

ACI Russia

Global Trends in FX eCommerce

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Progress | Apama

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software

- Progress Software (NASDAQ: PRGS), \$500M+ Revenue
- Apama Complex Event Processing *Platform*
- Focus on Capital Markets, >100 deployments WW
 - Algorithmic Trading
 - Market Making & Pricing
 - Best Execution
 - Surveillance & Compliance
 - Risk Management



- Progress distributor in Russia
 - Located in Moscow and St. Petersburg
 - In-depth knowledge of Progress products
 - Support, professional services, training, development

Apama in Capital Markets: Clients and Use Cases

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Market Surveillance



Bond Pricing



Equity SOR



FX eCommerce



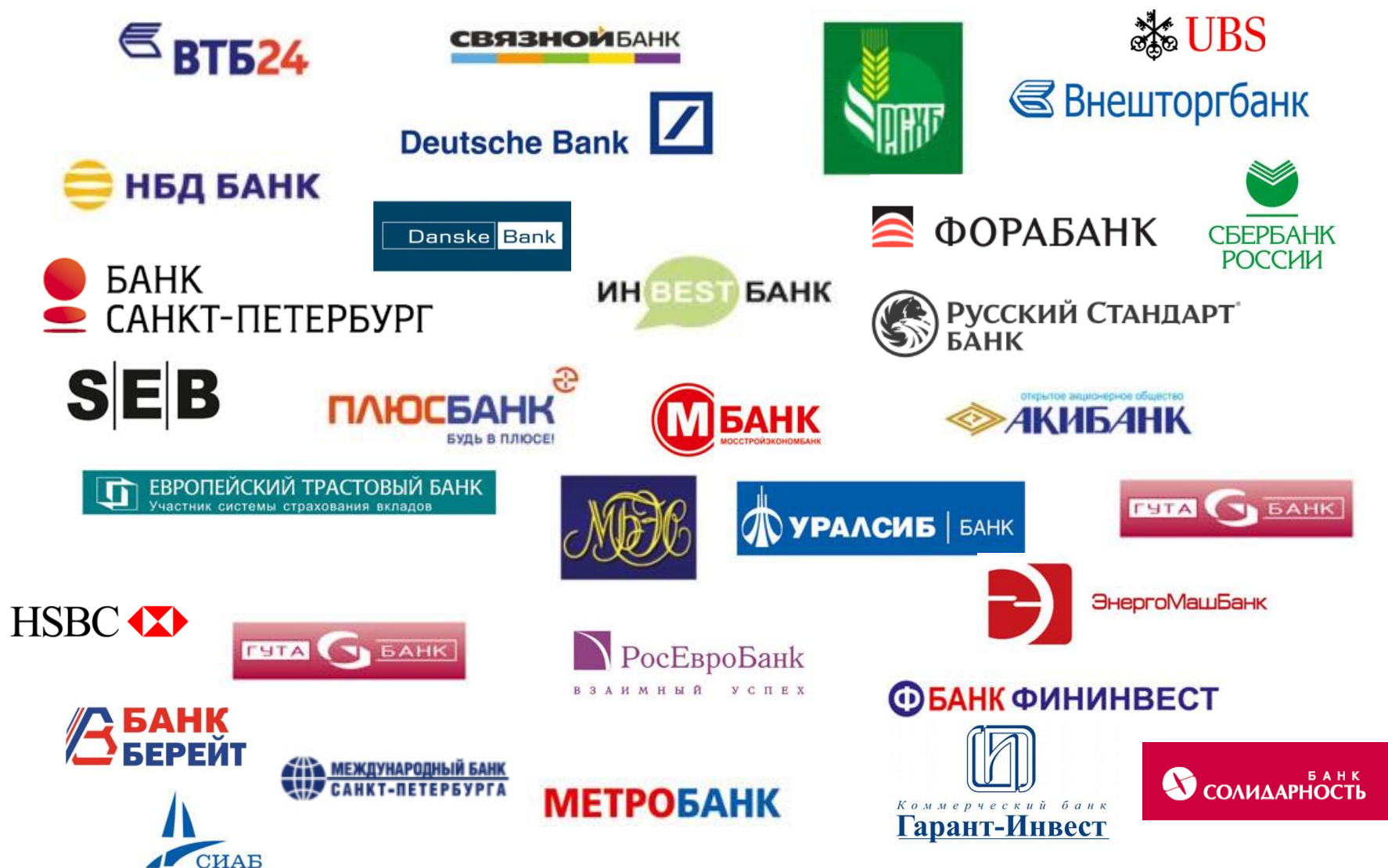
Algo Trading (Equities)



