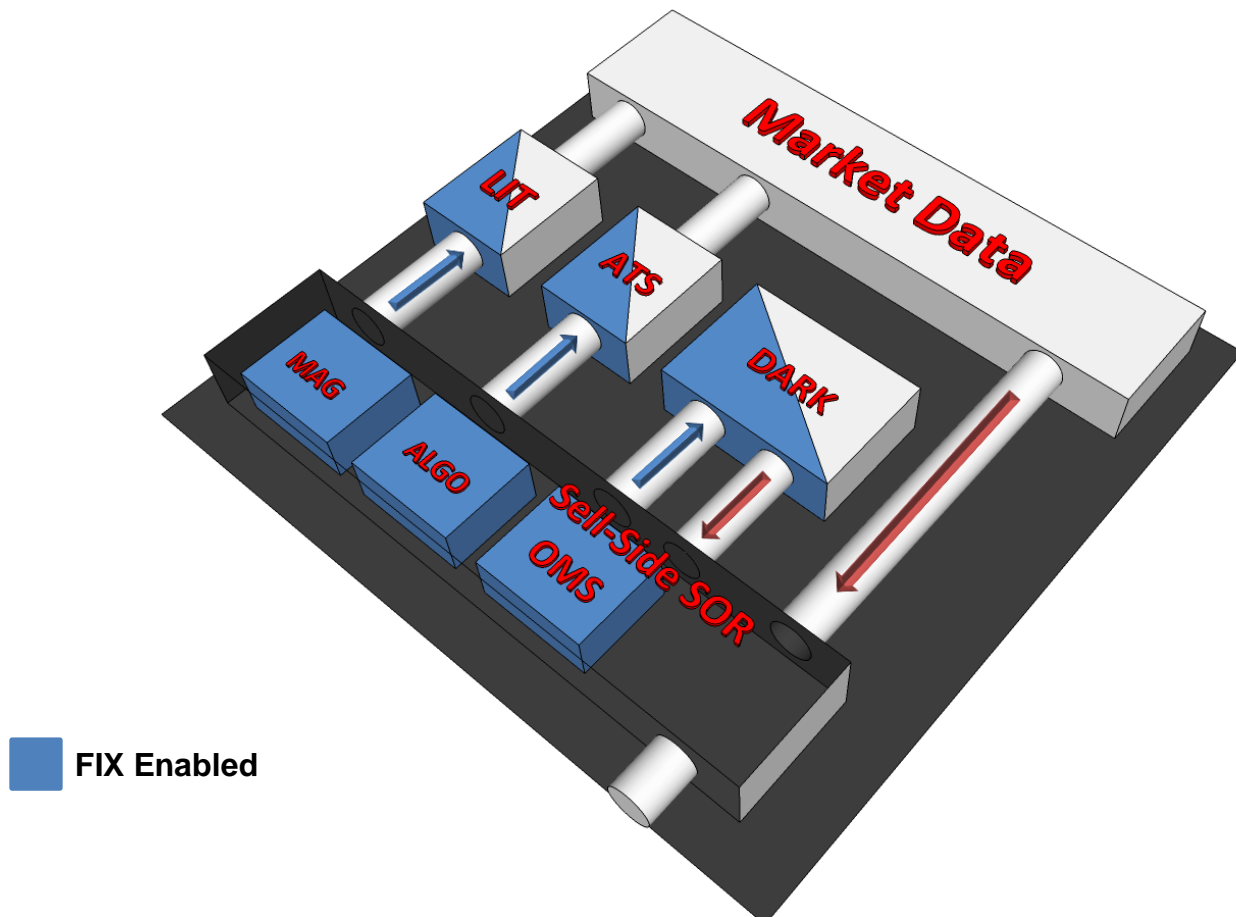
Where does this lead to?

- Outsourcing technical areas of “commodities” to third party vendors
- Smart Order Routing, in a fragmenting market
- Adopting the Economics of Standards – FIX Protocol

Outsourcing Technical Areas of “Commodities”



Multi-Venue SOR - Visualized



Multiple SOR – Advanced Requirements

- Combine SOR algorithm with algorithmic trading strategies
- Shift from sequential SOR to simultaneous SOR demands more functionality/complexity
- Lowest latency
- Server hosting (proximity or multiple collocation)
- Automated decision making by SOR engine
- Transparency (venue, order routing prioritization, disclosure of client position to markets, dark pool-to-dark pool transparency)
- Transaction Cost Analytics
- Risk managed Gateways to become low latency and linked to MAGs
- Different profiles from high-frequency traders to institutional and retailers
- Consideration of IOIs
- Pre/post trading analytics
- Increasing flexibility (customization) of SOR required (system vs toolkit surface)
- FIX Protocol a critical success factor

