

Sibos 2009

Globalization Experience Innovation Opportunity Technology Partnership



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Navigating Through the Evolving Trading Landscape

New Global Realities

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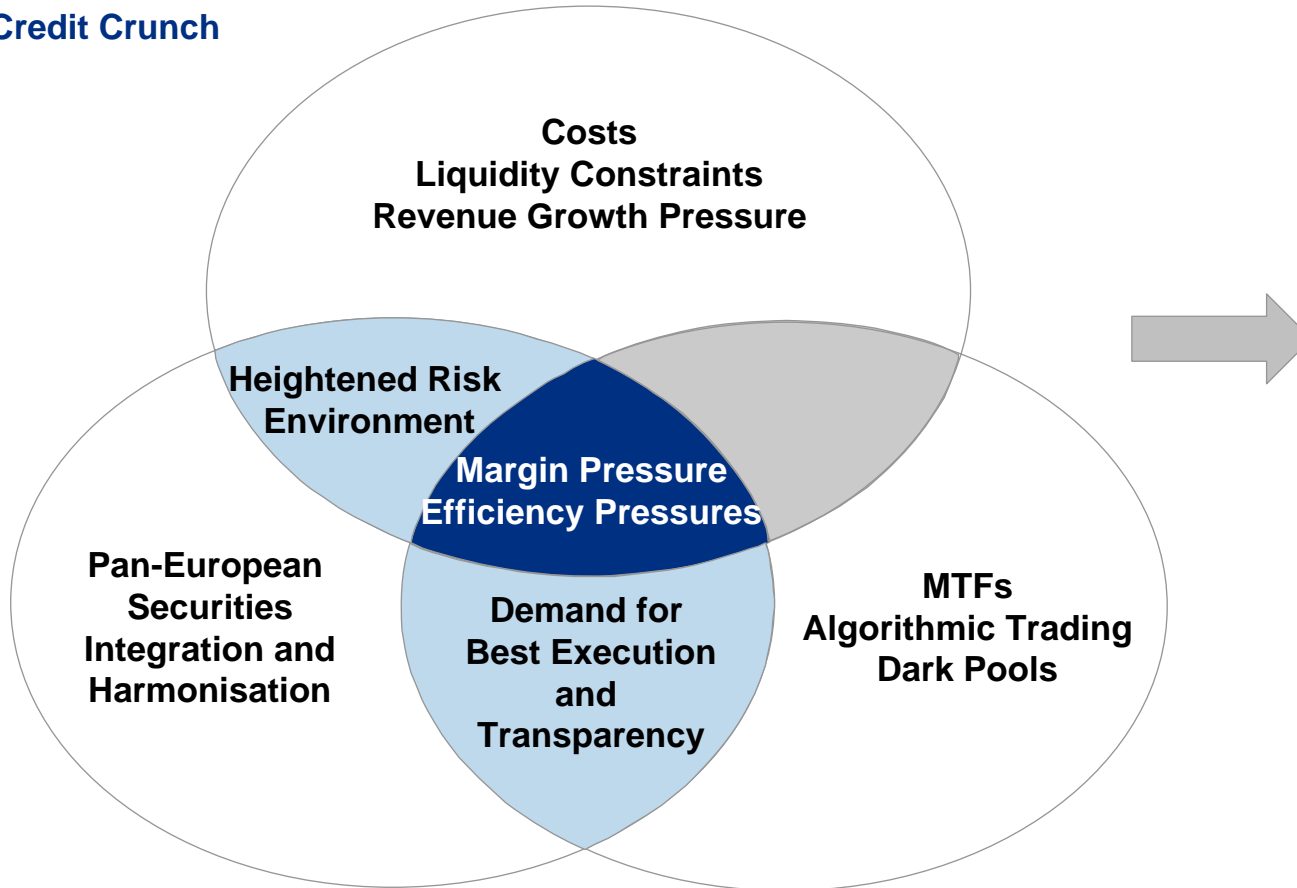
Head of Electronic
Markets

The EMEA Perspective

Impact on Securities Industry Landscape

The Securities Industry faces multiple challenges from a number of different sources over the next five years.

Credit Crunch



Trends

- Change in competitive landscape for exchanges
- Drive to create greater efficiencies and reduce costs through securities lifecycle
- Simultaneous harmonisation and fragmentation pressures

Regulation

Technology

Consequences

The trends in the securities landscape will have long-term consequences for different market members.

Overall Market

- Cash liquidity reduced
- Increase in securities trading volume
- Capital – costly
- Key focus on expenses
- Capital may flow back to equities in the next five years

Intermediaries

- Revenue and margin pressure
- Effects of increased regulatory requirements
- Significant cost of implementation
- In-sourcing execution for big players
- Emphasis on smart order routing