Progress Technologies

20+ Years in Russian in Financial Market

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■ Trading Trends in the Market

- Fragmentation
- Changing ECN Landscape
- Importance of Single Bank Platforms



■ Trends in FX Trading Technology

- Aggregation and eCommerce
- Current and Future Technology Trends

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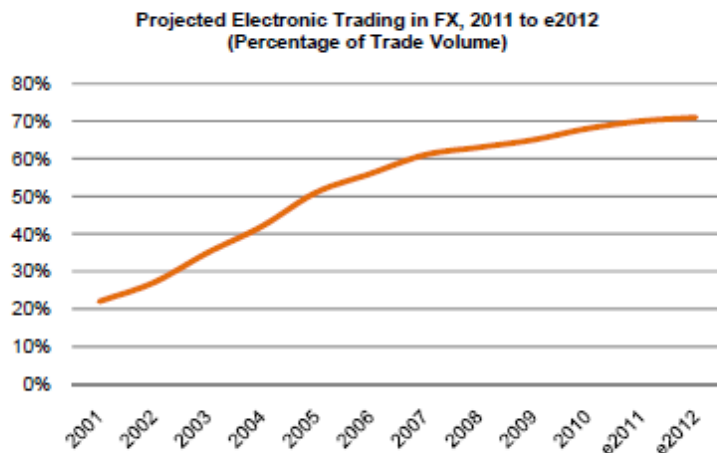
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Trading Trends in the FX Market

Electronic Trading

Projected Electronic Trading in FX



Source: Aite Group

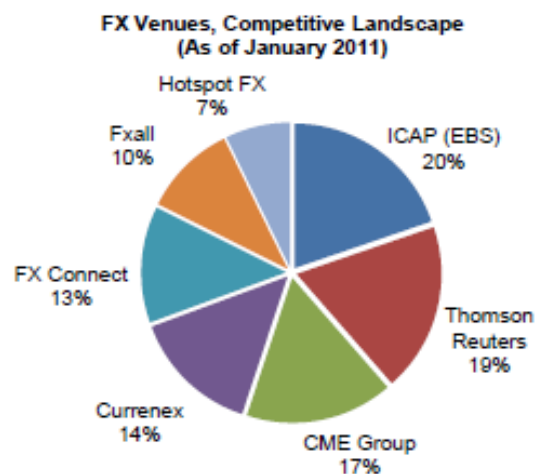
- Steady increase in FX electronic trading over the past decade
- 68-70% of the FX market is now electronic
- Approximately 29-40% results from High Frequency Trading

(Source: Aite)

- Characterized by:
 - Rapidly changing market trends
 - Nature of the market can vary by currency
 - Short lived trading opportunities
 - Very small profit margins, requires large turnover to be profitable

- Fragmentation is extensive in the market, and has only increased over the years (so far)

Market Fragmentation in the FX ECN Market



Source: ECNs, Aite Group

- Challenges of trading in a fragmented market:
 - Best Execution
 - Venue Selection
 - Multiple Trading Screens
 - Phantom Liquidity

Trading Trends in the FX Market

Fragmentation – Crossing Networks

- Initial methods of trading:
 - Interdealer brokers - Reuters and EBS
 - Direct bilateral trading with tier 1 banks
- Shift to multi-dealer crossing networks (ECN's)
- Recent changes:
 - New entrants to the market with new business models
 - Existing venues rethinking their business models
- Main theme – tailoring trading environments for specific classes of trading organizations
 - Bank vs Non-bank
 - Proprietary vs Agency
 - Institutional vs “Predatory” HFT



