

EDM Council Memorandum

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RE: **EDM Council Response to Consultative Report on the Harmonization of Key OTC Derivatives Data Elements**

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The EDM Council has been a long-time participant in discussions with regulators, market authorities and financial institutions on the scope of challenges associated with data harmonization across the global financial industry. We are members of the Commodity Futures Trading Commission's (CFTC) Technical Advisory Committee (TAC) as well as chair of the Data & Technology Sub-Committee of the Financial Research Advisory Committee (FRAC) within the Office of Financial Research (OFR). We support the data harmonization proposals defined in the CPMI-IOSCO Consultative Report, but take a broader view of the approach needed to improve transparency in OTC derivatives markets and mitigate systemic risk.

The EDM Council believes that the pathway to addressing the data challenge for OTC derivatives begins with the adoption of a common language based on the precise legal structure of all financial instruments and processes. This common language should be expressed as a structured ontology to enable regulators and market authorities to classify and aggregate data based on any combination of facts as well as provide automated structural validation of the integrity of the instrument. Adopting this approach will enable regulators and market authorities to unravel the full complexity of all types of derivative contracts, support a broad range of analytical requirements and help define process flows to both analyze notional amounts and compute state contingent cash flows.

We view the output of the CPMI-IOSCO Working Group for harmonization of key data elements as an important step in defining the data requirements needed for flexible analysis. We applaud the Working Group for both their capture and use case illustrations on how they will be used to support the functional mandates of various market authorities. The harmonization approach at the end of the "data production process" however overly simplifies the true nature of the compounding process within financial institutions, the dramatic increases in transactions volumes and the growing complexity of derivative products across the industry.

The Problem of Fragmentation

In order to effectively manage risk in this interconnected environment, financial participants are required to capture and validate data from millions of discrete daily transactions as well as classify and aggregate them in ways that are meaningful for both their internal risk management and for system-wide risk analysis performed by market authorities. The core problem remains. Each market participant have implemented a multitude of systems leveraging existing technology and modeled using their own term, definitions and data structures. These semantic differences create problems with integration across lines of business and inhibit the capacity of participants to unravel transitive exposures, evaluate risk

concentrations, determine VaR limits, derive earnings-at-risk calculations or achieve firm-wide views of all the meaningful dimensions of risk that might exist.

The data challenges associated with derivatives transparency are a microcosm of the larger industry-wide problem. Derivatives are challenging from a data perspective because they are often uniquely customized bilateral contracts among multiple parties with highly variable terms, conditions and roles performed. This becomes critical because the underlying data about the derivative instrument and the counterparty participants must be precisely defined and comparable in order to perform data validation, aggregate data, understand counterparty risk or unravel critical dependencies.

In today's fragmented data environment, the comparability objective is elusive because the data is sourced from many places and reported to independent data repositories without a common data standard. Harmonizing data at the end of the process doesn't address the problems resulting from the use of common words that mean different things and the expression of common concepts using a variety of nomenclature. In today's environment, in order to manage this problem, participants are engaged in a continual process of data reconciliation and process transformation. Many of these processes are manual and prone to error. And as these reconciliation processes are multiplied across a variety of interdependent functions, the result is a mismatch of underlying data, divergence in calculation process and a lack of comparability in regulatory reporting.

Financial Industry Business Ontology (FIBO)

The EDM Council has been working collaboratively with most of the participants in the derivatives industry to define a common financial language to improve data quality, reduce reconciliation, align data across linked processes and better perform enterprise-wide risk analysis. These efforts have resulted in the development of the Financial Industry Business Ontology (FIBO). FIBO can be understood as a common reference point (a type of Rosetta stone) to ensure data from different sources can be combined and compared in a variety of meaningful ways. FIBO establishes unambiguous shared meaning about derivatives and other financial concepts to unravel links and relationships to support enhanced analytical capabilities. FIBO contains glossaries of terms and definitions aligned with existing standards such as FpML, ISO 20022, XBRL, MISMO and FIX. It contains a definition of relationship facts that are precisely defined and captured as business rules for processing. It is the combination of terms, definitions and relationships that enables data comparability and flexible analysis.

FIBO is being managed as an open standard by the members of the EDM Council under the technical governance of the Object Management Group (OMG). FIBO is not complete, but it is well advanced as well as supported by a proven process methodology to ensure its expedited delivery. FIBO for derivatives is based on industry-wide collaboration with subject matter experts including both technical and business specialists. For the CPMI-IOSCO objective we need four components of FIBO:

1. FIBO-Foundations: This is complete and published as an official standard. FIBO-Foundations contains the basic building blocks of the ontology to facilitate flexible analysis.
2. FIBO Business & Commerce: This has been tested/verified and is now in the OMG technical review process. FIBO Business & Commerce defines concepts needed to understand the various types of contacts that exist, the concepts of classification, the types of participants in the financial system and other critical building blocks related to payment terms and schedules.

3. FIBO Indices: This has also been tested/verified and is in the OMG process. FIBO Indices contains everything needed to understand economic indicators and rates.
4. FIBO Derivatives: The vocabulary for rate-based and credit default swaps are fully modeled and have been validated by industry participants. The vocabulary for FX, commodity, asset-based and contract-for-difference have been modeled. We need to subject these to another round of model validation to ensure that we have correctly captured all the nuances.

In addition to the ontology components, the EDM Council has been working with members on an operational proof-of-concept for interest rate swaps using internal data provided by State Street Corporation. The results of that POC will demonstrate the benefits and implementation requirements associated with adopting a common language and with using that common language for inference/semantic processing. We are in the final stages and upon completion, the POC will:

- Demonstrate the ability to ingest undifferentiated swaps from multiple repositories (spreadsheets, FpML and relational databases) and harmonize them to common meaning based on the terms of the underlying contract.
- Illustrate mapping of the data to FIBO derivatives ontology for classification of swaps into product categories based on the facts about the instrument. These can be aligned with FpML, FIXML and ISO 20022 taxonomies.
- Confirm that the data being reported about individual IR swaps is complete and accurately represents the terms and conditions of the contract (structural validation).
- Analyze securities, structures and relationships to perform flexible risk queries about such areas as business entity ownership/control, transitive relationships among multiple business entities; concentration and control based on role, cash flow, instrument type, asset class, position or country; and the measure of centrality using the W3C Web Ontology Language (OWL) standard.
- Integrate the ontology into operational environments and generate both reports and visual diagrams to support a range of analytical goals.

We hope that the CPMI-IOSCO Working Group will be interested in seeing the results of the interest rate ontology POC. After evaluation, we're confident that the Working Group will understand the value of its adoption as well as how well it integrates with the requirements capture process defined in the consultative report. Adoption of the derivatives vocabulary by financial industry participants will require mapping from existing technical environments to FIBO. Mapping is not a difficult proposition, but could be significant depending on the complexity of the technical environment of the participants.

We recommend that the CPMI-IOSCO Working Group conduct its own evaluation of FIBO to assess whether and how ontology will contribute to the goals of both derivatives transparency and overall financial stability analysis. We recommend the Working Group participate with the industry and the standards bodies in the final development process. If the result of this evaluation process is positive, we believe it important for CPMI-IOSCO to have an oversight role in the governance of the industry-wide ontology similar to the role that the Regulatory Oversight Committee is performing for the LEI initiative. This form of public sector governance oversight would be significant in helping with both global and industry-wide adoption.