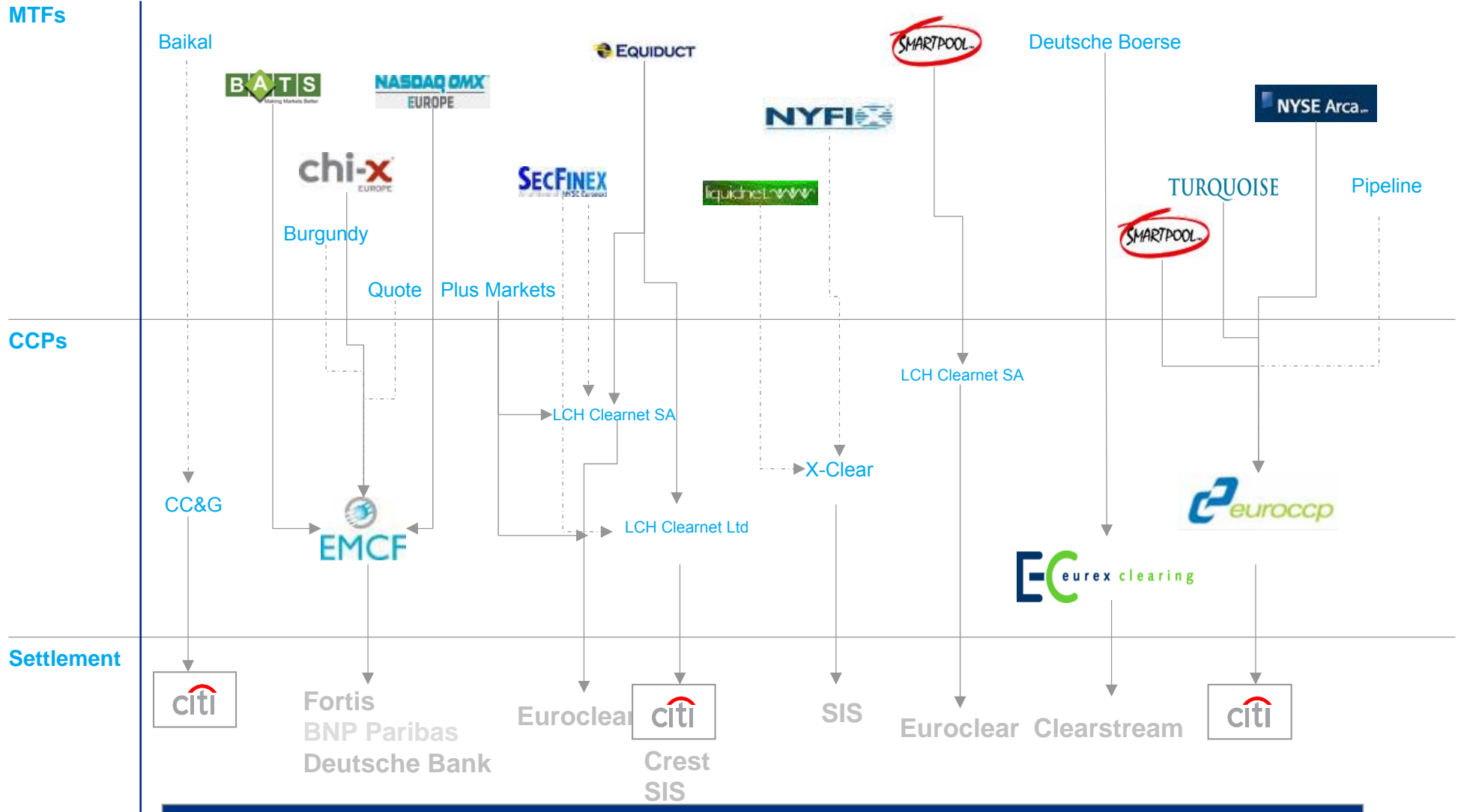
Buy Side

- Best execution obligation to clients
- Back to traditional investment strategies

Infrastructures

- Growth in execution venues – increased competition
- Liquidity fragmentation
- Innovative pricing and market segmentation models
- Linkages to dark and published liquidity pools

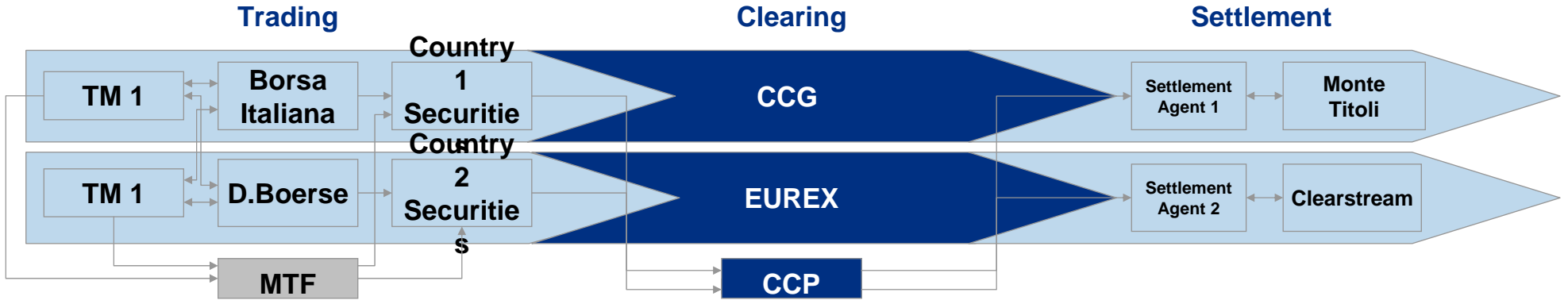
European Landscape – More to come....



