Re-engineering capital market business models to use different technologies

Brian Taylor, Managing Director

BTA Consulting – Global Client References

UK

Allied Irish Bank
ABN Amro Hoare Govett
Athens Stock Exchange
Bank of Ireland
Bank of Nova Scotia
Barclays Bank
BT Syntegra
Chi-Tech Europe
Cinnober
Computershare
CSC
CS Rand
Deutsche Bank
Department for Constitutional Affairs
(Court Funds Office)
Dresdner Kleinwort Benson
EBRD
Ernst & Young
Finsbury Asset Management
First Mercantile Plc
HSBC Bank
Investors Notice Board
JP Morgan
Jeffries International
Kleinwort Benson Securities
Lexit Financial
Liffe
London Metal Exchange
London Precious Metals Clearing Ltd
Logica Plc
Merrill Lynch
Official Solicitor & Public Trustee
Perot Systems
Percival Software
PLUS Markets Group plc
S2 International
SWIFT
The MBA Training Company
TCAM Systems
Terrapinn
Trayport
UBS Services Limited
Wales Stock Exchange

Asia

Bombay Stock Exchange
Colombo Stock Exchange/ Central Bank of Sri Lanka and SEC
CDS (India) Limited
Computershare
Karachi Stock Exchange
National Bank of Georgia/Georgia Stock Exchange / CDS
OTC Exchange of India
Rubber Authority of Singapore
Stock Exchange of Thailand
Stock Holding Corporation
of India
Tandem Singapore

Americas and Caribbean

Alberta Market Solutions
Bahamas International Securities Exchange
BVRD Dominican Republic
Cable & Wireless Cayman
Cayman Automated Payments System
Cayman Commodities & Derivatives Exchange
Compaq Tandem & Mexico
E*Trade
EFA Software
John Hancock
Mercato Aviento Electronic Argentina
Mexico Stock Exchange
Price Waterhouse Argentina
Price Waterhouse Washington
Price Waterhouse Coopers Bahamas
TCAM Stratus
Vista Consulting

Middle East & Africa

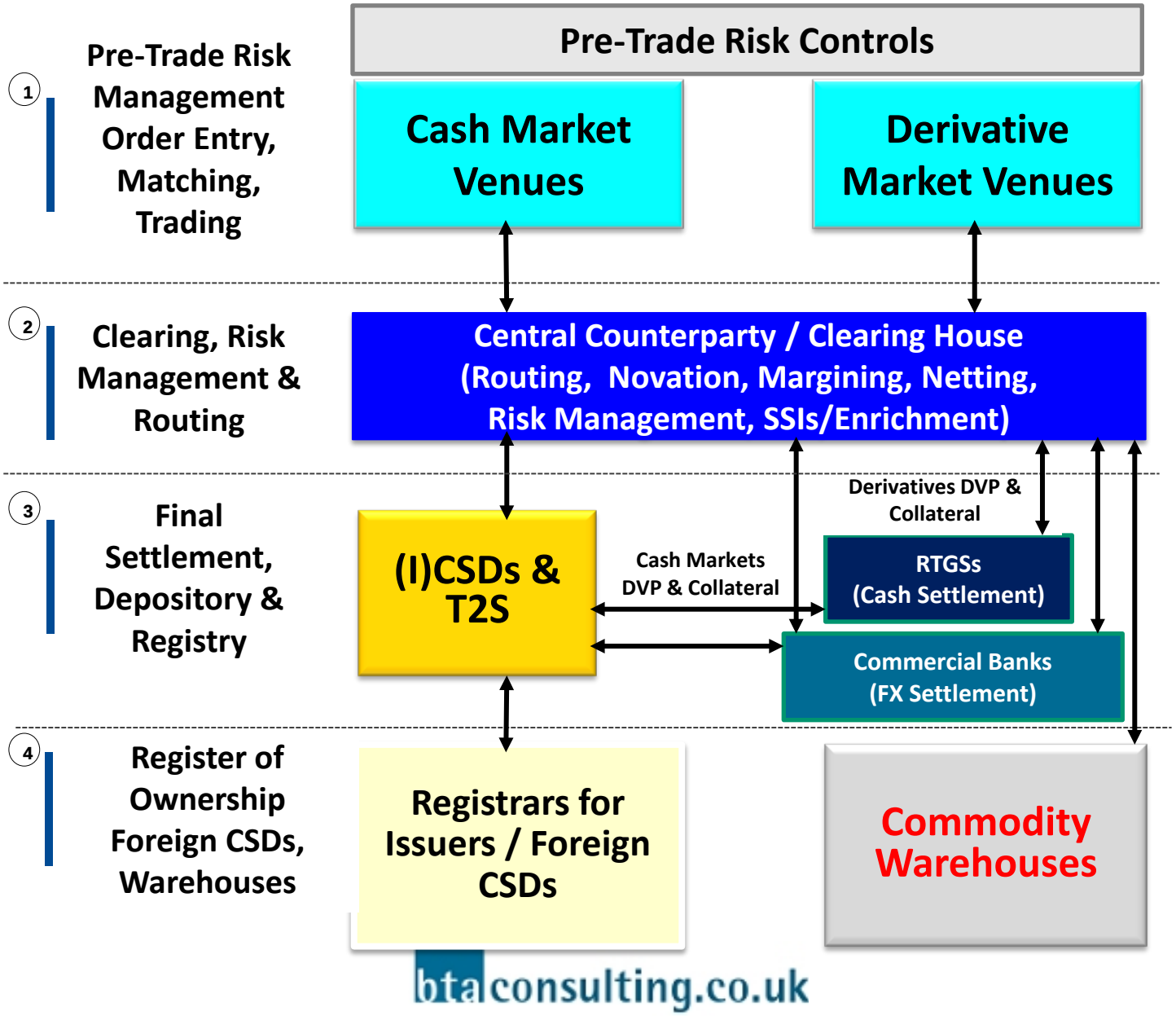
6 FEMIP country markets
Abu Dhabi SE
Al Khaldiya, Kuwait
Batelco BSC
Bank of Tanzania
Bahrain Stock Exchange
British Council Kenya
CMSA Tanzania
Capital Markets Authority
Government of Kenya
Dar-es-Salaam SE
Doha Securities Market
Ghana Stock Exchange
Gulf Business Machines
Kuwait Clearing Corporation
Nigeria Stock Exchange
OAU
Tadawul
Qatar Financial Markets Authority

