Transparency and Traceability for Financial Institutions: MiFID and Record-Keeping

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Abstract: The MiFID directive establishes the general framework for a regulatory regime for financial markets. One of the main concerns in this directive is record-keeping to assure transparency and traceability for financial institutions. In order to fulfil the record-keeping requirements of MiFID, financial institutions have been acquiring record management systems without taking into account if these systems are really efficient, to keep and retrieve records. MoReq is a requirements reference for record management system in order to assure that those systems comply with proper record-keeping. This paper discusses how specifications developed in two different environments can result in the implementation of innovative services and new market opportunities. It makes a comparative analysis of MiFID and MoReq2010, with the purpose of contributing to a common understanding of what might be a system claiming to be at the same time compliant with both of these references.

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1 Introduction

The Markets in Financial Instruments Directive 2004/39/EC (MiFID)\(^1\) released by the European Commission in 2004 and implemented since 2007 establishes the general framework for a regulatory regime for financial markets. The objective of the directive is to assure a normalized regime, between all Member States, that promotes market integration and the cross-border provision of investment and auxiliary services, and facilitate the further consolidation of the European market. To achieve that goal the directive focuses mainly on establishing requirements for the following aspects: market transparency, transaction reporting, record-keeping and admission of financial instruments to trading.

MiFID addresses record-keeping across the whole Directive but with special relevance in two articles. Article 13(6) defines the purpose of record-keeping to ensure compliance with the requirements of the Directive and to assure that all obligations with respect to clients or potential clients are taken. Article 25(2), from the section 3 on market transparency and integrity section, then defines that:

“Member States shall require investment firms to keep at the disposal of competent authority, for at least five years, the relevant data relating to all transactions in financial instruments which they have carried out, whether on own account or on behalf of a client”.

The detailed requirements to comply with the statements in the two articles described are then in the Implementing Directives of MiFID (Commission Regulation (EC) No 1287/06 and Commission Directive 06/03/EC).

As early as 2007, a survey conducted by JWG-IT (JWG-IT, 2007) revealed that the Directive raised a record-keeping problem for 64% of firms since:

“they cannot reconstruct events after the fact in reasonable timeframes or cost levels”.

In February of 2011 the European Capital Markets Institute (ECMI) published a report summarizing a survey that investigates the actual implementation of MiFID during the period 2009-2010, almost two years after it was implemented (Valiante and Assi, 2011). Regarding record-keeping the survey concluded that all relevant respondents have a system of record-keeping in place to comply with the requirements on MiFID. However, are these systems really efficient, to keep and retrieve records? Indeed, according to (London Economics, 2010), issues such as poor data quality (especially with respect to over-the-counter trades), significantly delayed publication of trade information, and double counting, were problems that were frequently mentioned by questioned organisations, all of which contribute to inaccurate information about the true level and price of different transactions. Furthermore, restoration of legacy system backup tapes and use of backed up log files are sometimes solutions implemented to comply with MiFID. However, these methods require difficult and extensive manual work to

\(^1\) http://www.mifidirective.com/
reconstitute key stages of a given transaction. It then increases costs and endanger the ability to retrieve the information in a useful form. Some other solutions, as translating the transactional data into a data warehouse, could be found in organisations, but are time consuming and costly, and not ideal for storing unstructured data and digitalized paper documents such as faxes, emails, SWIFT, and other kinds of records.

In a parallel initiative to MiFID, the DLM Forum\(^1\), has been developing the Model Requirements for Electronic Records Management (Cornwell Management Consultants plc, 2001), a requirements specification for a generic electronic records management system, records management being a synonym of record-keeping. The first version of MoReq was initially published in 2001, an initiative strongly motivated by the European Commission. It quickly reached a dozen translations in national. However, as it has not became a highly motivated reference, an update, MoReq2 (Serco Consulting, 2008), was published in 2008, but the reaction of the community motivated the MoReq Governance Board to engage in the development of a third version, more aligned with the most recent tendencies in Enterprise Architectures and IT governance (requiring more flexibility from the information systems on modularity and interoperability). As a result it has produced the MoReq2010 (DLM Forum, 2011), which was considered stable in June 2011.

MoReq2010 brought a big change in the structure of the requirements from the previous versions, now grouped in modules of functionalities surrounding a reduced set of core requirements. This even implied the change of the meaning of the acronym MoReq, which changed from “Model Requirements for the Management of Electronic Records” to “Modular Requirements for Records Systems”. Those modules are conceived to be easily combined to specify a MoReq compliant Enterprise Record Management System (ERMS) according to the needs of an organization, resulting in multiple possible shapes of ERMS. This new approach also allows evolutionary revision and upgrade of the MoReq2010 reference itself, enabling it to adapt to new innovations and new practices motivated by the technology or by the field of record-keeping.

