

ACSDA

Americas' Central Securities Depositories Association



CSD Trends and Tendencies

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Who am I - My Background

- I am a Canadian citizen living in Colombia
- I am an independent Capital Markets Infrastructure consultant and Executive Director of The Americas' Central Securities Depository Assoc. (ACSDA)
- Employed by The Canadian Depository for Securities (one of the world's most advanced depositories) for almost 20 years
- In recent years I have been involved in consulting/advisory engagements in 18 different countries on 5 continents, working in the areas of FMI Strategy, Software acquisition and implementation, Pricing, New Product/Service Identification and Development, Process Improvement, and Risk Management.

AGENDA

The Current Reality

- For-profit versus not-for-profit
- Integration of Market Infrastructures
- Shortening settlement cycles
- Critical (Non-revenue generating) Obligations
- Fixed versus Variable Costs
- Pricing
- Financial Liability for Non-Default Losses
- A Perfect Storm for CSDs

The Future

- The Integration Landscape
 - Alliances/Links
- Ongoing Focus for CSDs
- Diversification
 - Drivers
 - Issues/Impediments related to Diversification
 - CSD Core Initiatives
 - Diversification beyond the core
 - CSD Non-core Diversification Initiatives

What I am not going to talk about today

- Adoption of International Standards
 - BIS Settlement Models
 - ISO/SWIFT messaging
 - Corporate Actions Processing
- Regulation
- The Importance of the PFMI and compliance
- The evolution of CSD Custody Holding Models
- Risk Management
 - Risk Appetite
 - Cyber Security
- ISO Quality certifications
- FATCA - The Foreign Account Tax Compliance Act
- Technology
 - Cloud, Robotics, AI, DLT/Blockchain

Realities, Trends and Tendencies

For-profit versus not-for-profit

30 years ago FMIs (Stock Exchanges and CSDs) were typically user owned mutualized companies that existed to service their members on a cost recovery basis

Times have certainly changed ...

- Of the world's 150+ CSDs there are only 1 or 2 (that I am aware of) that operate on a not-for-profit basis
- A large number of FMIs are now public companies, with many that trade as listed companies on stock exchanges
- CSDs generally are achieving higher levels of profitability than Exchanges

Realities, Trends and Tendencies

Integration of Market Infrastructures

Vertical

- Vertical integration has come full circle
- Stock Exchanges recognized that they needed to establish a clearing and settlement capability to support their exchange, which of course they did.
- Subsequently, they divested the post-trade activities in order to focus on trading and market creation, which of course were much more interesting and profitable activities, leaving others to care for the clearing and settlement of their trades ... essentially dismantling an existing vertical integration.

Realities, Trends and Tendencies

Integration of Market Infrastructures

Vertical Cont.

- But times have changed ...
- Over the past decade or more, Exchanges have come to recognize the error in their original strategy.
 - Their business and profit margins in many cases were under attack from competition in the form of other trading systems
 - They realized the strategic importance of vertical integration and in some cases reintegration of post trade infrastructures, and began aggressively acquiring CSDs and clearing houses which had generally retained their monopoly position and profit potential.
 - According to a recent survey, 8 of the 10 largest, and 14 of the top 20 largest publically traded Exchanges (by share value) own a majority interest in the post trade infrastructure.

Realities, Trends and Tendencies

Integration of Market Infrastructures

Vertical Cont.

