

# RESPONSE ON THE DISCUSSION PAPER FROM THE BANK OF ENGLAND TRANSFORMING DATA COLLECTION FROM THE UK FINANCIAL SECTOR

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**20.05.2020**

***Tej Patel, Chris Probert, Carsten Hahn, Martin Rehker, Eric Levenez***

## **WHO IS CAPCO?**

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Capco is a global business and technology consultancy focused purely on the financial services industry for the past two decades. Our professionals combine innovative thinking with unrivalled industry knowledge to offer our clients consulting expertise, complex technology and package integration, transformation delivery, and managed services, to address their biggest challenges and move their organizations forward.

We specialize in capital markets, wealth & asset management, banking & payment and insurance, underpinned by capability in 1) finance, risk, regulation & compliance, 2) data & technology solutions, 3) digital and 4) business change. We serve our clients from 27 worldwide offices in leading financial centers across the Americas, Europe, and Asia Pacific.

Capco has an established RegTech capability and a wealth of experience in challenges, complexity and cost-drivers for design and implementation of RegTech solutions across all regulatory topic areas.

## **WHY ARE WE RESPONDING?**

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Capco has tracked the continuous increase in regulatory costs and complexity within the financial industry over the last decades and strongly welcomes your initiative, alongside similar initiatives by other regulatory bodies. We believe that following the vision outlined by the Bank of England will lead to a positive disruptive change in processes for regulatory reporting. We want to support this strategic initiative as it will provide many benefits for the entire industry, notably enhanced regulatory data accuracy and consistency, along with a reduction in complexity, implementation timelines and costs.

We also recognise that success in this area is far from guaranteed. From our prior hands-on experience at specific financial institutions and with similar initiatives, and through our long-standing cooperation with standard setters, we believe some key principles (lessons learned) must be adhered to. These principles are bold and require strong commitments from many different parties, including regulators and financial institutions. Aligning with these principles will allow your proposed approach can become a game changer for regulatory reporting and make an important contribution to the competitiveness, transparency and stability of the financial industry.

## GENERAL PRINCIPLES FOR DIGITAL REGULATORY REPORTING

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1. **Provide costs benefits for all involved entities:** Regulatory changes have precipitated a large cost increase over the past decade. The framework<sup>1</sup> for future digital regulatory reporting must be set up in a way to facilitate long-term and sustainable simplification, which in turn reduces the current significant cost of compliance; this holds especially true regarding future regulatory change for all financial market participants, irrespective of their size, type or complexity.
2. **The framework must be applicable and harmonised globally in the long run:** Most financial industries have branches and/or subsidiaries across different jurisdictions. Maintaining the current approach in some and adopting the new framework in others will result in a cost increase rather than a reduction. The BoE can play a major role in helping the global adoption of the solution by coordinating with other regulators (e.g. G7) and promoting regulatory harmonisation at an international level. Large international institutions can also help foster the global adoption of such a project by supporting it globally.
3. **The framework must take current industry status-quo including proprietary architectures into account:** The industry has created standards which are already widely embedded and in use within proprietary software: for example, protocols and norms around BCBS 239 or internal data collections, standards like FpML, ISO20022, or BIRD. For the solution to be broadly adopted, it must complement these efforts and be compatible with them, and not duplicate, bypass or suppress them. This will ensure real additional benefits, leverage past investments and lead adoption to provide additional and tangible cost reduction.
4. **A common regulatory ontology must form the basis of the approach** (see Figure 1): Financial institutions already agree on the need for common data dictionaries. This initiative should go beyond the data definition idea and adopt a common regulatory ontology. This ontology would facilitate commonality in respect of specifications of data elements, the relation between data elements, and regulatory logic. In a machine-readable form this ontology would be flexible, scalable and offer more precision than text, and thus eliminate errors and remove need for “interpretation efforts” by financial institutions, consultants and software providers.
5. **End-to-End digitalization of the Regulatory Reporting Change and Run processes:** Looking at existing initiatives, we note a strong focus on selected aspects: some initiatives focus on data ontology (data dictionary, sometimes rule representation); some initiatives reflect on the target operating model, but often not for all involved entities (regulators, standard setters, financial institutions etc); some initiatives look at architecture and required architecture variants (most initiative aim at a one-size-fits-all approach). We propose that prototyping exercises by BoE should instead include all components of the framework in an end-to-end approach, as otherwise the interplay between these components cannot be tested and refined. That in turn will endanger both benefit realisation and wider acceptance by the industry.