The local - Central Securities Depository (CSD) - in Country

Shielding Trading Members from Post Trade Spaghetti

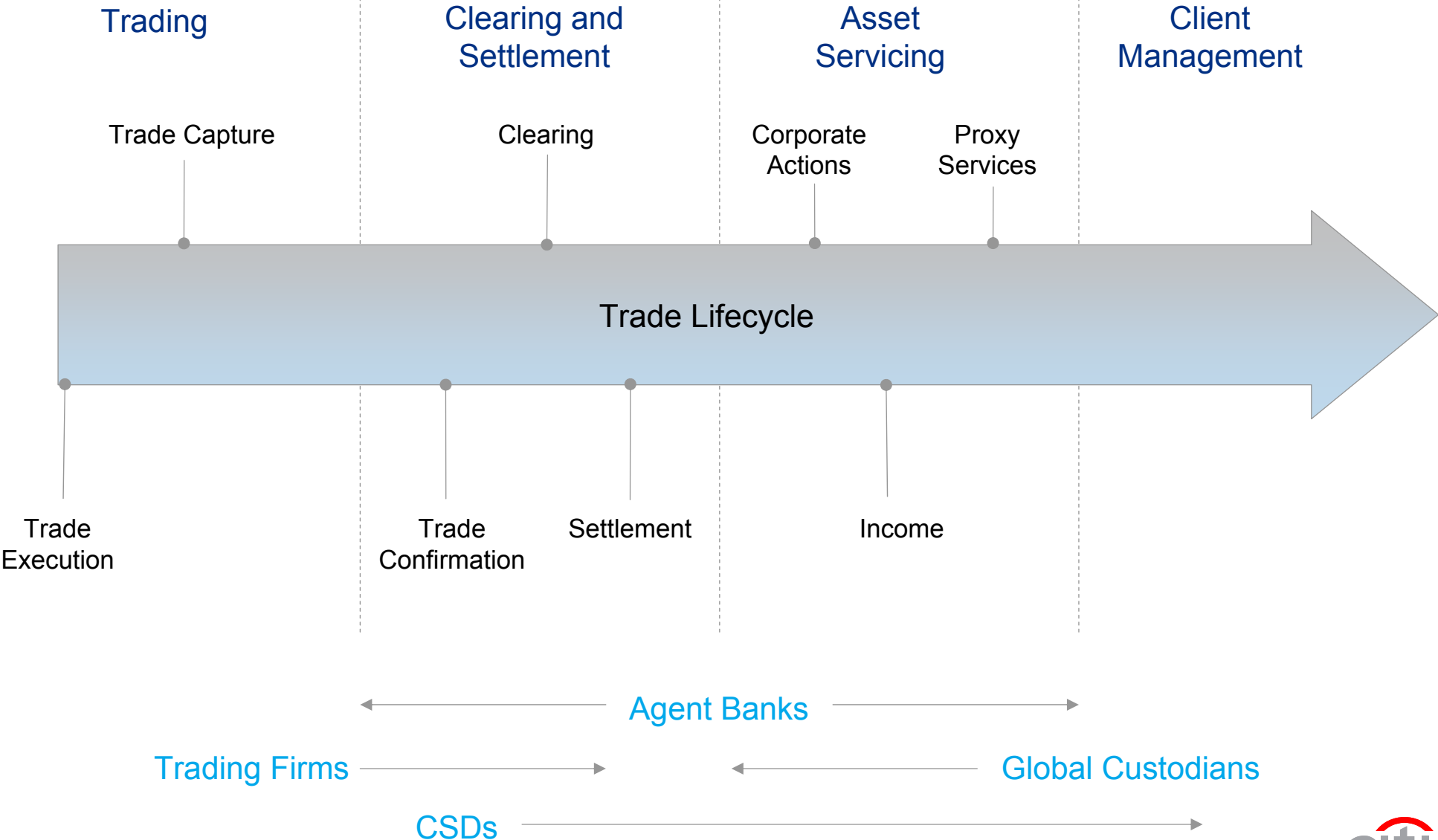
Today



Citi's "General Clearing Member" Service Model



Trading, Clearing and Settlement Lifecycle



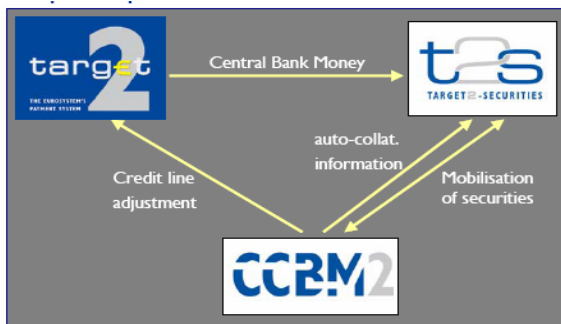
Market Developments and Initiatives in EMEA

Public sector and commercial initiatives that support the objective of the creation of a single European market for trading, clearing and settlement – efficient, harmonised and transparent.

European Central Bank's Target2-Securities (T2S)

- Projected live date June 2013; go-ahead decided in July 2008
- “TRIANGLE”: T2S - T2 (cash) - CCBM2 (collateral)
- All 16 Euro NCBs + 3 non-€ countries joining DK, SV, Lithuania
- 27 CSD signed MoU in July 09 – some non €-CSDs joining with €-settlement: CH, Iceland, Estonia, Latvia, Romania, Bulgaria
- Draft pricing 0,15 € cent per settlement transaction per side (0,10 € if +UK)
- Fee excludes matching & capped (for settlement: 70% T2S level and 30% CSD level + other CSD fees)
- CCBM2 purpose: low cost, efficient cross-border collateral

ECB's T2S - TARGET2 (cash) - CCBM2 (collateral)



Euroclear's Single Platform

- Covers seven markets (GB, IE, BE, FR, NL, FI, SV)
- Announcement on 1 April 09: “Modular Approach” consisting of
 - SP Multi-currency Central Bank Money
 - SP Collateral Management
 - SP Transaction Management
- These are **value-added services** designed to complement the core settlement activity ; target live date Q4 2011

Link Up Markets

- JV to create a single point of access for direct members to all 8 CSDs – (DE, GR, SP, AT, CH, DK, NO, CY)
- Link Up will absorb message variations between the 8 CSDs through router message converter with aim: x-border cost efficiency and to harmonise processes across the markets
- Service offerings to include
 - Settlement services (in central bank money)
 - Basic asset services (e.g. custody, corporate actions)
 - Liquidity Management Support (for cash and securities)
 - Reporting (regulatory reporting, market guides, documentation)

Citi's Solutions

European Multi-Market Access (EMMA)

- Single access to T2S platform and markets with full asset servicing and liquidity provision
- Expand to cover all T2S markets – currently in place across ESES markets
- Single operational hubs for settlements/ asset servicing

Unbundling of Pricing

- Transparency
- Flexibility
 - Settlement
 - Asset servicing
 - CSD fees
 - Liquidity

Asset Servicing Only

- Standalone asset servicing
 - Supports clients who adopt a direct connectivity model with T2S
 - Extends benefits of T2S connectivity with an asset servicing solution
 - Leverages Citi's in-market proximity to regulators, tax authorities and other participants

Outsourcing

- Expansion in to middle-office services
 - Shared service centre outsourcing
 - Infrastructure and technology outsourcing
 - Business process outsourcing