- Exchanges now certainly recognize the value of vertical integration ...
 - In enhancing their overall profitability
 - In protecting their market franchise
 - In creating economies of scale
 - In enhancing strategy harmonization and ...
 - In enhancing trade execution through to settlement risk management

The Integration Landscape

Vertical/Domestic

- Numerous Examples
- Likely that greater than 50% of markets have vertically integrated FMIs
- Some using a holding company structure and others where the Exchange owns the vertical
- Some prominent examples;
 - Canada TMX Group
 - Switzerland (SIX SIS)
 - Germany (Deutsche Bourse)
 - Brazil (B3)
 - Spain (BME)
 - And many more in Latin America

Realities, Trends and Tendencies

Integration of Market Infrastructures

Issues to Consider

While there are some very positive aspects to vertical integration, as well as the now prevailing for-profit Financial Market Infrastructures, this trend raises some important and potentially complicated governance issues

- How do you ensure that the interests of the capital market including the government, issuers, participants and investors are properly considered?
- Where do the rights of the market infrastructure shareholders rank relative to these other stakeholders?
- What about market access to potential FMI competitors or access to the facilities of a CSD by a potential competitor to its Exchange owner?

Realities, Trends and Tendencies

Integration of Market Infrastructures

Issues to Consider

- Should the Vertical Silo be required to demonstrate that it is price/cost competitive with other markets, and if so, with what other markets?
- Given the monopoly or pseudo monopoly status of some parts of the Vertical Silo's business, should there be any limitations on profit levels?
- What about cross subsidization of trading costs from the CSD or Clearing House?
- **A great many markets have been, and are well served by the vertical integration of their market infrastructures, most particularly in the initial market development stage ... but how do you ensure that continues to be the case?**

Realities, Trends and Tendencies

Integration of Market Infrastructures

Horizontal

- Horizontal integration of post trade infrastructures has also been prevalent over the past 20 to 30 years.
- Driven by the desire to realize necessary economies of scale and other efficiencies
- There are however numerous markets with more than one CSD and still at least one market with 3.
- The principal barriers to Horizontal Integration are;
 - The prospect of reduced competition
 - Loss of control
 - Loss of market status in the case of cross border integration

Realities, Trends and Tendencies

Integration of Market Infrastructures

Horizontal Cont.

- Horizontal integration of post trade infrastructures is a critical imperative in some markets to achieve efficiency gains
- In some cases cross border integration (as difficult as it can be) could make the difference in the health if not the survival of the market
- Horizontal integration provides a greater potential for cost reduction synergies than Vertical integration
- Somewhat surprisingly, horizontal integration has been far more prevalent in larger markets (e.g. USA, Canada, Brazil, Europe) than in smaller markets.

The Integration Landscape

Horizontal/Cross Border

Euroclear – Acquired a number of National CSDs, but only integrated the operations/systems of 3.

- Euroclear Bank, France, Belgium (Integrated)
- Netherlands, UK & Ireland, Finland and Sweden (Not Integrated)

Nasdaq CSDs in the Baltics (2017)