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<sup>1</sup> With framework we refer to the technical solution itself, the way it is integrated in industry architectures as well as the overall target operating model encompassing all participants and run and change process for regulatory reporting.

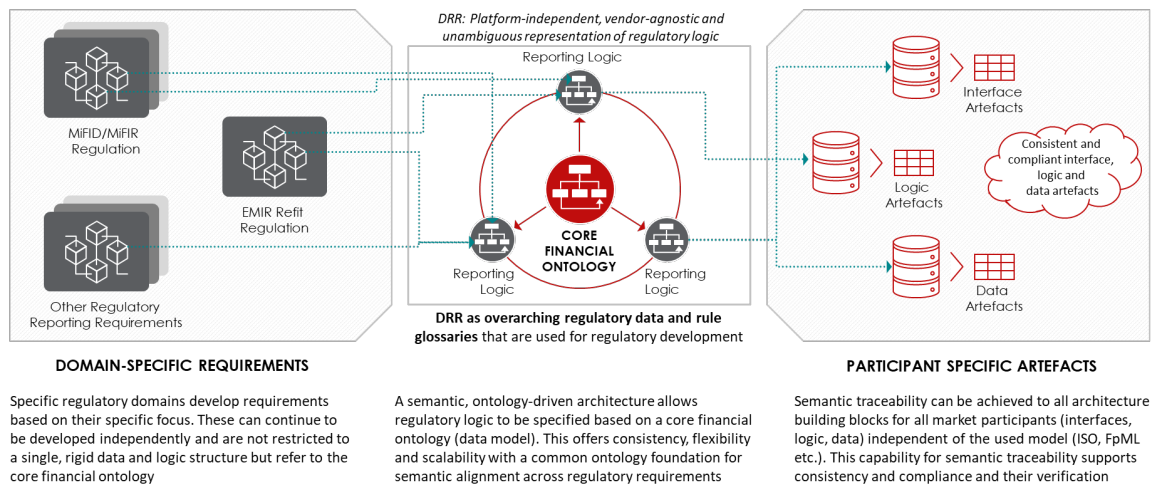


Figure 1 Regulatory financial ontology and interplay with industry standards and regulatory regimes

6. **Ensure open standards and avoid vendor lock-in:** When it comes to regulatory reporting software, we note a high concentration of players, some of whom are practically monopolising certain markets/segments (vendor lock-in). A strong push for open standards for the ontology, the related development platforms and the generated code will instead ensure that a wider and more diverse range of parties can contribute to an easily extensible solution. The industry does not need to take additional costs, vendor lock-ins are avoided, and the approach can be verified independently.
7. **Accountability and responsibility for compliance must remain with the financial institutions:** Openness may also on occasion blur the role and responsibilities of participants. It is important that financial institutions remain accountable, and by extension retain control data which comes out of their systems. The dictionaries, ontology and code may be openly available - but the data itself must be provided by institutions to regulators through a secure process, whilst ensuring completeness, accuracy and timeliness are preserved. Conversely, the regulator will be able to trust the quality of the data as they know it has been subject to proper controls and oversight prior to delivery.
8. **The architecture and migration path should offer flexibility:** The size and complexity of financial institutions tend to drive their choice in architecture, and therefore their migration path to a new paradigm. A large institution may look to build software internally, while smaller ones will use vendor systems or outsource the whole process. Also, some institutions comprise a bank, an insurance company and an asset management firm, all with different regulatory reporting requirements. Consequently, the move to the new paradigm will vary depending on the firm. The proposed platform architecture and operating principles should facilitate different paths to adoption and different final states, ensuring every type of institution can benefit from it. The platform should offer modularity so that components can be used and reused without generating additional costs. Overall the time it takes to get from consultation on reporting to reporting can be shortening, improving oversight of the sector and financial stability.