Europe

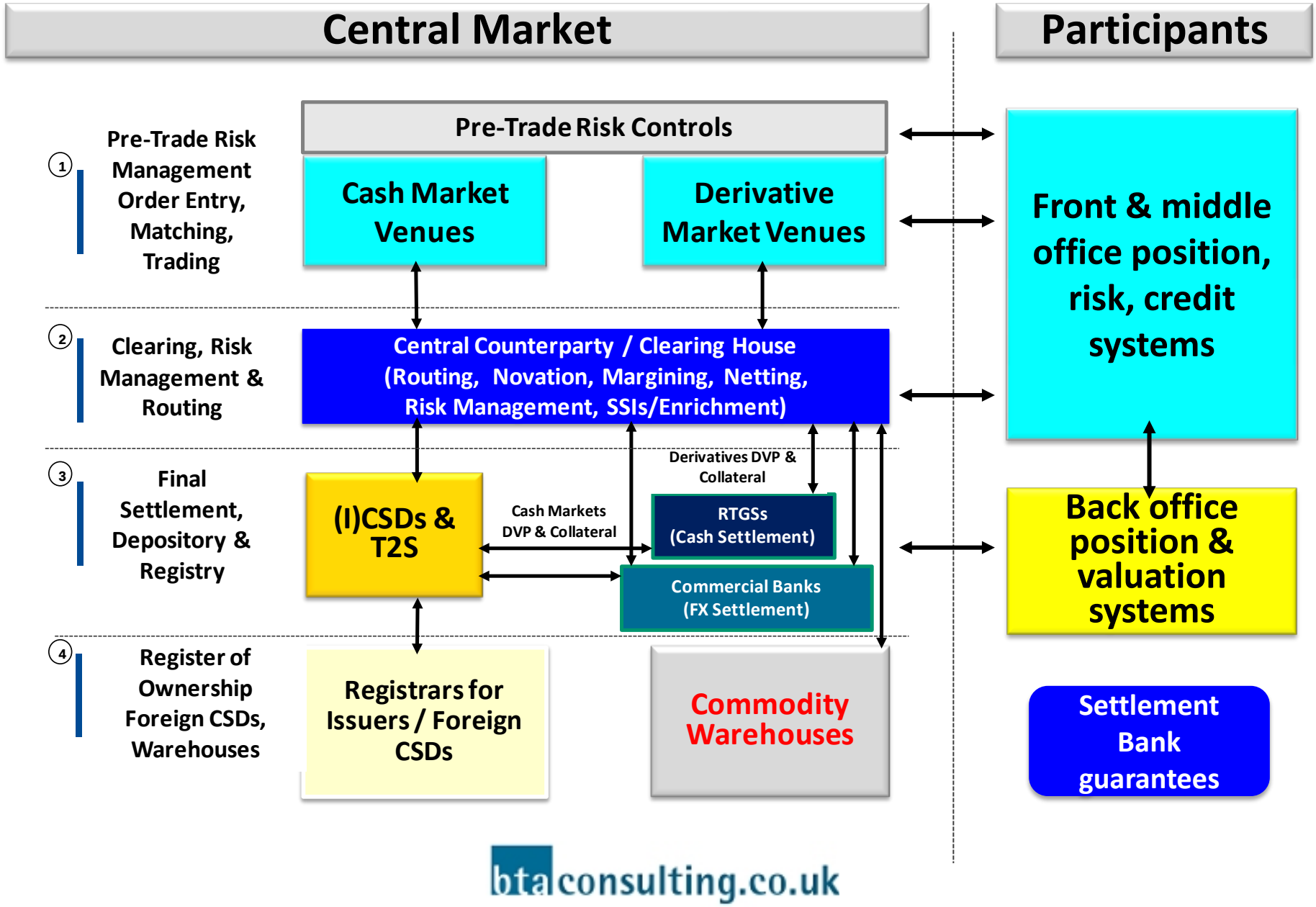
Alpha Bank Greece
Broker Systems Greece
Budapest Stock Exchange
Cedborsa Spa
CMA Small Systems
Compaq Milan
Cyprus Stock Exchange
National Audit Office, Cyprus
European Bankers Association – STEP 2
European Efficient Markets Association
Estonia CSD
Euroclear
European Investment Bank
Finannzmarket in Mittel-und Osteuropa
Gibraltar Stock Exchange
HP
Icelandic Securities Exchange
Interxion BV
KDPW Poland
Keler / Fornax Hunggary
KSI BV
List S.p.A
Lithuania Exchange
Malta Stock Exchange
Ministry of Finance Czech Republic
Ministry of Finance Slovak Republic
NASDAQ OMX
NSSMC Ukraine & EBRD
National Bank of Romania
OM, OM Jiway
Optiver N.V./ Binckbank N.V.
Oslo Bors
Perm Securities Market
Rabobank
RMS Czech Republic
RMS Slovak Republic
SIA spa
Split Art S. A
SWX Europe/Virt-x
TOM N.V
UBS Switzerland
Verdipapirsentralen ASA (VPS)
VBM Iceland
Warsaw Stock Exchange