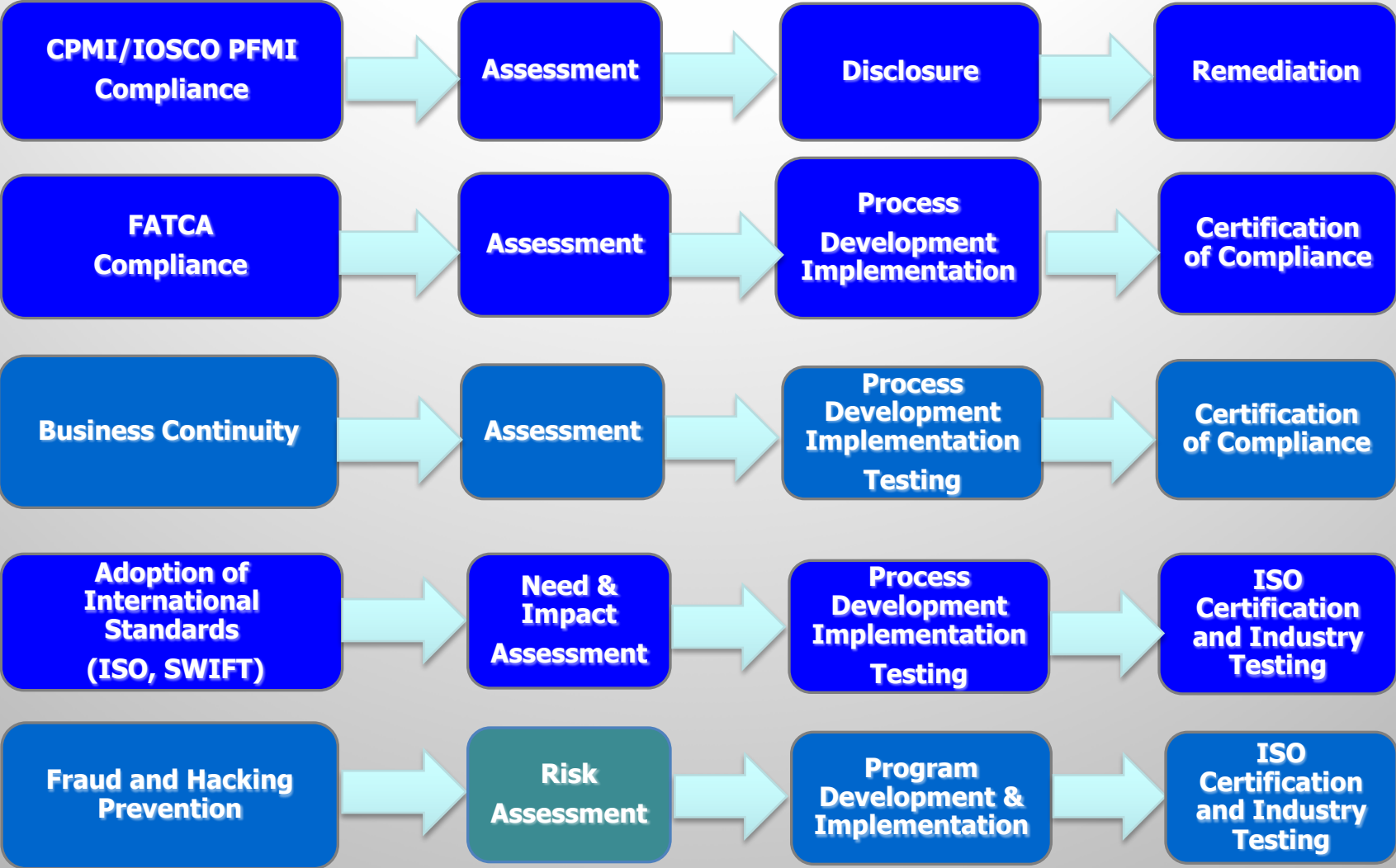
- A CSD in Latvia, with branches in Lithuania, and Estonia

Shortening Settlement Cycles

“Time = Risk”

- European markets moved from a T+3 to a T+2 settlement cycle, in a “big bang” migration unprecedented in terms of its scale.
- The United States (and Canada) moved to T+2 in the third quarter of 2017.
 - The balance of the world’s major markets are following
 - Canada with a market closely linked to that of the US mirrored their timetable because of the importance of aligning settlement with markets with which you have close ties.
 - The biggest challenge resulting from this movement is managing international transactions.
- This has hastened the acquisition of new and updated technologies by FMIs where their existing technology platforms cannot manage the transition efficiently.

Critical (Non-revenue generating) Obligations



Realities, Trends and Tendencies

Fixed versus Variable Costs

- CSDs universally have a very high percentage of fixed versus variable costs
- Fixed (or non-variable) costs typically exceed 85% of total expenses
- It is virtually impossible to be a low cost/price supplier of services to the market, if the market has low capitalization levels and transaction volumes
- However, there is one constant... the drive and desire for lower prices

Trends in Pricing

Transparency in pricing has increased significantly

- Most CSDs now post their fee schedule on their website
- European code of conduct – many CSDs include fee calculation examples
- Many, however, remain almost incomprehensible

Price lists are increasing, not decreasing in size and complexity

- Unbundling of prices
- Cross subsidy avoidance
- Growing business complexity
- Profit motivations

Trends in Pricing

Pricing philosophies and approaches are as varied as ever

- Ad valorem pricing is extremely common, and can be found in fees for custody/safekeeping, asset servicing and transaction processing – leading to enormous differences in pricing between CSDs
- Use of tiering and volume discounts are extremely prevalent

Extremely varied revenue models

- Increased revenue from non-traditional sources
- There are “traditional” CSDs realizing 90+% of their revenue from trade processing services and some realizing 75+% from custody related services.