Based on these principles, we will now answer the questions raised by the Bank of England.

**A. Which of the solutions identified (or combination of solutions) do you see as most attractive to explore further as a long-term goal, and why? Are there other promising options we have not considered?**

We believe that the solutions described and the ideas raised by the BoE in the consultation paper are valid but require further end-to-end prototyping exercises that factor in the aforementioned principles. When providing further detail around the solutions, we recommend taking the following into account:

- As a key element of any further development, the approach needs to reflect the **overall target operating model for change and run processes** for regulatory reporting for all industry participants. The operating model needs to be tested, and a good balance between a federated operating model and centralised technical solutions identified. The approach needs to ensure that complexity in operating models is eliminated for all types of industry participants, and that compliance and security considerations in this operating model are taken into account.
- **Embrace modern, disruptive architecture approaches** for any implementation already at an early stage (exemplary approach Figure 2). For the FISMA, which is currently following a similar approach and aiming for similar solutions, we have sketched an example technical approach which leverages a cloud-based microservice architecture<sup>2</sup> with a very lean operating model to fully eliminate technical complexity for all financial counterparties. Similar ideas should be followed for the current BoE initiative.
- Such a disruptive architecture, incorporating central elements (microservices) and a possible central entity for development, maintenance, microservice provision etc., would offer **high flexibility on all sides when pursuing a ‘pull’ or ‘push’ model**. The central microservice provider would set up APIs to be fed by industry participants or provide query APIs based on the centrally provided solution and code. In turn, the central microservice provider could in turn flow data into APIs set up by regulators, transaction registers etc. or itself provide a query API to the regulator. Our overall architecture vision allows for high flexibility across many different regulatory regimes and/or jurisdictions, and for a piecemeal implementation as soon as the cornerstones of the general modern architecture are defined and set.
- **Collaborate with other regulators** (at a minimum G7 regulators) and standard setting groups for two reasons. Firstly, such collaboration will promote and facilitate harmonisation and a consistent approach across different jurisdictions and regulatory regimes. Secondly, a joint approach by several regulators will make it easier for the industry to adopt this disruptive, game-changing approach to regulatory reporting.

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<sup>2</sup> These microservices could be generated automatically from a digital representation of reporting requirements and encapsulate reporting logic and data persistence in a very modular way, differentiating by regime and jurisdiction where required. Microservices can be deployed via APIs or embedded in entities' architectures. Only such an approach would deliver full modularization, flexibility for industry participants and allow for early cost reductions. It is important to note that the advantages of microservices will only be harnessed if the ontology is properly defined.