Current Market Structure

Current Exchange Traded Market Structure



Participant Integration



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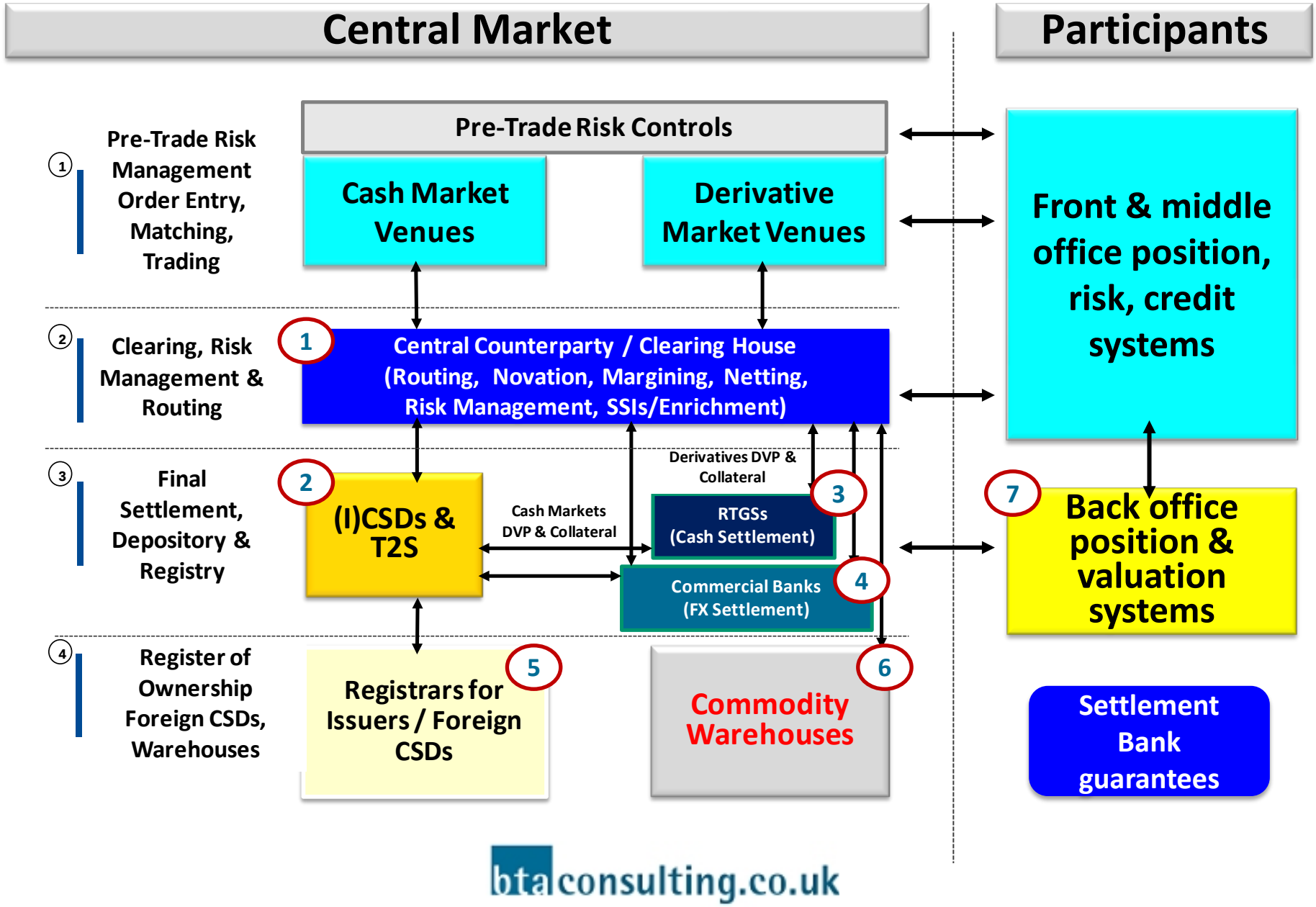
Where is final legal title held?



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The Challenges

Challenges

KEY RISKS

1. Final Legal Title & Securities Settlement

Held at the (I)CSDs, Central Bank, CCPs, Participant Records

Delay between trading and settlement adds credit risk & reduces liquidity

No consolidated future dated risk ladder (where contingency is assessed)

2. Cash Settlement

Recorded in RTGS on settlement date with no pre-settlement transparency

Risk „mitigated“ by bank guarantees

FX recorded in clearing banks creates intra day counterparty risk

„Just in time“ cash

RTGS Queue Management Risks especially for third country CCPs

Cash exposure leaves investors with replacement cost risk

No future dated risk ladder

Challenges

KEY RISKS

3 Credit Risk

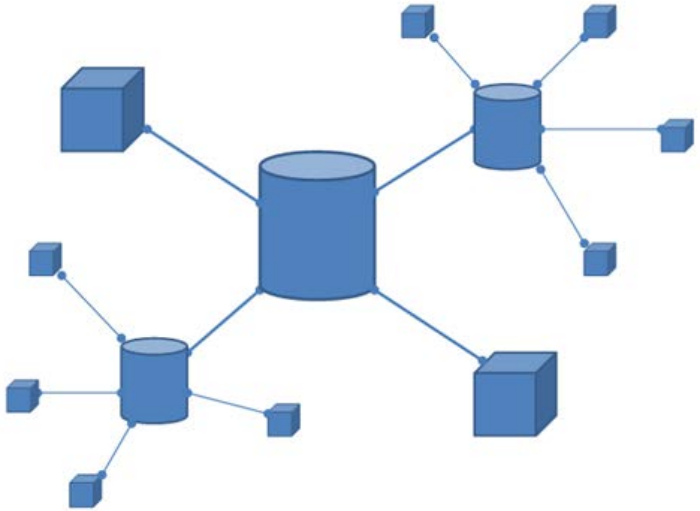
- CCP and Clearing Members required to act as principal
- Risk concentration
- Participants required to deposit collateral with high opportunity costs and low returns
- Market assumes stress tests & risk management will prevent meltdowns
- No guarantees or insolvency protection on OTC uncleared positions (unsecured creditors)

