UPDATE ON TRENDS AND INNOVATION ON E-TRADING VENUES

ECB BOND MARKET CONTACT GROUP

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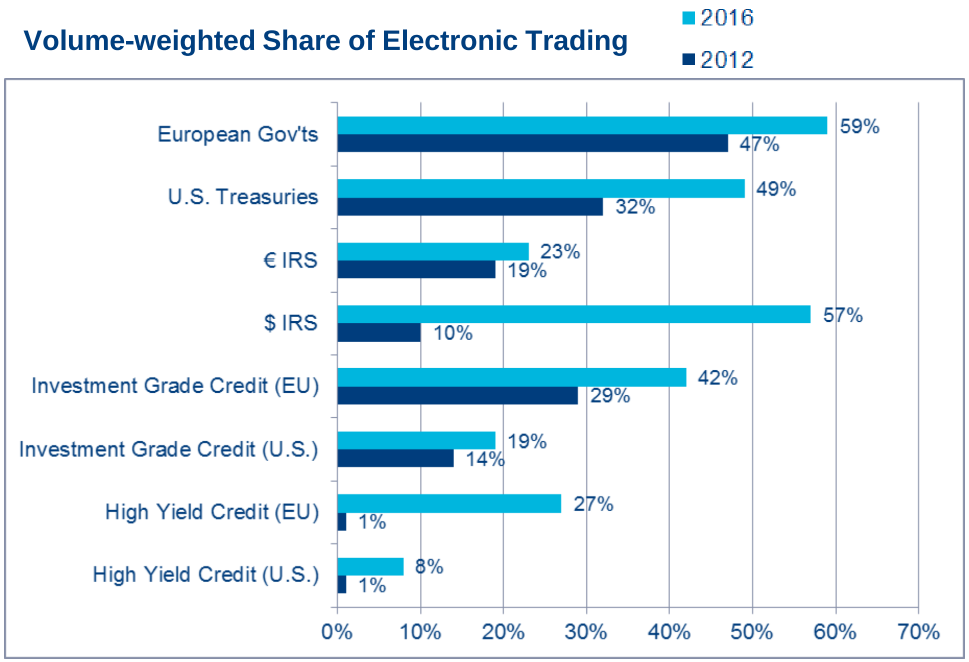
Current Status

Venues continue to evolve, offering a wider range of trading technology to provide access to liquidity and regulatory compliance. Recent focus of market participants is clearly:

- **Search for liquidity across markets**
- **Search for efficiency and streamlining trading workflow**
- **Readiness for regulatory change and compliance**



Source: Greenwich Associates' 2012 and 2016 North American Fixed Income Surveys and European Fixed Income Surveys

The range of trading protocols continues to expand. Not one size fits all

- Axes / Inventory
- Streaming prices
- RFQ
- Session based
- All to All
- Voice Supported
- Dark pool
- CLOB (Order Book)

Regulatory change has significant impact for market participants across the transaction chain

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PRE-TRADE
MiFID II / MiFIR

- Client categorisation
- Suitability and appropriateness
- Research unbundling

TRADING
MiFID II / MiFIR

- Public pre- and post-trade transparency
- Derivatives trading obligation
- Trading protocols
- Rules-based trading

POST-TRADE
EMIR / MiFID II / MiFIR / CSDR & MAR

- Clearing
- Settlement
- Regulatory reporting
- Portfolio reconciliation
- Monitoring and surveillance