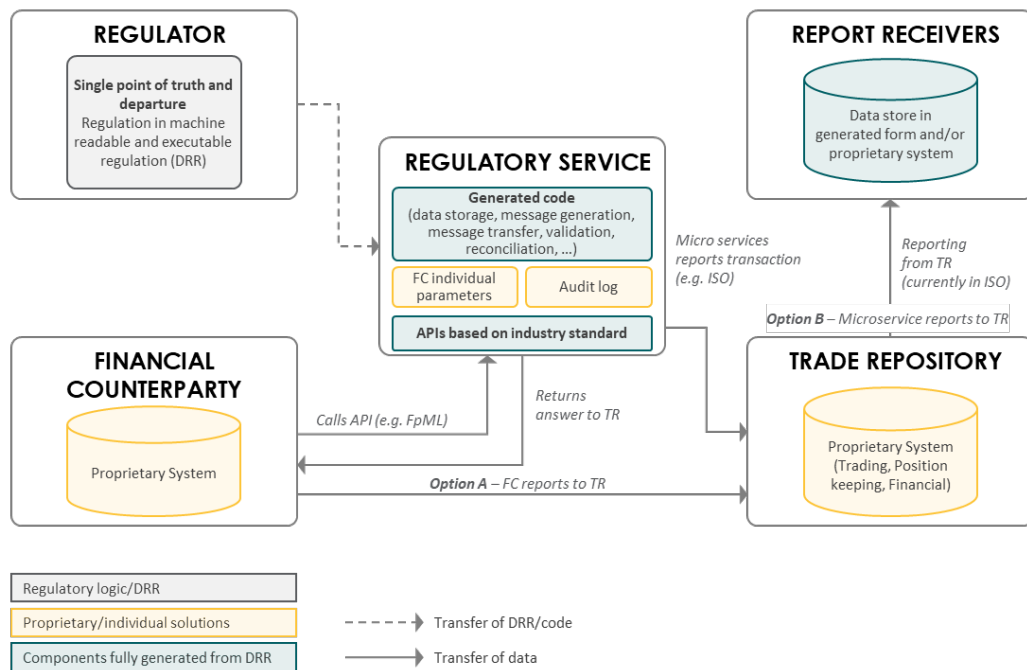


Figure 2 Schematic modern architecture for regulatory reporting (cloud, microservices)

- Introduce a **very flexible but common central ontology as single-point-of-truth for both data and regulatory logic while providing interface layers to the most commonly used industry standards**, e.g. BIRD, ISO20022, ISDA CDM, FpML etc. Only this will allow industry participants to migrate early to the new, disruptive approach for regulatory reporting.

## B. What do you see as the most useful actions to take as interim steps towards such a goal?

We propose to set-up an initial prototype with a modern architecture and a future-proof, cost efficient target operating model in mind. This prototype exercise should take previous initiatives into account, preferably drawing upon prior experience. International collaboration among regulators early would be recommended.

The prototype exercise should be done with a select few industry participants who are open to the described 'disruptive' change and eager to realise benefits around compelling cost reductions early. The prototype exercise should embrace modern architectures (e.g. cloud, microservices) as key components of the larger architecture and generate a verified and future-proof high-level blueprint for this new approach. A business case exercise that also reflects the internal perspectives of financial institutions of varying size and scale needs to be included – these insights could highlight specific challenges or factors that should be considered when designing a roadmap for adoption.

**C. Which sectors / reports should be prioritised, or excluded, in relation to the long-term goal and the interim steps?**

Regarding the goal of realising early benefits from the new approach, we believe that from a mid-term perspective a sector-wide approach would be more beneficial than a report-by-report approach. This would allow selected industry participants to migrate completely earlier and eliminate legacy cost. The initiative will be successful if its value to the industry can be demonstrated quickly and clearly.

From a short-term perspective, BoE could consider aligning with other initiatives running in parallel - for example, the current EMIR Refit piloting planned by FISMA, where the prototyping phase is set to start in July 2020<sup>3</sup>.

**D. In what respects do you consider it most important that the Bank coordinates reforms to data collection with other UK or international authorities?**

We believe this is key. Robust national and international coordination should be focused on two areas:

- Firstly, the overall architecture and operating model should be aligned. e.g. a modern API and microservice-based approach will revolutionise the reporting process, but only if more than one regulator is following that path.
- Secondly, coordination is required for the core data ontology (definitions and rules). Only through an aligned approach will the financial industry realise the expected benefits.

**E. What do you see as the most significant wider benefits to firms or to the financial system from improvements to data collection, beyond cost reduction?**

Many of the wider benefits have already been discussed; the main aspects are:

- Reduction in implementation times for reporting, and an increase in completeness, accuracy and timeliness – all of which promote market stability, detection of market abuse and protecting customers;
- Precise and unambiguous clarity on regulatory requirements for the financial industry, the regulator, consultancy companies and software providers;
- Following on from that, strongly simplified reconciliation between different regulatory regimes and internal reports;
- Improved and strongly simplified collaboration with regulators, e.g. on impact studies for the financial industry;
- Significant reduction in the complexity of architectures for the financial industry, and regulators, as well as for other participants;
- Showing a path to a real- or near-time risk management.