4 Trading

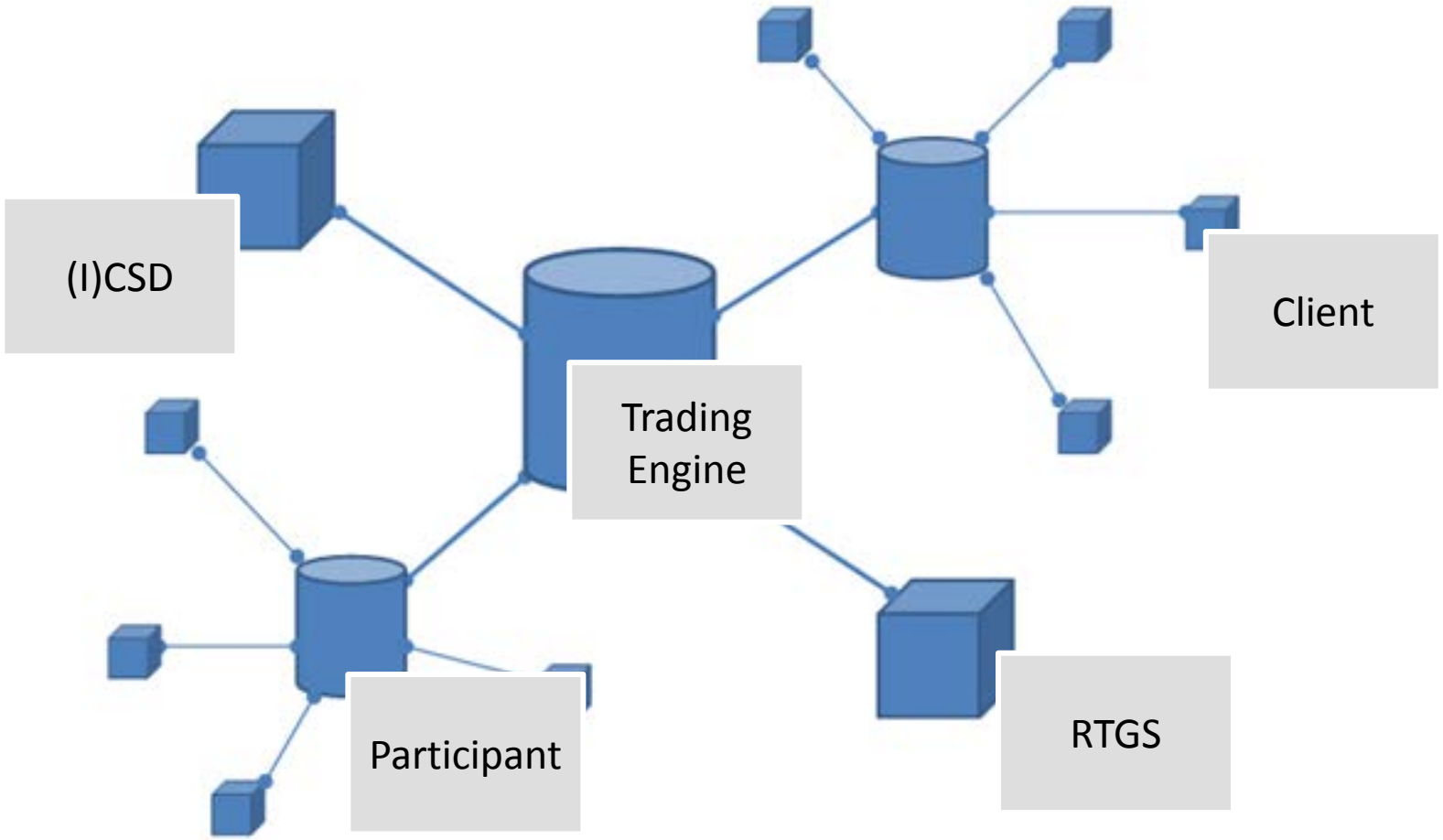
- Built for speed & leverage not for credit risk certainty
- Aim to create liquidity multipliers of positions including positions that do not exist
- Requires low latency (but how low)

What is required?