Factors Influencing Pricing Approaches

Factors Influencing Pricing Approaches

- A great number of factors influence a CSD's pricing approach, including;
 - For-profit versus not-for-profit structure
 - Level of competition, market protection
 - Desire for fee schedule simplicity or tolerance for complexity
 - Nature of the cost base
- CSDs have a highly fixed cost base, yet many opt for pricing structures which yield a highly volatile revenue stream
 - Desired level of revenue stability ... or tolerance for volatility
 - Avoidance of cross-subsidization
- Regulatory involvement
- Historical market practices

Pricing – Volume remains King

- In 1982, The Canadian Depository for Securities (CDS) averaged 12,600 exchange trades per day
- In 1982 the cost to clear and settle an exchange trade was CAD 0.63 or CAD 1.57 today, adjusted for inflation

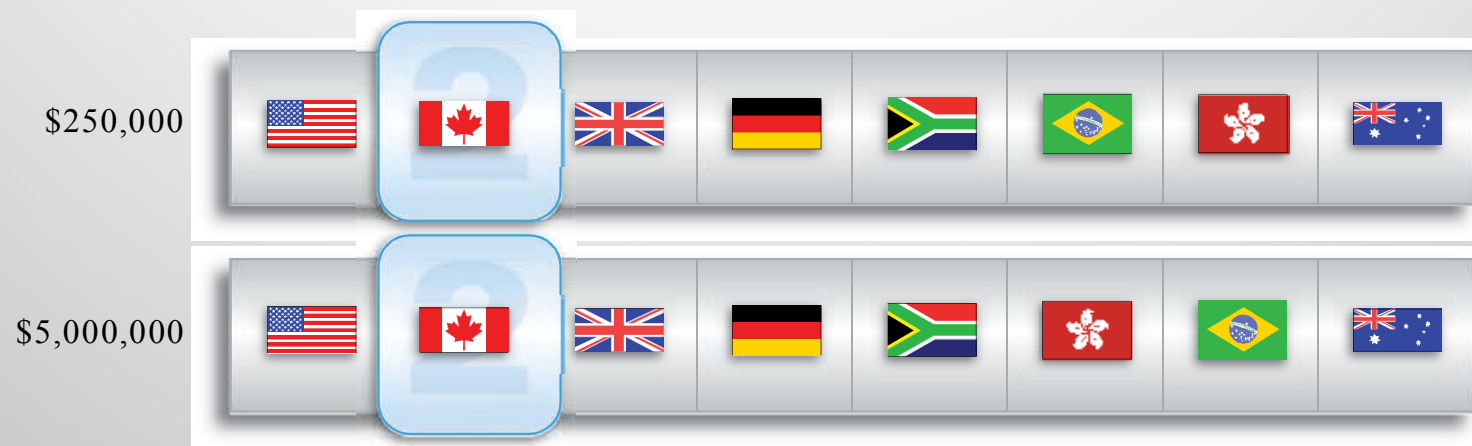
39 years later

- CDS routinely processes in excess of 2 million exchange trades daily
- The cost to clear and settle an exchange trade is now CAD 0.005

There is no substitute for volume growth in reducing prices in a material way

Pricing Matters

CSDs are benchmarking their prices and pricing practices to other CSDs as a result of stakeholder pressure.



As part of their Recognition Order, CDS in Canada every two years must compare their pricing with other CSDs in order to demonstrate that their competitive position has not deteriorated.