Whitelabelling

- Reporting and applications whitelabelling
- CitiDirect

The Asia Pacific Perspective

Timeline on Custody & Clearance

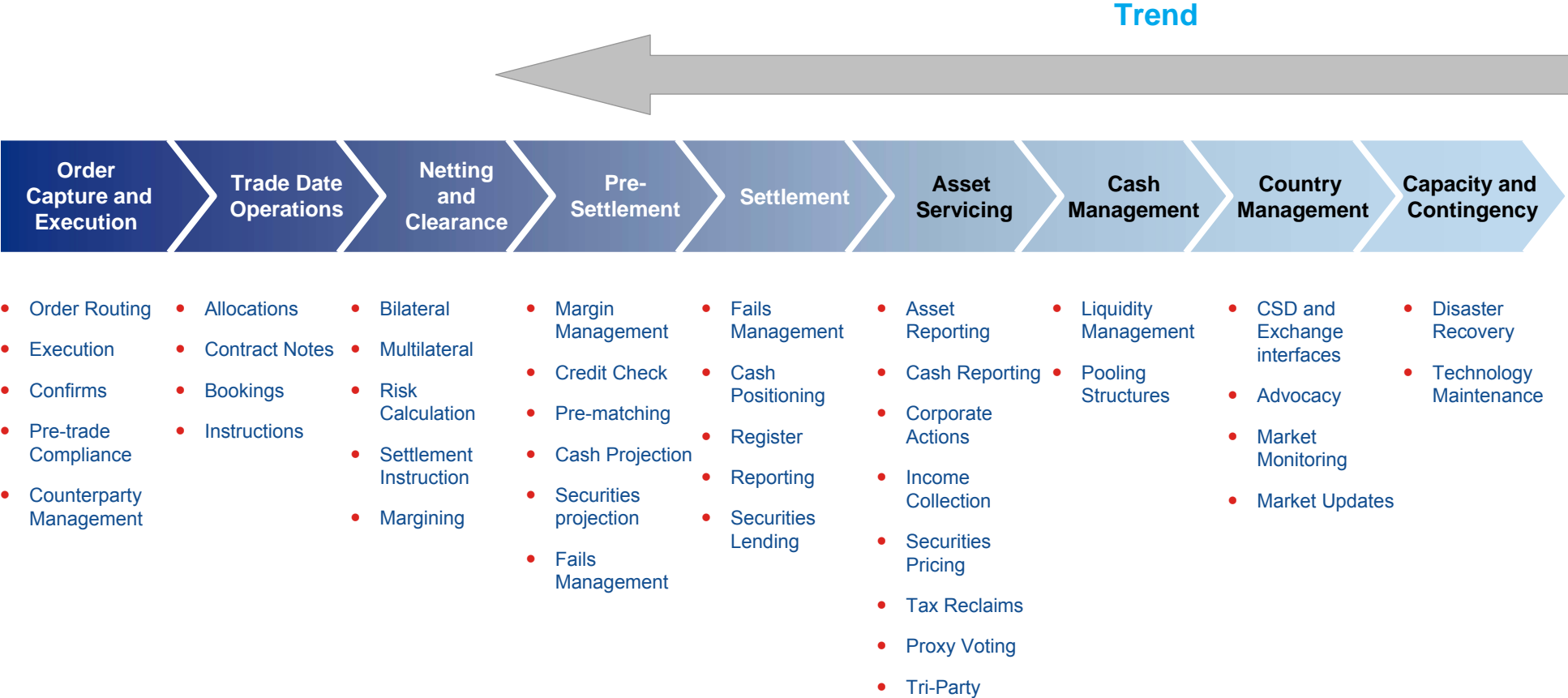
	1990–2002	2002–2006	2006–2009	2009+
Europe	<ul style="list-style-type: none"> • Single currency across most markets • Giovannini Barriers • Remote trading available • CCP's implemented for equities • Citi launches GCM services 	<ul style="list-style-type: none"> • Citi expands GCM services across Europe 	<ul style="list-style-type: none"> • Code of conduct • MiFID • Link-up markets • MTF's emerge • Credit crunch and focus on cost control 	<ul style="list-style-type: none"> • Target2Securities • MTF consolidation? • CCP consolidation? • CCP interoperability?
Asia	<ul style="list-style-type: none"> • Dematerialization • Asian financial crisis 	<ul style="list-style-type: none"> • CCP's implemented across Asia • Citi launches Account Operator Services in Asia • Remote trading introduced in Australia • Citi launches TPC in Australia 	<ul style="list-style-type: none"> • Regulatory changes facilitate TPC • Citi launches TPC in Hong Kong, Japan and Singapore • Credit crunch and focus on cost control and risk management 	<ul style="list-style-type: none"> • Expansion of remote trading? • Continued expansion of On Exchange services? • Relaxed regulations • Emergence of alternative CCP's?

Change in Asia


Asia is likely to see similar trends as to Europe but within a much different regulatory framework


Regulatory Differences	<ul style="list-style-type: none">• No advantage of a single currency regime• No MiFID type legislature to create opportunities• Markets more highly regulated and many have currency/FX controls
New Entrants	<ul style="list-style-type: none">• Algo traders bring higher volumes and smaller tickets• MTF's CCP's are looking to transfer European success to Asia• New entrants to Asia may look to partner with local institutions
New Technology	<ul style="list-style-type: none">• Smart order routing allows access to an expanding number of execution venues• Proven technology can bring reduced trading latency• Algorithmic/electronic trading can test existing infrastructure
Institutional Investors	<ul style="list-style-type: none">• Looking for faster execution and anonymity• Facing continued cost pressures and evaluating outsourcing• Require lower and more uniform execution and clearing costs within a stable infrastructure


Continued Service Expansion





Citi's On Exchange Servicing


 Thailand	Account Operator	2006
	Remote Trading	NA
	Third Party Clearing	NA

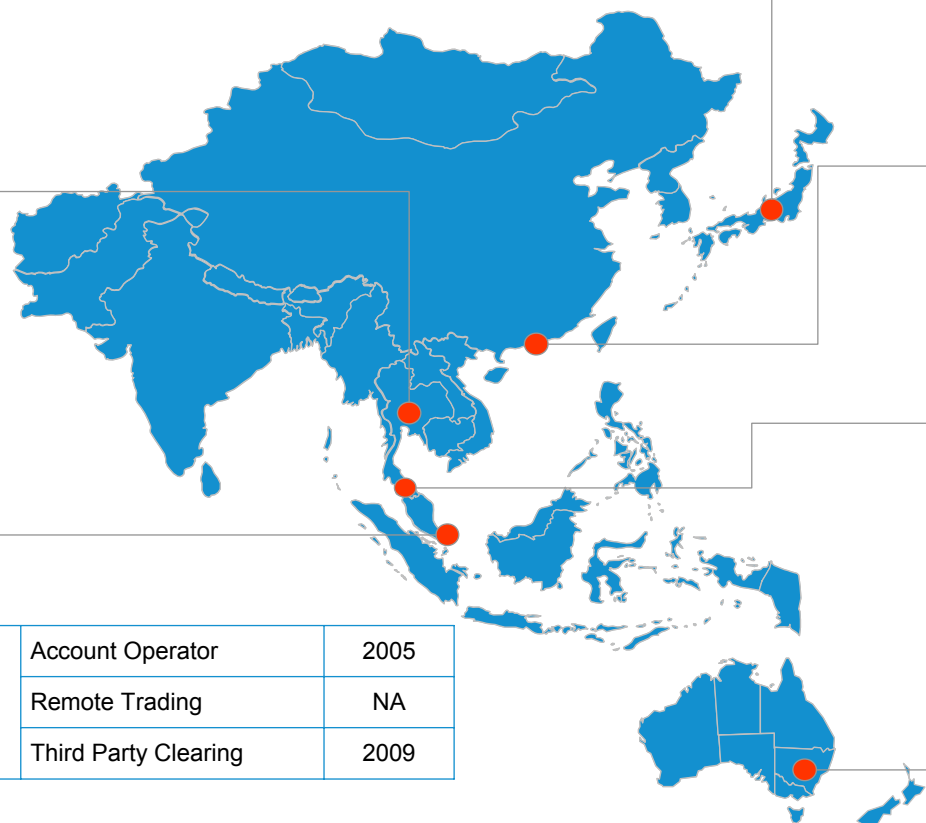
 Japan	Account Operator	NA
	Remote Trading	2010
	Third Party Clearing	2009

