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1. Background

For over 20 years banks and financial institutions have been trying to implement common data and process standards across the business, usually internally and from the bottom up, frequently driven by a Chief Data Officer or equivalent. The motivation for this approach seeks to provide the ability to move, analyse and deconstruct transaction data in an efficient way – to reduce complexity and costs and improve internal visibility and transparency across non-aligned business or product verticals. Since 2016 the BCBS 239 standard, ‘Principles for effective risk data aggregation and risk reporting’, has also driven an enterprise agenda to strengthen banks’ risk data aggregation capabilities and internal risk reporting practices, in turn, enhancing the risk management and decision-making processes at banks. Some banks have been successful in implementing an internal standardised approach in some product domains, but these seldom deliver benefits outside of the organisation.

In recognition of the complex, disjointed, costly and opaque state of the derivatives market in September 2016 ISDA drafted a whitepaper ‘The Future of Derivatives Processing and Market Infrastructure’ followed in 2017 by a programme to reduce inconsistencies between firms and address the data and process standards issues and prepare a foundation for new technology. The outcome has been the development of version 1.0 of the ISDA Common Domain Model with the goal to increase automation, improve efficiency, reduce complexity and lower costs. ISDA has created a common representation of trade events to deliver a standardised approach to trade lifecycle and post trade operations and product data.

This introductory document aims to summarise a general perspective on a Common Domain Model and to consider an application to an alternative market – Securities Finance.

2. What is a CDM?

Ayaz Haji, head of ... technical architecture and data strategy at Goldman Sachs, explained the term: “For our industry, we have a set of actions, life-cycle events, products, that we, as an industry, care about and we, as an industry, exchange data about. Really, the common domain model is a single definition of those things, according to the market structures that we have”¹

In principle a common domain model seeks to codify best practice and define a granular, detailed taxonomy for the industry. It is effectively a blueprint for business and technology to operate under - a common set of instructions used by all parts of the bank using and consuming products or data for this asset class.

ISDA designed their detailed CDM model to enable any derivatives business to design a financial product using exactly the same building blocks and deriving exactly the same cashflow outputs.

3. Why is this different?

Across most asset classes and product groups there is an underlying trend toward digitisation, driven by demands for standardisation, efficiency and reduced costs. In fact the noise around distributed ledgers is a consequence of this goal. But, the evolution of DLT should ideally be supported by interoperability. Each asset type should be supported by a number of different databases, vendor products or DLTs, each of which uses a common representation of the same ‘industry’ data set and product function.

¹ Risk.net Our Take by Duncan Wood 15th May 2017 www.risk.net/our-take/5265106/welcome-to-the-new-isda-more-ambitious-than-the-old-one

An industry wide model for DLT is still a way off. But the foundation for a federated DLT solution can be architected today to deliver transformation in incremental steps, each delivering a meaningful \$ business benefit.

So, a key foundation to next generation technology is the database model and codified industry best practice. This foundation must have an adoption model that delivers value at each stage of the journey. If the initial cost of adoption is too high participants will not adopt it.

Vendor, and indeed in-house, technology for many financial assets is nearing 30 years old. The implementation of new booking models, data and product creation for these systems is too expensive. A cost-effective interim step is needed to bridge the divide and facilitates change.

4. How do I use a CDM?

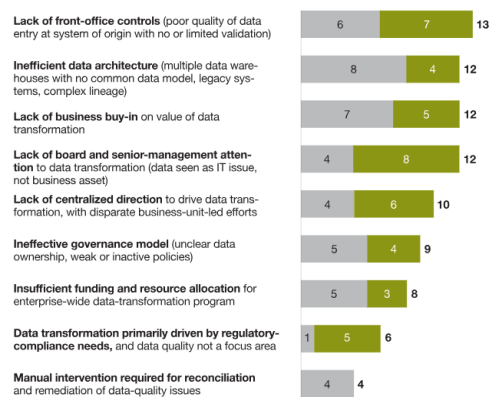
Firstly, the design of the CDM must be intelligent. For example, if the model taxonomy and best practice is entirely brand new - the delta between existing business and data models will be too high - the cost of adoption will be high. The model design must be a 'common denominator' to current industry best practice.

Top challenges to improving data quality are front-office controls, data architecture, and business and senior-management attention.

Significance of challenges to improving data quality at enterprise level, ordered by number of respondents ranking challenge as no. 1 or no. 2

Number of responses, n = 41

■ No. 1 challenge ■ No. 2 challenge



McKinsey&Company | Source: Fourth McKinsey-IIF Global Risk Data and Technology Survey, 2016

An initial use case could be for regulatory reporting. For example, EMIR or SFTR. Under SFTR ESMA has done a good job of defining the available field contents for SFTR reporting, but the industry still supports several 'non-standard' industry practices e.g. on leg and off leg booking, trade times etc. The CDM approach would be to codify the best practice.