Financial Liability for Non-Default Losses

There is an increasing demand of post-trade Financial Market Infrastructures for risk capital and collateral to provide financial protection against losses or damages incurred by participants exposed to financial losses stemming from actions taken by the FMI (CSD, SSS, or CCP) in the management of the FMI.

In this connection I conducted a short survey during the month of October 2020.

1. Is your entity responsible financially for losses or damages incurred by participants exposed to financial loss for actions taken by the FMI (CSD, SSS, or CCP) in the management of the FMI?

If yes ...

2. Is there a limitation to the amount of your entity's financial responsibility/liability?

3. Does this responsibility have implications for your service pricing, and if so, in what way?

Financial Liability for Non-Default Losses

CSD	Country	Responsible for losses	Limitation on Responsibility	Implication for Pricing
Strate	South Africa	Yes, in case of proven negligence	Direct losses	No
SIX SIS	Switzerland	Yes	No	No
Indeval/BMV	Mexico	Yes	No	No
KSD	Korea	Yes	No	No
B3	Brazil	Yes	No	No
Clearstream	Germany	No		
Iberclear	Spain	Yes	No	No
Euroclear	Belgium	Yes	No	Yes
DCV	Chile	Yes	No	Yes
Latin Clear	Panama	No		

- The chart represents a summary of the responses received to the survey.
- There is definitely an overall tendency ... CSDs generally are responsible for losses incurred by participants resulting from their actions without limitation. This policy does not however translate directly into an impact on service pricing.

A Perfect Storm

CSDs are being confronted by a “Perfect Storm” of demands on their business that may ultimately force some (necessary) consolidation.

CSDs are feeling the impacts of;

- Unrelenting cost and price pressures
- Ever increasing cyber security threats requiring a response
- Emerging technologies e.g. cloud, DLT
- Robotics and AI ... requiring scale and capital
- Legacy systems impeding service growth and requiring investment
- Stagnating issuance and volume growth
- Increasingly demanding and complex regulatory oversight
- Global pandemic

How CSDs and their markets respond could be an issue of survival. The “storm” will almost certainly widen the gap between CSDs in terms of processing capability and unit costs.

The Future

- **FMI Silos of Exchanges, Clearing Houses and CSDs will continue to grow**
 - Seeking economies of scale,
 - Unified strategy for the market, and
 - Protection from competition
- **Fewer FMIs through Horizontal consolidation and integration**
 - Substantial potential synergies, but difficult to capture
- **Continued focus will be on the prevention of fraud and cyber crime**
- **Unrelenting demand for high quality, low cost service delivery will drive investment in Robotics, AI and other new tech.**

Alliances/Links

Cross Border

- Virtually every CSD in the world (excluding Central Banks) have linked with other markets either directly or via a custodian acting as an intermediary.
- These are frequently initiated by Exchanges wishing to inter-list securities issues
 - Unfortunately, they frequently prove to be costly and ineffective.
 - It is key not to over build initially. Refine the link as volume develops.
 - Too many potentially good link ideas die because of the initial cost burden.
 - It is not a good idea to not put much faith in participant volume projections.

Alliances/Links

Cross Border

- Shanghai and Shenzhen-Hong Kong Stock Connect
 - Investors trade in the other market through their local broker and settle locally. Believed successful, with strong volumes.
- The ASEAN trading link
 - Malaysia, Singapore and Thailand supported by their respective CSDs closed down in 2017 after 5 years of operation. Brokers had their own links to get business done.
- CDS/DTCC
 - A settlement/custody link that has existed in various forms since the 1980's processing in excess of 1 million transactions monthly
- Linked-Up Markets
 - Est. in 2009 with streamlined cross-border processing between 10 markets
 - Has not attracted the expected volumes - inactive