 Hong Kong	Account Operator	2004
	Remote Trading	NA
	Third Party Clearing	2009

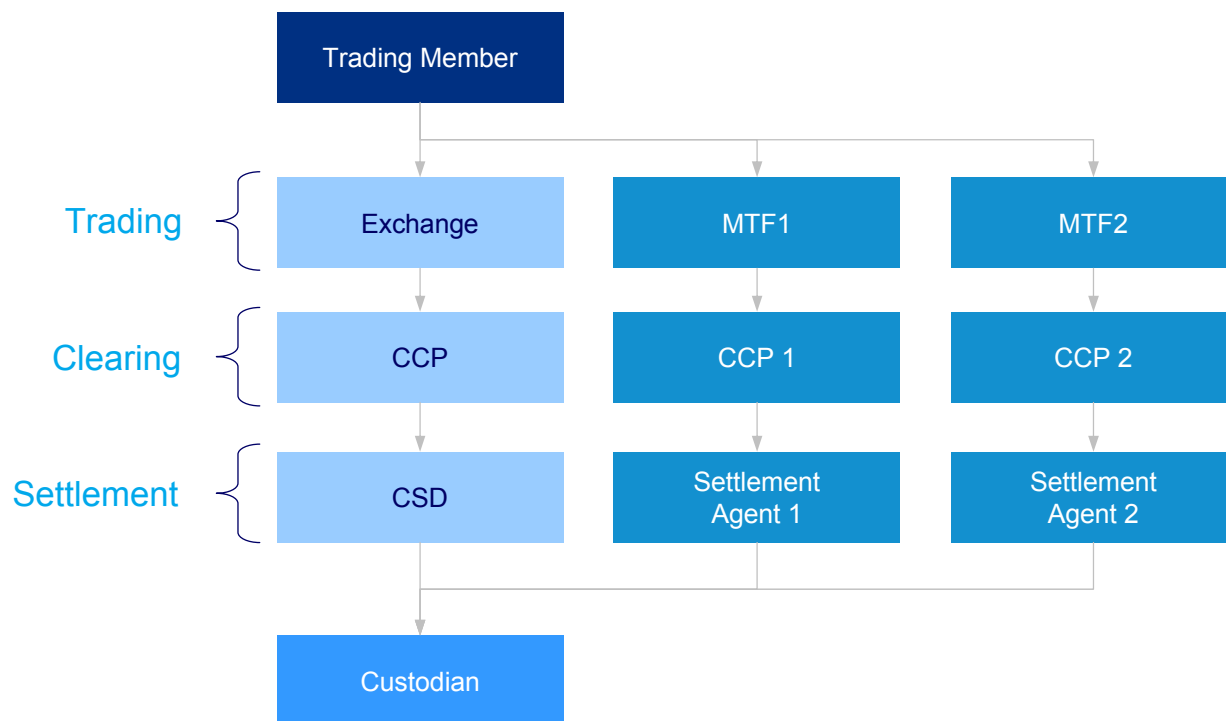
 Malaysia	Account Operator	2005
	Remote Trading	NA
	Third Party Clearing	NA

 Singapore	Account Operator	2005
	Remote Trading	NA
	Third Party Clearing	2009

 Australia	Account Operator	2010
	Remote Trading	2004
	Third Party Clearing	2004



Evolution of Exchange Clearing



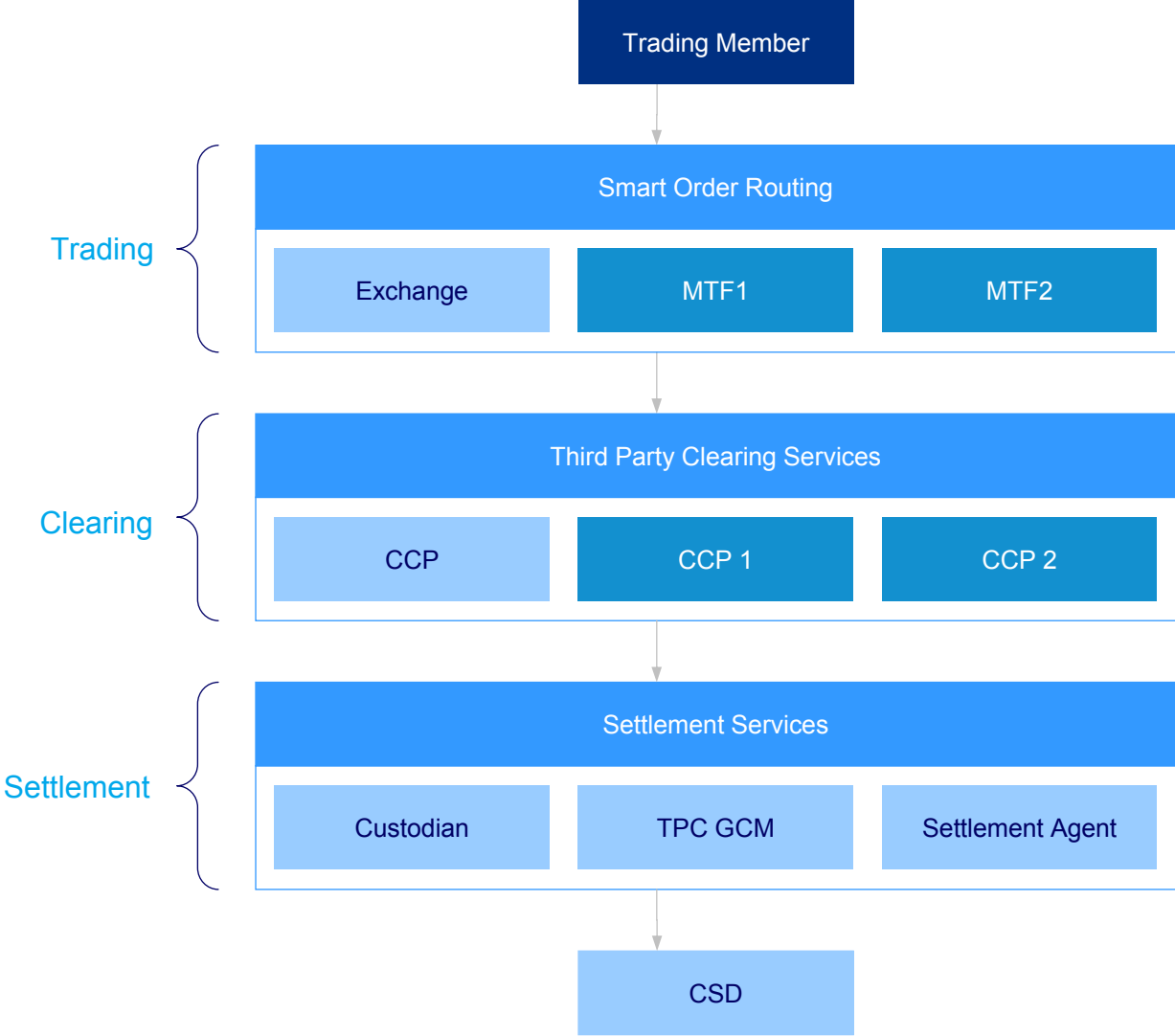
TODAY

- Vertical Integration
- Single market Exchange/CCP
- TM's are CM's
- Outsourcing attractive