McKinsey noted in 2016 that fundamental barriers to banks BCBS239 compliance is driven by a lack of a high-quality data architecture and a lack of front office controls. A CDM model starts to provide the robust standardisation and controls needed to support lower cost compliance.

5. What does the business case look like?

An incremental approach to CDM deployment will bring a range of business benefits to an adopter:

- Optimised approach to legacy systems. Provide a common foundation for new technologies like distributed ledger, cloud and smart contracts to facilitate data consistency. A CDM model will support a tactical step to deploy a process and business model that will enable IT to deploy better technology at a lower cost.
- Improved regulatory data – organising all internal source data into a common repository will enable consistency in regulatory compliance and reporting and the quality of the regulatory reporting output will be higher, leading to fewer exceptions from the TR, ARM or NCA.
- Lower internal front to back and external reconciliation costs – Reduce the current need for continual reconciliations to address mismatches caused by variations in how each firm records trade lifecycle events on each system of record within the bank. The data

transformation, aliasing and tolerance requirements will be lower due to higher quality source data

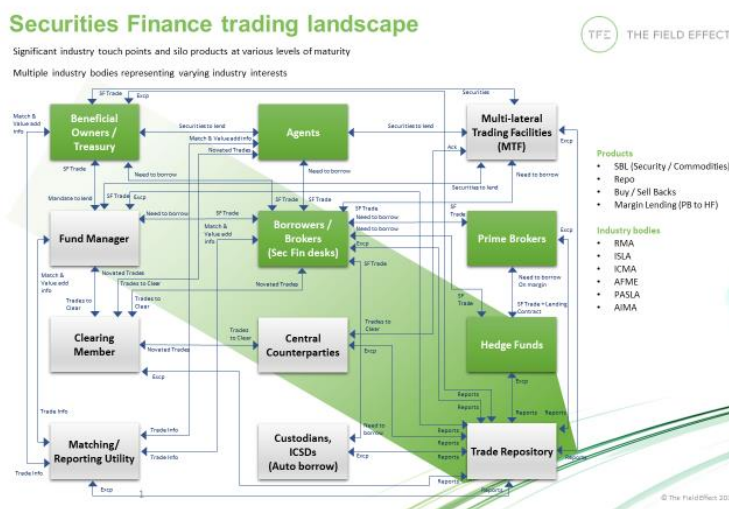
- Fewer exceptions – material breaks will still be captured at the pre-match process but all parties to the transaction will have reduced friction; better reconciliation processes will reduce exceptions
- Improved data analytics – internal bank data sets are frequently impacted by multiple operations functions creating non-standard attributes. The ability to create meaningful value from these data sets will be increased if the CDM is adopted
- Better risk data and consumption of cashflow data for risk modelling (inc. BSBC239 and FRTB benefits) – as above
- Data governance – incremental CDM adoption by product type or asset class will bring data improvements while avoiding enterprise wide data mandates across all products. Assuming a successful adoption model, adjacent products or assets can be added
- Client business - Lower cost of processing will enable banks to win client business based on cheaper pricing and improved services
- Accelerate greater automation and efficiency in the market through the facilitation of interoperability across firms and platforms

By aggregating multiple efficiencies across the trade lifecycle, across banks and market infrastructure provider the total business benefit has the potential to be significant.

Estimates of the cost benefit potential for derivatives ranges between \$3bn and \$7bn globally

6. What types of organisation would use one?

Any market participant creating, processing, sharing, reconciling or reporting data.



Any organisation spending significant time, effort and money on transforming data, reconciling data or managing exceptions will accrue significant benefits through the reduction in friction and increase in efficiency. The value of a CDM adoption model will increase with each participant adopting the model.

Buyside, brokers, banks, CCPs, CSDs, TRs and regulators will all accrue a benefit from a CDM through reduced costs, lower friction and increased efficiency.

7. Which areas of the bank would be impacted?

CDM Impact

The implementation of a Securities Finance CDM will impact many areas of the bank



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Impact analysis conducted by The Field Effect indicates a CDM model could have a wide-reaching business benefit across many business segments within Securities Finance

Front office will benefit from using standardised, packaged product modules, affirmation and allocations processes will improve.