Ongoing Focus for CSDs

- **Blockchain Technology** and its potential application to Post Trade activities
- Prevention of **Cybercrime**
- Facilitating efficient **Collateral Management**
- **Dematerialization** – paper is inefficient
- **Financial Viability** – not being marginalized
- Risk Management – protection of **Reputation**
- Evolving **Regulation**
- **Diversification** will be key to success and potentially survival

Diversification Drivers

CSDs and Business Volume

- CSDs universally have a very high percentage of fixed versus variable costs
- Fixed (or non-variable) costs typically exceed 90% of total expenses
- CSDs have very limited ability to impact the volumes they are processing in the short run
- Volumes are generally dictated by a combination of;
 - Prevailing conditions in the capital market
 - Issuers
 - Investors – Domestic & International, Institutional & Private
 - Exchanges and other trading venues
 - Government

Diversification Drivers

CSDs, like other businesses face almost constant demand for more service (value) at lower cost... and since it is virtually impossible to be a low cost/price supplier of services if the market has low capitalization levels and transaction volumes ...

a change in the business model has become essential, particularly for CSDs in developing or smaller markets.

The Response

CSDs (big and small) around the world are almost universally diversifying their business to services outside their core offering and to customers, often outside their traditional client base.

Diversification

Diversification of business and revenues

- CSDs around the globe are leveraging
 - Relationships
 - Reputation
 - Core competencies, and
 - Creativityto grow their business, beyond core processing in post trade securities processing.
- Diversification brings new opportunities for growth and new revenues, but also with a potential downside potential distractions from core responsibilities, as well a new set of business, reputational and financial risks
- What forms is Diversification taking within CSDs?

CSD Core Initiatives

Some of the diversification being pursued by CSDs

- Process automation
- Domestic Collateral/Guaranty Management
- Corporate Action Processing Improvements
 - Increased automation
 - Central Bank Funds
 - Increased issuer accountability
- Adoption of DVP settlement for OTC transactions
- CCP development
- Information Services
- International Links
- Sub-custody arrangements
- Foreign securities eligibility

Diversification Beyond the Core

- Looking up the value chain for opportunities to provide current customers with a wider range of services
- Back and Middle Office processing
- Providing outsourcing solutions
- Transfer Agent, Paying Agent and Registrar services to issuers
- Processing solutions for other financial instruments e.g. Mutual Funds, Promissory Notes
- Record keeping for anything that would benefit from a centralized/electronic solution e.g. real estate, insurance

CSD Non-core Diversification Initiatives

- Mutual Fund Processing
- Securities Registry and Transfer Agent Services
- Services for the Energy Market
- Back Office Services
- Commodities Market Service Offerings
- Information and Data Services
- Participant BCP Facilities
- Cross-border Collateral Management
- Valuation systems for REPOS and other transactions
- Non-security record keeping and processing
- Repository for international information
- Securities Lending and Borrowing ...

E-Voting

- Currently, E-voting is likely the most populated (beyond the core) area of business diversification by CSDs.
- CSDs in every region of the globe are introducing E-voting solutions to their markets, in many cases accelerated by needs stemming from the pandemic.
- CSDs are delivering proprietary e-voting solutions
 - MKK in Turkey who were one of the first entrants into the market with their e-GEM solution which is now in use on an outsourced basis by several other CSDs.
 - B3 in Brazil has also developed its own solution, as have numerous others.
- Solutions from vendors such as Nasdaq.
 - Strate in South Africa launched e-voting on Nasdaq's platform in late 2019.

Issues/Impediments related to Diversification

- New, and at times not well understood risks
- Success often depends on a “sales” culture, historically not a competency in the monopoly world of a CSD
- Participant (stakeholder) resistance
 - usually if diversification comes in the form of competition
 - Unsatisfied demands in the core
- Organizational/Board insufficient “Risk Appetite”
- Current demands of the Core Business
- Reputation – past successes or failures, perceived organizational competences

These issues must be effectively addressed in order to truly succeed in diversification of the business

CSD Trends and Tendencies

Questions?