TOMORROW

- Independent entrants into Exchange/CCP space
- Multi-market MTF's/CCP's
- Choices for best execution
- Increased infrastructure/ connectivity costs

Evolution of Exchange Clearing



TRADING

- SOR becomes increasingly important
- Single point into incumbent exchanges and new entrant MTF's

CLEARING

- TPC provides single point to clearing
- TM's insulated from changing infrastructure

SETTLEMENT

- Pan Asian network and links to CSD's optimal
- Efficiency in settlement, inventory control and asset servicing
- Additional efficiency when also serving as TPC GCM

Considerations

In looking forward—What are some key questions for the Region to consider?

- Should market regulations around remote trading and the outsourcing of clearing be reviewed in order to foster an efficient post trade environment?
- How can Asia create an environment that welcomes technology and innovators in the absence of MiFID type legislature?
- How does Asia avoid having varying settlement rules across multiple CCP's which offset the benefits of competitive clearing?
- How can Asia foster interoperability between CCP's early in the cycle in order to create an optimal post trade environment as the number of MTF's increases?
- If an MTF or Exchange has a financial interest in a CCP, is the CCP likely to attract, or be open to, other MTF's?
- Europe has experienced some fragmentation in the post trade environment due to a growing number of MTF's and new entrants in the CCP space. What can Asia do to minimize fragmentation?

The Innovation Perspective

Equities Market Challenges for Broker/Dealers

As the execution landscape changes and develops, market participants will face significant challenges.

Recent Market Trends

- Increasing number of trading venues
- Fragmentation of liquidity
- EU: MiFID 2007 / US: ECNs 1998 and Reg NMS 2007
- Increasing trading volumes (e.g. algo trading), reduction in trading sizes
- Migration of high-touch trading flow to electronic trading
- Decreasing trading commissions, increasing settlement costs
- Growing trends to invest cross-border / region

Broker/Dealer Impact

- Monopolies by exchanges are broken
- Increased competition, reduced cost of execution
- Greater choice available

Positive impact

- Need for highly efficient smart order routing
- Increased number of venue connections required
- Increased cost of managing and maintaining connections
- Expected increase in settlement cost from multiple venues
- Opportunity cost of investment here vs. other areas
- Disparate features of, and interfaces to, each venue

Negative Impact

Summary of Broker/Dealer Challenges

Added difficulty of maintaining connections to the growing number of venues required to ensure best execution

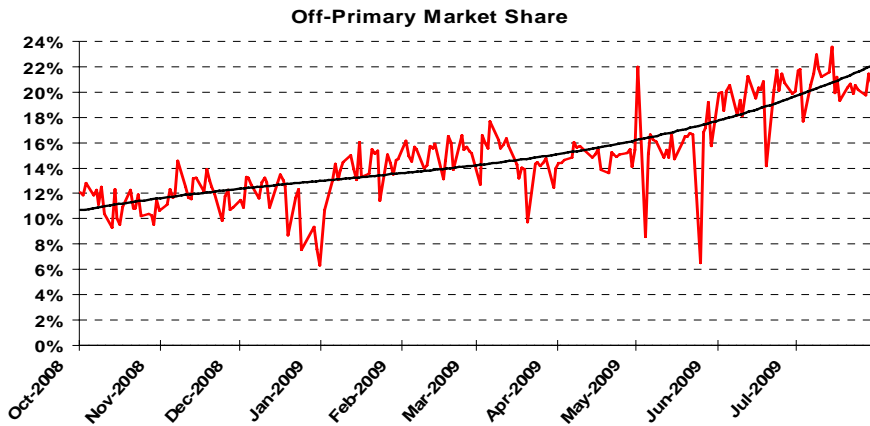
versus

Minimising transaction costs

Electronic Execution

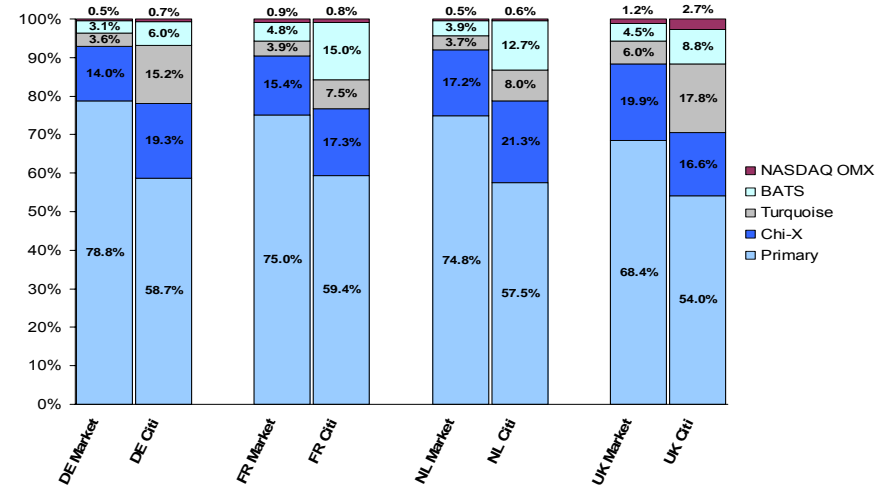
Market leading trading solutions that fully integrate with our clients' execution platform of choice. Smart order routing that optimally sources liquidity across a fragmented market.