Trading Trends in the FX Market

Fragmentation – Single Bank Platforms

- Single Bank Platforms (SBP's) offer:

- Lower cost of execution by not charging account or brokerage fees
- Ability to negotiate 1 on 1 best prices
- Quote based rates with guaranteed time-to-live

HSBC 



BARX
THE TRADER'S BEST FRIEND

**Goldman
Sachs**

- SBP's profit through:

- Margin based client pricing
- Internalization for price improvement

autobahn[®]FX

 **UBS**

CREDIT SUISSE 

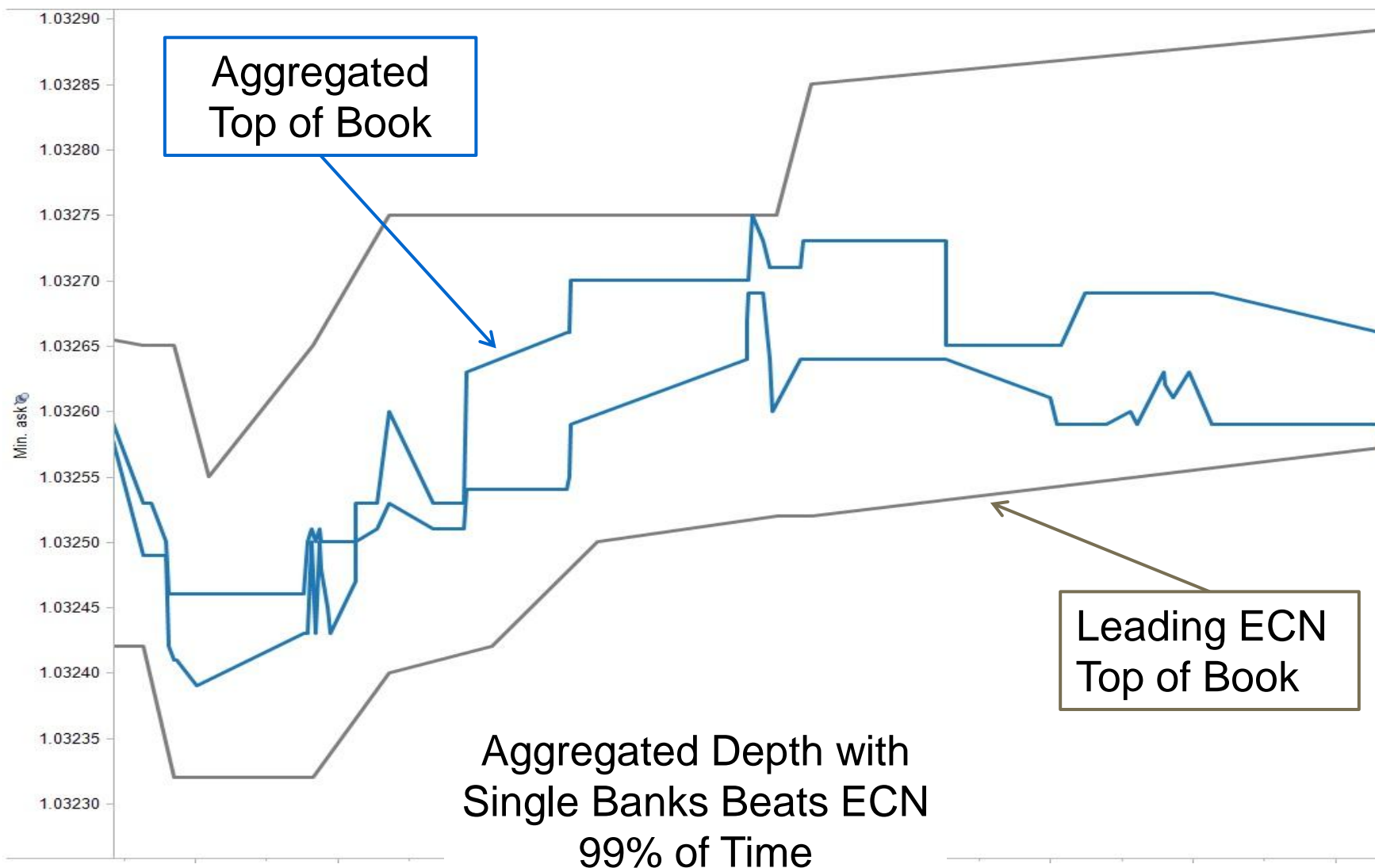
Bank of America 

- Recent changes:

- Specialized algo order types (e.g. Credit Suisse AES, Barclays PowerFill+)
- Support for FX derivatives (forwards, swaps, options, NDF's)

Trading Trends in the FX Market

Fragmentation – ECN's vs Single Bank Platforms



What does the future hold for FX trading venues?

Which of the new ECN models (and new ECN's!) will survive?

Will we start to see further venue consolidation?

Will the industry return to crossing networks in place of direct single bank trading?

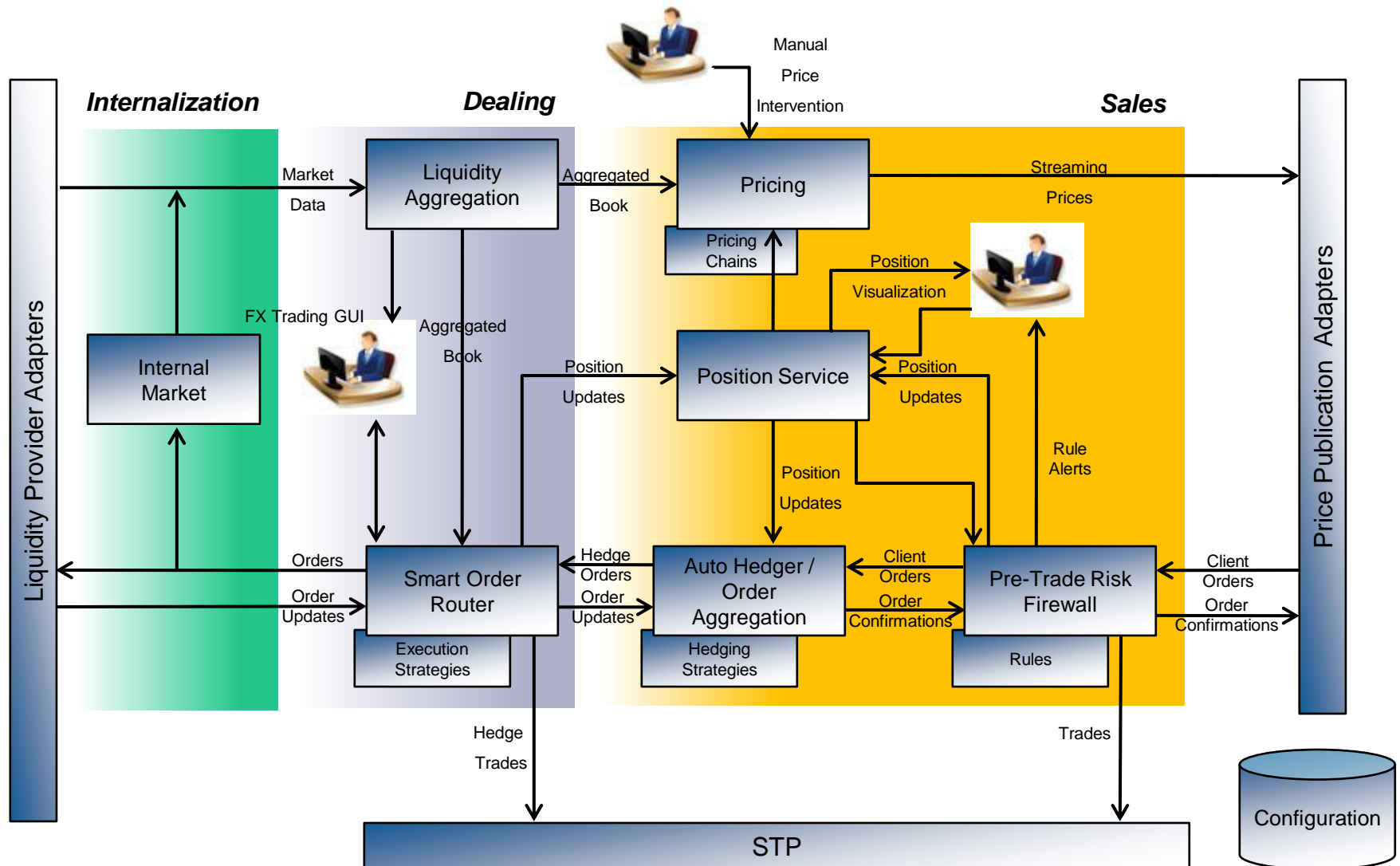
Will single bank platforms offer more advanced pricing models to compete with each other and the ECN's?