This paper makes a comparative analysis of MiFID and MoReq2010, with the purpose of contributing to a common understanding of what might be a system claiming to be at the same time compliant with both of these references.

2 MiFID as an opportunity for innovation

When initiating new regulation, governing bodies also indirectly raise both constraints and opportunities for companies. Regulations can have contradictory effects both making innovation more costly and higher time to market, but also making it happen and contributing to preparing users to new products and services. MiFID defines challenges for financial institutions in different domains, to which they dedicated less attention in the past, in particular record-keeping. Although it can be perceived as a new constraint, it has also contributed to the implementation of innovative services in the financial sector.

Regulation

As stated by (Brousseau, 1998), the word regulation could be defined as the implementation of rules by public authorities and government to oversee market activity

\(^{1}\) http://www.dlmforum.eu/, where “DLM” stands for “Document Lifecycle Management”
and the behaviour of private actors in the economy. Moreover, (Brousseau, 1998) defines three different types of regulatory intervention:

- Economic regulation (dealing with pro-competitive or antitrust regulations and regulation of natural monopolies and public utilities);
- Social regulation (dealing with internalisation of externalities and with the solving of goods’ paradoxes);
- Market organising (or institutional or administrative) regulation.

MiFID can be viewed as an administrative regulation because it increases consumer protection in investment services and an economic regulation because it increases competition. As any regulation, MiFID brought some changes. Transparency and record-keeping are two of these changes.

**Innovation**

Changes in the regulatory framework can have both a positive and negative impact on innovation behaviour and outcomes. The direction of the impact depends on a number of factors relating to the way in which new proposals are designed, implemented and enforced. Thus, regulation could stimulate (e.g., on product quality (Jakobsen and Aarset, 2005)) or reduce (Mahdi, Nightingale and Berkhout, 2002) the capacity of organisations to innovate (Blind, 2010) (Swann, 2005). According to (BERR Economics Papers, 2008), an organisation can innovate with several objectivise, as for example:

- Gain a competitive advantage in existing markets;
- Gain access to new emerging markets;
- Comply with new regulatory requirements;
- Mitigate the impact of regulations on their business and reduce compliance costs.

Therefore, regulations could be a significant motivation for innovation. According to (OECD-Eurostat, 2005), we could identify four types of innovation:

- Product innovation: the introduction of a good or service that is new or significantly improved on its characteristics or intended uses, such as significant improvements in technical specifications, components and materials, incorporated software, user friendliness or other functional characteristics;
- Process innovation: the implementation of a new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software;
- Marketing innovation: the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing;
- Organisational innovation: the implementation of a new organisation method in the firm’s business practices, workplace organisation or external relations”.

As suggested by (Valiante and Assi, 2011), MiFID has modified the way in which financial institutions were working, in particular in terms of process and organization:

“[..] respondents’ opinions on MiFID rules are positive, in particular for the more competitive environment that has promoted most of all reductions of trading fees and massive investment in technologies and infrastructure”.
Transparency in MiFID

Two forms of transparency are addressed within MiFID: pre-trade transparency, requiring investors to be provided with access to quote information prior to trading or information on outstanding order flow accumulated in the order book; and post-trade transparency, which requires completed trade information to be publicly disseminated and to provide details of executed trades, including trade time stamps, prices, quantities and execution venues, to be provided as close to real-time as possible. MiFID stipulates that data should be quality assured and publication should take place after a transaction. Each transaction must be made transparent separately and only once.

A number of articles within MiFID deal with transparency: article 27 (Obligation for investment firms to make public firm quotes), article 28 (Post-trade disclosure by investment firms), article 29 (Pre-trade transparency requirements for Multilateral Trading Facilities), article 30 (Post-trade transparency requirements for Multilateral Trading Facilities), article 44 (Pre-trade transparency requirements for regulated markets) and article 45 (Post-trade transparency requirements for regulated markets).

Record-keeping, transparency, and MiFID

Nevertheless, according to (London Economics, 2010), we saw that some issues were raised, such as poor data quality, significantly delayed publication of trade information, and double counting.

According to the article 13(6) of MiFiD, record-keeping is a way to ensure compliance with the requirements of the Directive and to assure that all obligations with respect to clients or potential clients are taken. Article 25(2), from the market transparency and integrity section (section 3), then defines that:

“Member States shall require investment firms to keep at the disposal of competent authority, for at least five years, the relevant data relating to all transactions in financial instruments which they have carried out, whether on own account or on behalf of a client”.