Market Share of Alternative Venues in Europe



Source: Reuters, Citi, July 2009

Citi's SOR Trades by Venue as Compared to Overall Market



Source: Reuters, Citi, July 2009

Client Demands

- To achieve Best Execution in a trading landscape with fragmented liquidity
- Efficient access to the maximum number of trading hubs

Key Features

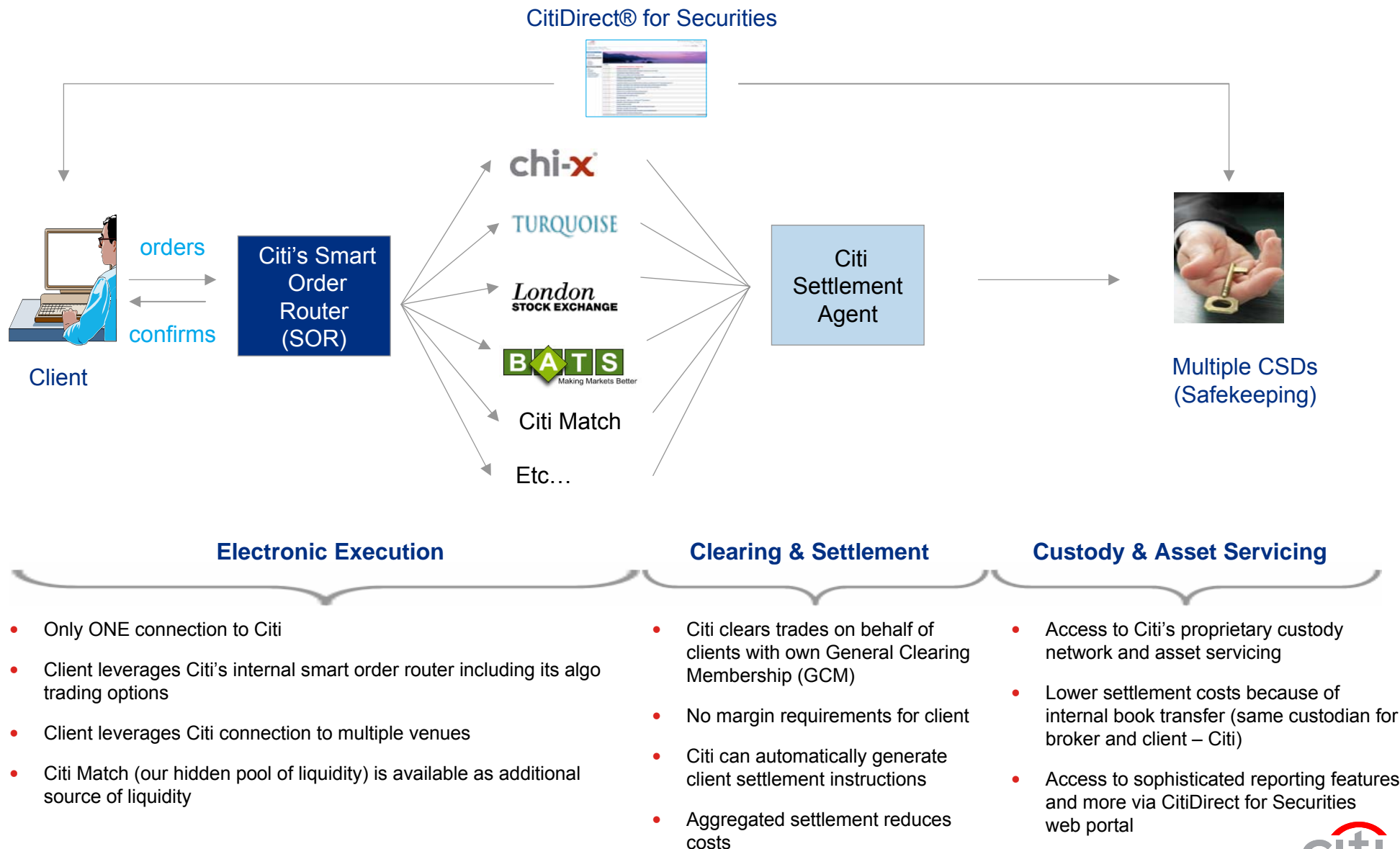
- Citi Match
- Smart Order Routing (SOR) Technology
- Algorithms
- Direct Market Access (DMA)

Benefits

- ▲ SOR technology recognised as a market leader in the US for its trading technology and intelligent order routing capabilities for nearly 10 years
- ▲ Citi will strategically access liquidity at alternative venues away from the Primary Exchanges to achieve best execution
- ▲ Full understanding of local market nuances
- ▲ Ability to access both displayed and hidden liquidity
- ▲ Fast and reliable access with price improvement opportunities