The Economics of Standards – FIX Protocol

Open vs. Proprietary Standards

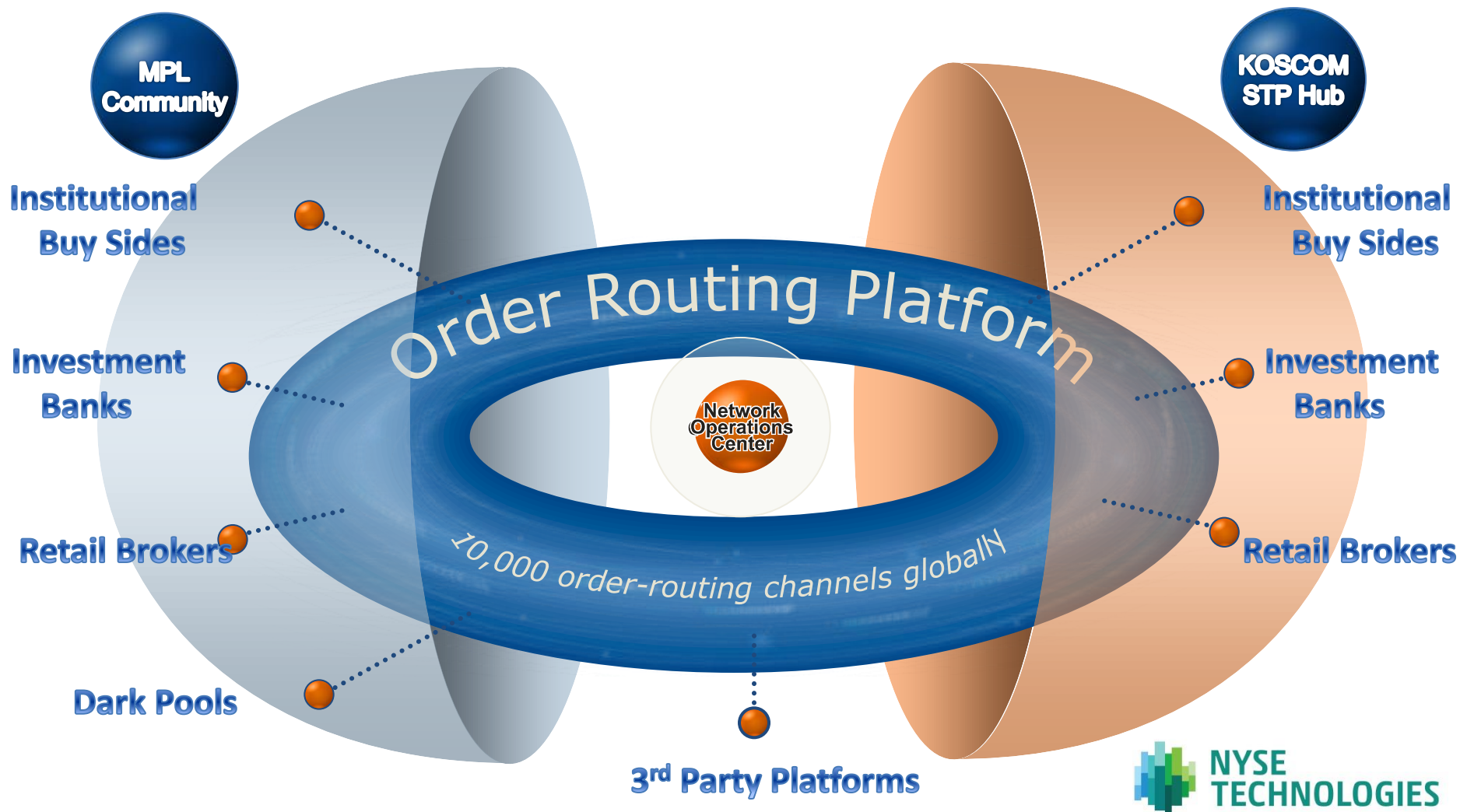
- Free-Ridership/Global Reach
- Non-standard = deadweight cost
- Competitiveness
- “Fit for Survival”
- Promoting Cross-Border Capital Markets Flow



FIX Protocol – Where is it used?



FIX Networks – Connecting Korea to Global Capital Markets



FIX Order Routing Platform

- White Glove Client Service
- Fast On-boarding
- Reliability
- Flexibility
- Global – Regional – Domestic Reach

Thank You!