POST-TRADE
MiFID II / MiFIR

- Execution quality reports
- TCA

Venues assisting Clients meet regulatory compliance

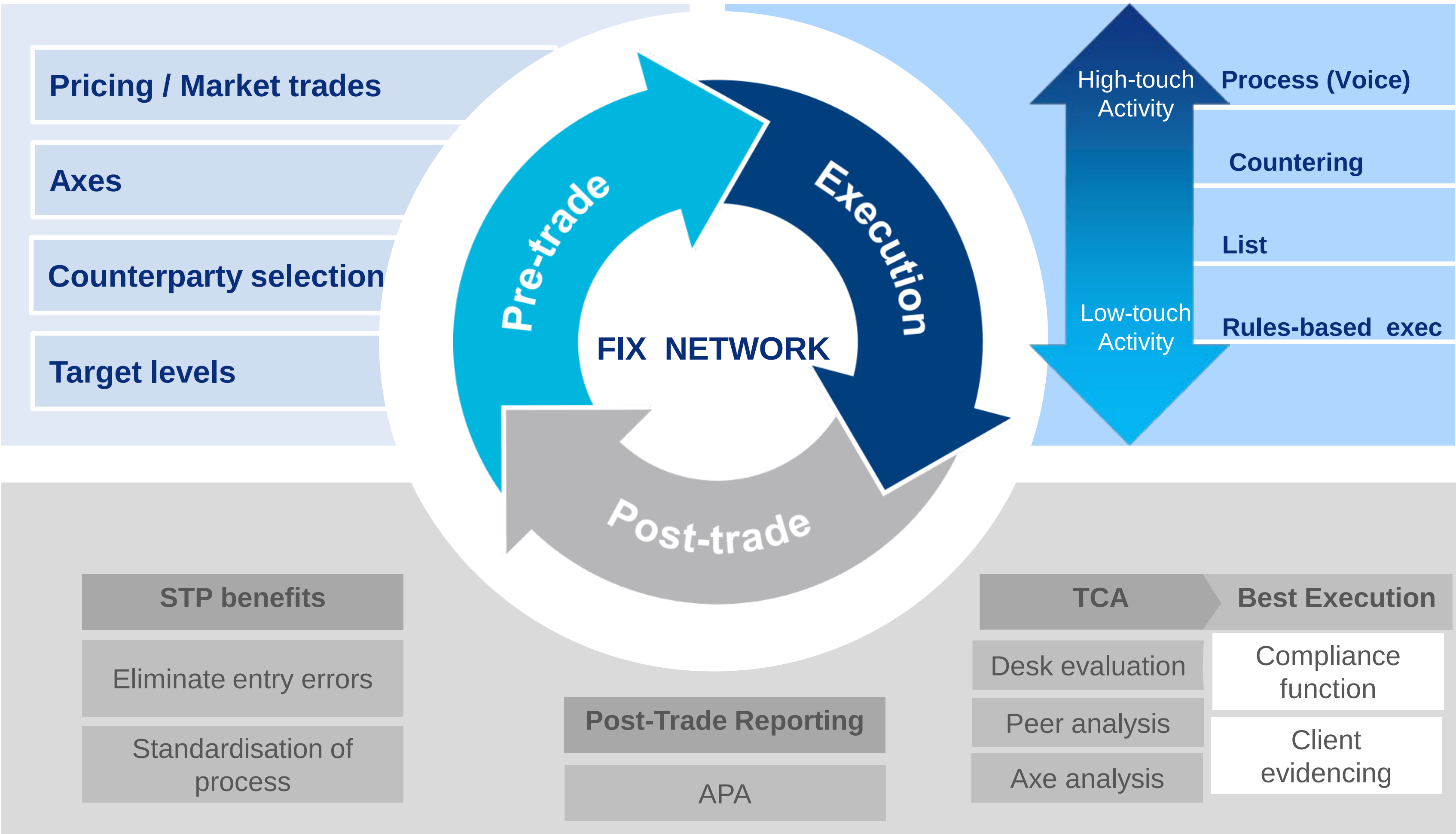
MiFID/ MiFIR/ MAR POLICY OBJECTIVES	VENUE RESPONSE
Transparency	Pre-post Trade Reporting
Market Abuse	Market Abuse Regulations, Order record keeping/ surveillance
Investor protection	• Execution Quality • Transaction cost analysis
Operational Efficiency/STP	Clearing Certainty / Submission of trades
Post Trade Reporting	APA (Approved Publication Arrangement)

Venues Building Efficient Markets

CLIENT FEEDBACK TO VENUES	RESPONSE
Bring Operational Efficiency	Connection to pre- and post-trade OMS / EMS Vendors across market sectors
Help Find Liquidity	• Axe information collection and display • Directing trades to points of liquidity. Feedback loop to prove price improvement
Trade Automation for Flow Business	Rules-based execution in some market sectors
Improve Data Analysis	TCA: Desk evaluation, Peer analysis, Axe analysis
Line Item Management for Cleared Derivatives	NPV Compression tool for executing offsetting trades, eliminating line items. Netting / removing this risk has traditionally been highly manual process
New Liquidity Providers	Depending on the market, ability for clients to source liquidity effectively and efficiently from new or specialist market makers (including all-to-all in some market sectors)