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<sup>3</sup> Tender reference number FISMA/2020/OP/0001, see for example <https://etendering.ted.europa.eu/cft/cft-display.html?cftId=6051>

**F. What are the most significant areas of avoidable cost and challenge associated with the current reporting process, and what is the relative burden associated with different steps and types of report, as set out in the discussion paper?**

As described above, we believe that adopting a ‘big-picture’ perspective will open the way to very disruptive architecture simplifications, slashing costs for the industry overall not by mere percentage points but by an order of magnitude.

The main drivers and challenges for the current reporting processes are:

- Ambiguity around the interpretation of rules and guidelines due to the current method of publishing regulatory reporting obligations;
- The onerous nature of responding to ad-hoc requests by each financial institution;
- IT system complexity (Run and Change) for individual financial institutions. Looking at the number of institutions across the industry we have a scale effect, which leads to high total cost for the industry;
- Reconciliation efforts in the reporting process and between different regulatory reporting regimes for each financial institution.

**G. What non-regulatory developments might have a significant effect on reporting costs and challenges over the next decade (e.g. systems redesigns, use of cloud, AI, market developments)?**

As outlined in our answer to question A, we believe that innovative architectures and target operating models will allow for very innovative, disruptive approaches to regulatory reporting, and strongly reduce complexity and costs while improving quality.

**H. What are your views on the benefits and challenges from seeking to define a common set of data points as the basis for reporting?**

As outlined in previous answers, we see need for a common ontology as a basis for the specification of definitions and rules; this will clarify requirements, eliminate duplicate interpretation and implementation efforts and make reconciliation across regulatory reporting regimes easier.

**I. What additional benefits and challenges would arise from seeking to use industry data standards as the basis for defining reporting requirements? What should the role of regulators be in the development and adoption of such standards?**

We believe, that the question of industry standards needs to be scrutinised in greater detail. Firstly, there is the need to separate existing industry standards used within financial institutions from the common ontology and language that define rules and industry standards for APIs and interfaces. We do not believe that forcing the adoption of one data model (one industry standard) upon the financial institutions will be possible (proprietary systems work) - or that it will be accepted (high costs with no benefit for the institutions). Instead, the ontology approach sets up a central independent ‘truth’ for data definitions and rules, and maps this (incoming and

outgoing) to different industry standards<sup>4</sup>. APIs would then be the technical representation of this mapping.

This approach allows for high flexibility and an early migration to the new approach whilst keeping the advantages of a common ontology.

**J. What are your views on the benefits and challenges of the possible improvements to reporting instructions set out in the paper?**

As outlined above, we see a need for a common ontology as a basis for the specification of definitions and rules; this will clarify requirements, eliminate incorrect interpretation and duplicative implementation efforts and make reconciliation across regulatory reporting regimes easier.

**K. What are your views on the benefits and challenges of the possible changes to architecture and governance set out in the paper – moving to a “pull” model for certain types of data, or moving some functions to a central service provider?**

See our answer to question A. When following a modern, disruptive cloud based microservice architecture, benefits in terms of cost and complexity reduction at financial institutions can be reaped whilst maintaining flexibility for push vs. pull.

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<sup>4</sup> This is for example the approach chosen by the ISDA CDM, which defines a central ontology and a mapping to the most used industry standards.

## **CONTACT & AUTHORS**

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Tej Patel  
77-79 Great Eastern St  
Hackney, London EC2A 3HU  
United Kingdom

Chris Probert  
77-79 Great Eastern St  
Hackney, London EC2A 3HU  
United Kingdom

Carsten Hahn  
Opernplatz 14  
60313 Frankfurt am Main  
Germany

Martin Rehker  
Opernplatz 14  
60313 Frankfurt am Main  
Germany

Eric Levenez  
Opernplatz 14  
60313 Frankfurt am Main  
Germany