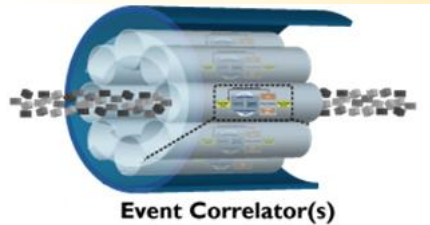
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Trends in FX Trading Technology

Aggregation and eCommerce – Key Components



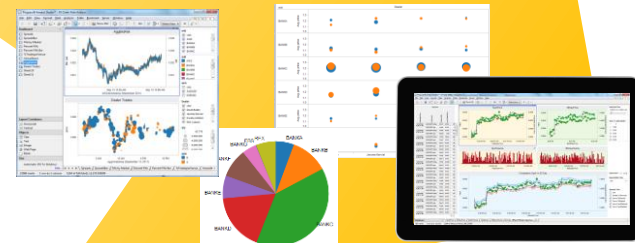
Real-Time Data Management (e.g. Complex Event Processing)



Data Storage



Historic and Real-Time Analytics



- The general framework for aggregation and smart order is becoming more commoditized.
- Increased demand across tier 1 and tier 2 institutions for eCommerce Pricing and Auto-Hedging systems.
- For small FX trading operations, a handful of black-box services are available.
- For larger operations (e.g. 2+ yards/day) acting as profit centers, a more powerful, customizable trading solution is required.
- Speed isn't everything - smarts can be just as important, if not more.



Trends in FX Trading Technology

Aggregation and eCommerce – Implementation Challenges

- Normalization Across Trading Venues
- Stale Rate Management
- Venue Order Rejection Tracking
- Order Execution Speed Bumps
- Price cleansing
- 3rd Party System Integration
- Multiple Global Deployments
- Risk Control

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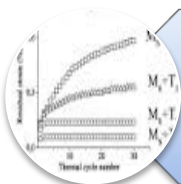


Trends in FX Trading Technology

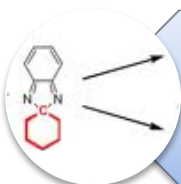
Current Technology Trends



Custom execution logic based on Single Bank Platform negotiations



Expanding beyond FX Spot to include derivatives: forwards, swaps, NDF's, options



Providing custom market making services using synthetic instruments



Internalization to reduce execution fees and market impact



Incorporating real-time and historic data into trade execution decisions (Transaction Cost Analysis, Risk, Credit Limits)

Trends in FX Trading Technology

Future Technology Trends

Aggregation technology
applied to other asset
classes

- Metals
- Fixed Income
- SEF Traded Derivatives

Regulation playing a
greater role WW

- Dodd-Frank, clearing and settlement of OTC Derivatives, Swap Execution Facilities
- FX Spot excluded, NDF's and Options includes, Forwards and Swaps still in question
- Planned regulations for spot market in Russia in 2013

Tier 2 and 3 institutions
using more in-house or
hosted technology

- Trading
- Risk Management
- Data Analysis

The FX market is complex and constantly evolving.

To survive and be successful you must leverage flexible, *customizable* trading platforms and toolkits.

Don't build from scratch!

Accelerate time to market by using pre-built components.

Don't be locked into vendor engineering roadmaps!

Use customizable solution architectures to stay current with market shifts.

Don't operate systems in isolation of each other!

Use open solution architectures that allow ease of integration with existing infrastructure and other best of breed systems.

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