Middle Office and Operations benefit from reuse of golden

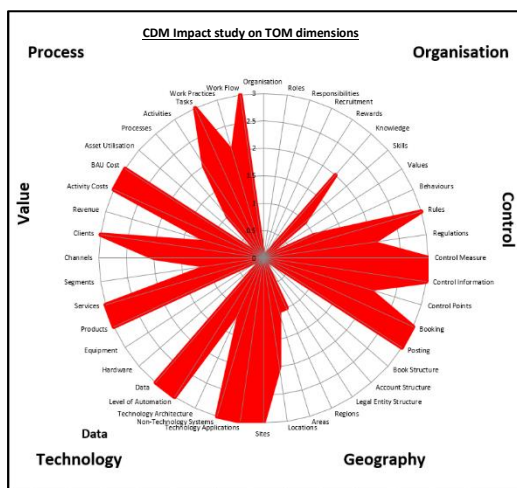
record and standardised processes and data. Reconciliations and exceptions will be lower. Settlements and payments will also benefit from access to a CDM model.

Risk will be able to consume the correct, standardised raw data for risk calculations and FTRB stress testing.

CDO and Data governance – where banks have faced a challenge to converge multiple business into a single centrally mandated data model (EDM Council FIBO?), and been challenged to deliver this approach in a consistent and cost effective model, the Data group will have the potential to deliver an industry convergent data model implemented by business in an effective and efficient way.

8. What needs to happen first?

Impact analysis conducted by The Field Effect indicates a CDM model could have a wide-reaching business benefit across many business functions within Securities Finance



TFE recommends that any new CDM model utilising industry best practice across SBL, Repo and Prime Brokerage (Margin Lending) would be designed utilising the ISDA CDM framework.

Initially TFE is recommending an analysis of current industry participant process, systems and data models across the in-scope asset classes. Once complete, a SecFin CDM model will align with the derivatives model and will allow improved efficiencies for banks.

The outcome is expected to be a best fit minimal delta between current industry participant processes, systems and data and the new CDM model.

Once the CDM is defined TFE is recommending a first step to find an aligned partner(s), counterparty or client and develop a PoC and stage 1 adoption model.

9. Is there any incentive to adopt a CDM?

Preliminary evidence suggests that the banking industry as a whole, and the Securities Finance industry itself, carries significant internal costs for fails, exceptions and settlement issues which will support a robust business case.

For industry service providers, the adoption and support for a CDM approach will reduce the transformation costs and increase levels of automation. TFE anticipates that these service fees could be lower to provide an incentive to adopt the new CDM model.

This CDM will be encapsulated in TFE Modus, which can help banks identify an efficient adoption model and roadmap.

10. Will I need a big budget for this?

Adopting an asset specific CDM model, with a focus on adding business functions and products incrementally will be cost effective and should return in year ROI.

The initial cost of implementation will be dependent on the delta between the current processes, systems and data, and the CDM model. If the delta is large then the cost will be higher, but the benefits higher also.

The adoption model deployed will need to take into account other demands on budget, capacity to execute and appetite to drive incremental transformation across the end to end business processes.

The goal is to deliver a foundation framework for internal and external bank processes that is pragmatic and practical and provide a mechanism to unlock incremental value.

By comparison, the alternative approach of an internal enterprise CDM execution project would be a multi-year multi-million \$ project. An internal CDM model will not provide the industry interoperability that a standardised product/industry CDM can bring.

Given the range of business areas identified in Section 5, any CDM project should engage stakeholders across Sales, Legal, Front Office – business, Operations – settlements and payments, Reg and Compliance, Data, IT, Finance and the office of COO. In order to plan for a prototype or implementation, a pro-rated budget allocation could be drawn from each stakeholder group.

11. Adoption Model

The steps to drive adoption of a strategic market initiative will require collaboration, cooperation and industry acknowledgement of the merits of a CDM model for each organisation and the broader marketplace. Another challenge to deliver the optimal benefits of CDM will be to deploy the CDM on a standardised global basis – the continuation of regional best practice and regional operating unit data standards will hinder the development of the business benefits. As a result, TFE has identified some initial steps to drive market engagement as follows:

- Education, explanation – increase awareness, knowledge and understanding of what a CDM model can bring – efficiencies, cost savings and standardisation
- Support and trade association buy-in – find senior visionary support for a strategic market initiative that has the potential to deliver long term business
- Member support and engagement to understand benefits – spread messaging and education across the members

- Support from Operations, Risk and Data teams – identify all interested stakeholders to win budget and support
- Approach planning - agree and plan a staged, incremental, business benefits-based implementation approach to prove and validate the case

12. How can TFE help?

TFE has already completed a significant amount of work to map and model Securities Finance product best practice and the ESMA SFTR-led data reporting fields and attributes. This work can provide an effective accelerator to define a SecFin CDM. TFE is proposing a few activities to help support an adoption model.

1. A whitepaper discussing the principles and benefits in more detail.
2. A draft adoption model that delivers rapid ROI and avoids disproportionate costs
3. Engagement across the industry to bring all market participants into alignment
4. Engagement across each bank to bring key stakeholders to the table
5. Impacts study for CDM, draft business case and roadmap to adoption