Resulting in Data Driven Execution

Leveraging data across the lifecycle of the trade, increasing efficiencies



Use of Data Science and Analytics will deliver greater intelligence to clients to better inform their trades

- Expanded use of Data Analytics and Machine Learning technologies to optimise and to find the other side of the trade and trade opportunities
- MiFID II data may amplify this trend in 2018
- Greater use of TCA for fixed income – insight into trading performance including Desk evaluation, Peer analysis, Axe analysis. Need to demonstrate best execution
- Focus on liquidity measurement and trade optimisation

Annex A. Additional regulatory-driven solutions provided by Venues

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Best execution

- Quarterly RTS 27 execution venue reports
- Additional information for annual RTS 28 reports
- Transaction Cost Analysis

Off-venue services

- APA for real-time reporting
- SI quote facility (Systematic Internaliser)
- Workflow solutions for processed trades

Pre-trade

- Data and analytics to support execution decisions

Annex B. RFQ (Request for Quote) trading protocol changes

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Making adjustments to ensure compliance with MiFIR transparency requirements.

1. Client launches **inquiry**

2. **Collection window** opens
   - Dealers send responses – only visible to and executable by client
   - **Once client actions the trade** and the quote is firm, the collection window closes and the trade execution process starts
   - Collection window **extends** in the case of a subject/indicative quote:
     - Hit/lift equals "firm up quote and execute at this price" or
     - Requester accepts a dealer re-quote

3. **Pre-trade** information
   - When collection window closes curtain lifts:
   - Only **firm** quotes (from all dealers in comp) are made public (unattributed)

4. **Trade execution**
   - Successful exchange of trade messages
   - Ensuring no loss of connectivity/heartbeat

5. **Post-trade**
   - Real-time report of instrument, size, price, time
   - Unattributed

1 LAUNCH RFQ

2 COLLECTION WINDOW

Only client sees responses. Cannot trade

Client decides when to action the trade

EXAMPLE OF A COMPLIANT TRADE EXECUTION

3 4 5 Closing window > Pre-trade > Trade execution > Post-trade

PRE-TRADE INFORMATION MADE PUBLIC			POST-TRADE
Liquid	< SSTI	Firm quotes	Real-time
	SSTI – LIS	Composite / simple average	Deferred T+2
	> LIS	N/A	Deferred T+2
Illiquid	Any size	N/A	Deferred T+2

Additional deferrals may be available including volume masking

Order record keeping and transaction reporting obligations

Order record keeping → Information required from all participants

Transaction reporting → Additional information required from non-MiFID firms

Information includes:

LEVELS	EXAMPLES
Company level	• LEI (Legal Entity Identifier) • MiFID status • Trading capacity
Individual level	• Investment decision within the firm • Execution within the firm

Annex D. Clock synchronisation

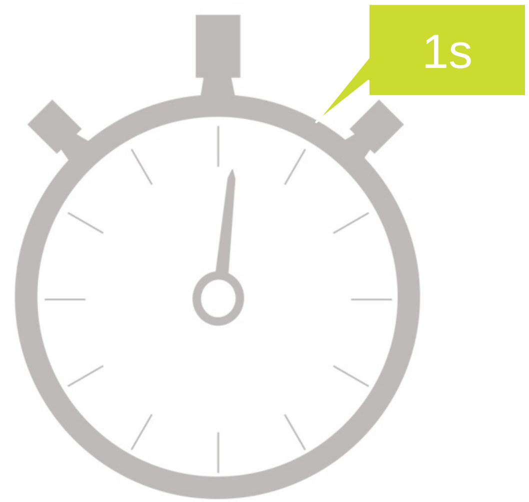
Clock synchronisation requirement

- MiFID II includes a requirement for venues and their members or participants to sync their business clocks to UTC (Coordinated Universal Time)
- Specified level of granularity and max divergence from UTC

VENUE

PARTICIPANTS

RFQ involving human intervention



Proposed Issues for Discussion

1. Are European wholesale banks doing enough?
2. Are Central Banks doing enough?
3. Can blockchain/distributed ledger work for bond settlement?
4. How does ECB avoid vertical structures & encourage competition? e.g. open sources?
5. How do regulators create a level playing between incumbent financial firms and disruptor/fintech firms?
6. Do you think that the Industry is prepared for MiFID II?
7. Have you seen an increase in specialisation among liquidity providers?
8. Will assets be traded differently in the next year and what risks to liquidity might this present?