A financial stability approach



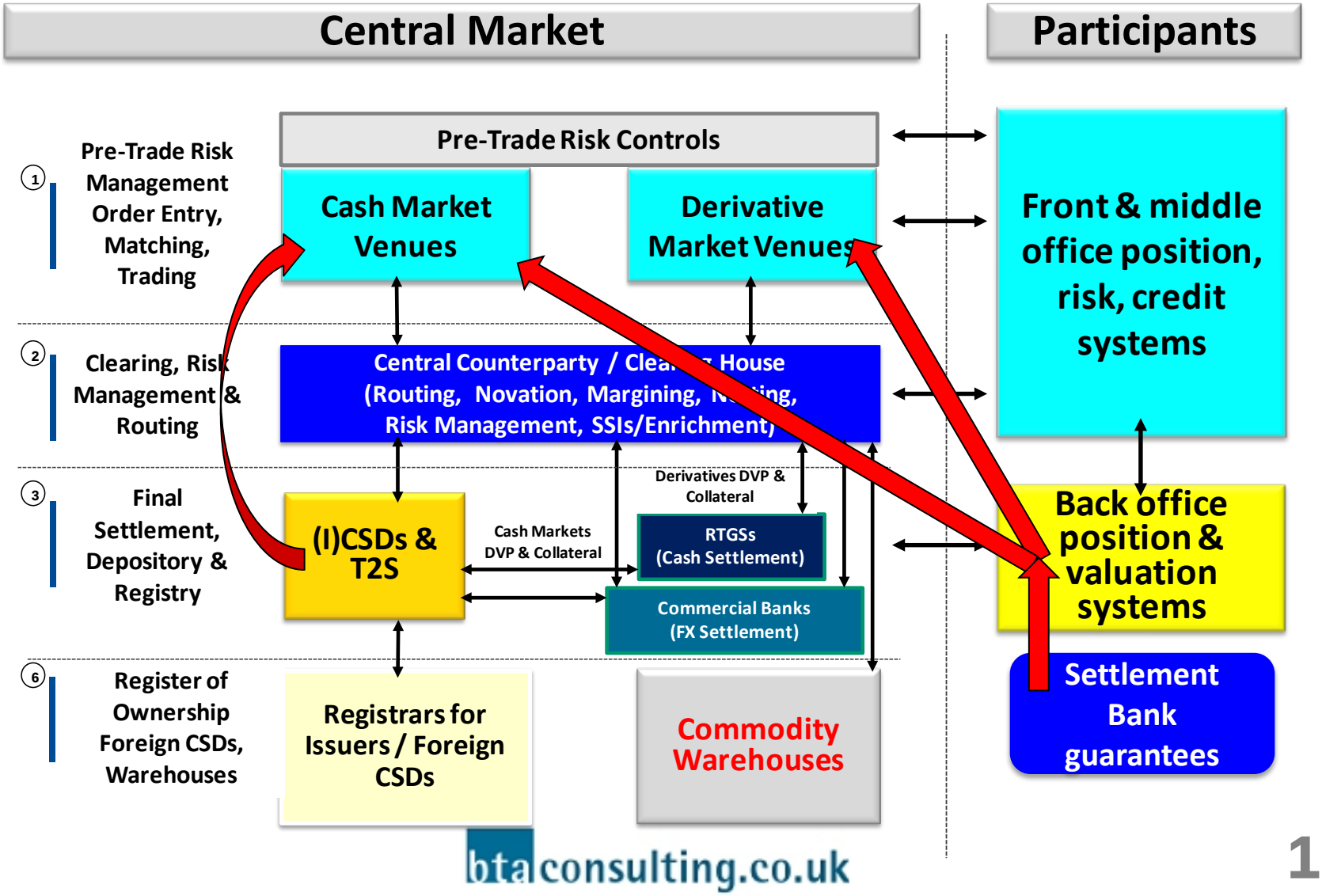
Centralised v decentralised



Location dependent upon investor attitude to credit certainty and cost

New Model

Objective: When you trade, there is 100% certainty of settlement



New Model

Pre-trading: Upload positions and bank guarantee limits to central trading system with real time reconciliation to participant systems using Distributed Ledger Technology (DLT)

Bank guarantees blocked in RTGS and linked to participant systems via DLT

Trading System: Includes algorithm to replicate "trading multiplier" requirements

Co-locate OTC position keeping systems and link via DLT to eliminate credit risk

Settle locked-in trades TSFIDVP (eliminates all risks)

Clearing integration with legal ledgers ((I)CSD, RTGS, back offices) using DLT to lower margin

Future positions blocked in legal ledgers ((I)CSD, RTGS, back offices) & stress tested

SFIDVP settlement across legal position ledgers

Fails management should be eliminated

No requirement

Conclusions

1	Excess leverage today leads to cyclical growth & uncertainty
2	Intermediaries are less wiling to take risk and act as principal
3	Trading needs to be based on locked in positions (spot/future)
4	Trading engine: intelligent algos create trading multipliers
5	Performance / latency requirements are achievable
6	DLT connects different legal ledgers based on user choice
7	End to end central model requires significant change to achieve settlement certainty with much lower margin requirements

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