Citi® Execution to Custody – Consolidated Solution

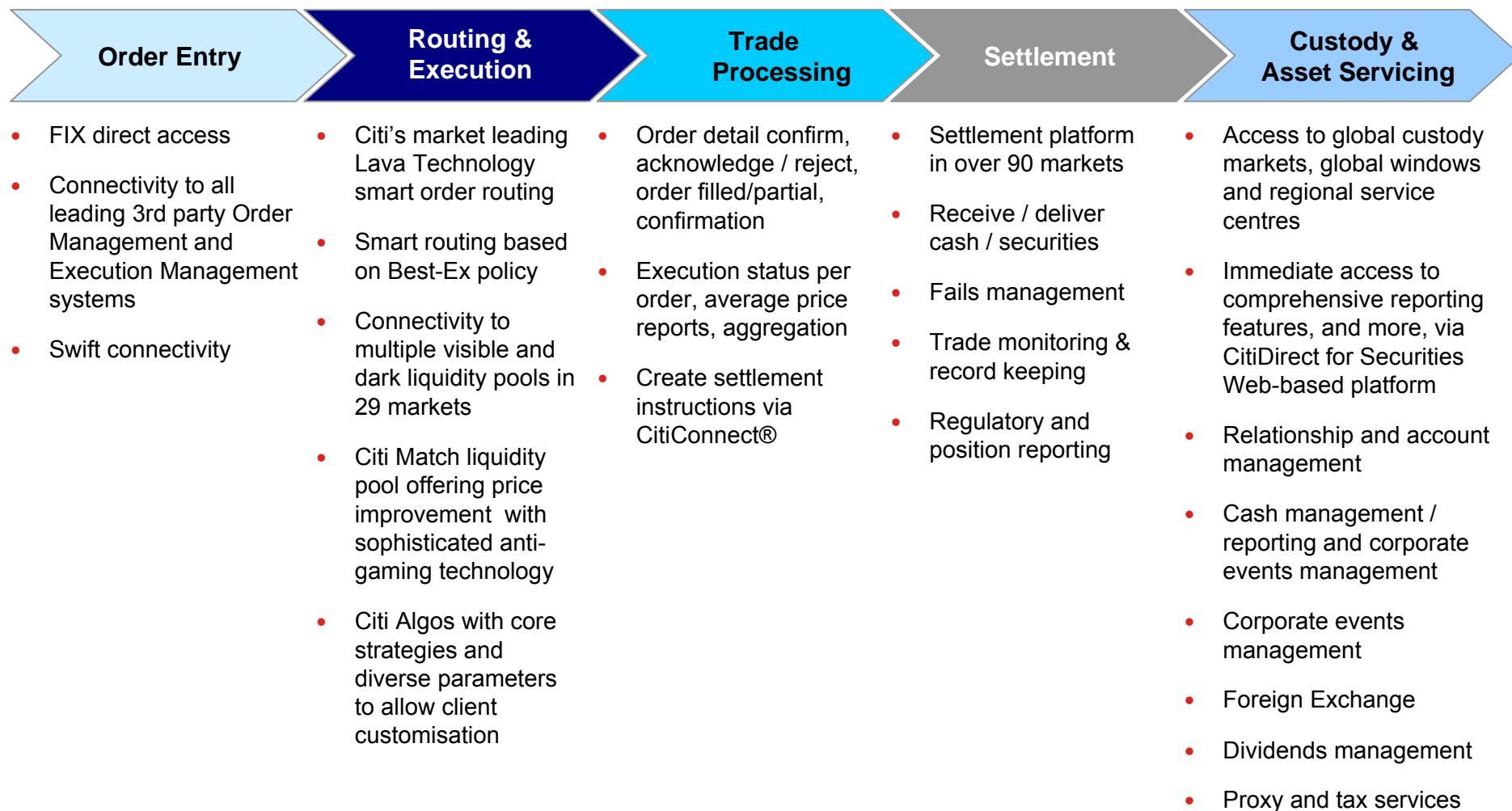


- Only ONE connection to Citi
- Client leverages Citi's internal smart order router including its algo trading options
- Client leverages Citi connection to multiple venues
- Citi Match (our hidden pool of liquidity) is available as additional source of liquidity

- Citi clears trades on behalf of clients with own General Clearing Membership (GCM)
- No margin requirements for client
- Citi can automatically generate client settlement instructions
- Aggregated settlement reduces costs

- Access to Citi's proprietary custody network and asset servicing
- Lower settlement costs because of internal book transfer (same custodian for broker and client – Citi)
- Access to sophisticated reporting features and more via CitiDirect for Securities web portal

Summary of Citi® Execution to Custody Combined Solution Service Offering



Value of Citi® Execution to Custody for Infrastructures and Broker/Dealers

Infrastructure

- Must adhere to MiFID requirement to search for best execution across competing venues
- Minimize large technology investment costs to connect to multiple venues per market
- Avoid membership costs by leveraging Citi General Clearing Membership for CCPs the venue is not a member at
- Provides an opportunity for venues to act as a concentrator of international orders from their members by sending trades back through Citi CGM Smart Order Router and to achieve best execution cross border

By lowering basis point charges per execution and gaining greater price improvement on the security, investors will achieve best execution and the venue will gain an additional revenue stream

Broker/Dealers

- Avoid cost of direct connection to multiple venues per market
- Utilize Citi's best in class Smart Order Router to ensure regulatory compliance and achieve Best Execution
- Citi can clear market trades on behalf of clients with our own General Clearing Membership
- Citi CGM broker is responsible for CCP margin, eliminating inefficient capital allocation for the broker/dealer
- Citi GTS can automatically generates settlement instructions on the client's behalf
- Significantly reduce costs by aggregating settlement for trades filled at multiple venues

Enables Broker/Dealers to access liquidity from the growing number of venues to achieve best execution while minimizing transaction costs

Case Studies

• Erste Bank's Challenge

- Vienna-based bank with 214 billion Euros in assets as of July 2008
- Looking to do cross-border retail equities trading in the U.S. market
- Fragmented liquidity in U.S. – upwards of 50 different trading venues (including MTFs and Dark pools)
- Introduction of strict regulatory requirements – MiFID & Reg NMS (2007) require best execution
- They needed a provider who can support a consolidated Equities package with multiple retail order types.
- Provider must be able to connect with Reuters FIX farm

• Value to Erste Bank

- Citi achieves best execution in a fragmented market by recognizing and taking better prices, and as a result executes a larger percentage of trades away from the more costly primary exchanges
- Erste avoided a huge technology investment to create and maintain connections to all the different market venues available
- Efficiencies achieved by increasing STP rates via automated settlement

• Middle Eastern Financial Institution's Challenge

- Middle Eastern FI's International Brokerage unit needs a partner to provide global coverage for cross border outflow business to Western European, U.S. and Asian markets
- FI needs to establish access to fragmented liquidity while maintaining compliance with regulations such as MiFID and RegNMS
- Need a provider who can support a consolidated Equities package with multiple retail order types
- Must have the capability to support other securities such as Options, ETFs and Futures
- Quick implementation with an experienced provider
- Provider must be able to connect via a single FIX feed through their connectivity vendor, Reuters

• Value to the Middle Eastern Financial Institution

- Citi achieves best execution in a fragmented market by recognizing and taking better prices
- The FI avoided a huge technology investment to create and maintain connections to all the different market venues available and eliminated the need for multiple GCMs.
- No margin requirement for the multiple CCPs
- Efficiencies achieved by increasing STP rates via automated settlement
- Citi Global Markets is able to accommodate Fixed Income and Futures business in addition to cash equities
- The FI has access to market leading asset servicing and post trade services

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In January 2007, Citi released a Climate Change Position Statement, the first US financial institution to do so. As a sustainability leader in the financial sector, Citi has taken concrete steps to address this important issue of climate change by: (a) targeting \$50 billion over 10 years to address global climate change: includes significant increases in investment and financing of alternative energy, clean technology, and other carbon-emission reduction activities; (b) committing to reduce GHG emissions of all Citi owned and leased properties around the world by 10% by 2011; (c) purchasing more than 52,000 MWh of green (carbon neutral) power for our operations in 2006; (d) creating Sustainable Development Investments (SDI) that makes private equity investments in renewable energy and clean technologies; (e) providing lending and investing services to clients for renewable energy development and projects; (f) producing equity research related to climate issues that helps to inform investors on risks and opportunities associated with the issue; and (g) engaging with a broad range of stakeholders on the issue of climate change to help advance understanding and solutions.

Citi works with its clients in greenhouse gas intensive industries to evaluate emerging risks from climate change and, where appropriate, to mitigate those risks.

efficiency, renewable energy & mitigation