In the same article, MiFID states that:


Apart from that MiFID still make some considerations on records access:

“in case of branches of investment firms, the competent authority of the Member State in which the branch is located shall, without prejudice to the possibility of the competent authority of the home Member State of the investment firm to have direct access to those records”. (Article 12(9))

In this context, record-keeping could be a tool in order to improve transparency and to make it efficient. The transparency and record-keeping requirements in MiFID have also increased the focus on data management.

In the European Commission Directive 2006/73/EC about implementing the MiFID Directive as regards organisational requirements and operating conditions for investment
firms, more record-keeping requirements are addressed especially in the Article 51 of the Record-Keeping section (section 8). This section addresses the need to preserve records for a period of at least 5 years. Furthermore, it adds possible exceptions namely records that set out the respective rights and obligations to the clients that shall be retained for at least the duration of the relationship with the client. Moreover, competent authorities could extend the retention period, if needed. Still on the same article MiFID defines that:

“[competent authorities] must be able to access them readily and to reconstitute each key stage of the processing of each transaction [...] and it must be possible for any corrections or other amendments, and the contents of the record prior to such corrections or amendments, to be easily ascertained”.

However “it must not be possible for the records otherwise to be manipulated or altered”. Article 51(3) writes each Member State shall have a list of minimum records that investment firms are required to keep under MiFID and its implementing measures.

In the Commission Directive 2006/73/EC and in the Commission Regulation No 127/2006 regarding MiFID Directive there are also several references of types of records that should be created and kept as the metadata associated to those records. Based on that, the Committee of European Securities Regulators published a report listing the minimum records that investment firms should have in order to comply with MiFID.

Record-keeping could then be viewed as a way, for a financial organisation, to comply with MiFID, mitigate the impact of MiFID on their business and reduce and keep control over compliance costs. This also involves reengineering processes and implementing new software to comply with the record-keeping constraints. Furthermore, a new actor could be involved in the record-keeping process, which will gain access to a new emerging market: trusted third-party repositories for digital records. Indeed, record-keeping can be outsourced when institutions do not have or are not willing to develop the necessary infrastructure (Proffitt, 2011).

Record-keeping is then viewed in the MiFID context as a process and organisational innovation. Indeed, record-keeping is useful in two different ways: through a better post-trade transparency; and through a better management of the records that have to be kept for at least five years.

Record-keeping could be a piece of the puzzle to provide transparency. If an organisation uses a record-keeping system to comply with MiFID and keep and manage records efficiently for at least five years, this organisation could use this system for post-trade transparency, as a record keeps a better probing value if managed at its creation.

MiFID has emphasized the role of record-keeping in financial institutions. However, MiFID came at a time when more and more actors, in a variety of domains became interested in record-keeping. MiFID implementation then happened as a parallel process. Financial institutions could nevertheless benefit from the standards developed in the record-keeping community to increase the potential for innovation that MiFID brought, as well as to contribute to increase the quality of these records.

3 Record-Keeping according to MoReq

Record-keeping is defined by ISO 15489 standard (ISO, 2001) as:
“the field of management responsible for the efficient and systematic control of the creation, receipt, maintenance, use and disposition of records, including the processes for capturing and maintaining evidence of and information about business activities and transactions in the form of records”.

As such, record-keeping can be seen as the management of the records’ life cycle, from the moment they are created until they are finally disposed. In fact, according to the ISO 15489 standard, the full list of record-keeping processes includes:

- Identifying the period that records should be retain.
- Creating and capturing records.
- Classification of records.
- Storage and handling of records.
- Controlling access to records.
- Tracking records.
- Disposing records.
- Documenting record-keeping process.

In this context, it is also important to define records, which according (ISO, 2001) are:

“information created, received, and maintained as evidence and information by an organization or person, in pursuance of legal obligations or in the transaction of business”.

As such, records are seen as the product of transactions, and transactions form business processes. So, a record is not just a collection of data, but is the consequence or product of an event, and can exist in any format. The essential characteristics of records are authenticity, reliability, integrity and usability.

Organizations can manage their records through a comprehensive Records Management System (RMS) which is defined by (National Archives of Australia, 2004) as:

“an automated system used to manage the creation, use, maintenance and disposal of electronically created records for the purposes of providing evidence of business activities”.

This kind of systems maintains appropriate contextual information (metadata) and links between records to support their value as evidence.

Within this domain, MoReq is a requirements specification for Electronic Records Management System (ERMS) that has been developed by DLM Forum and strongly supported by the European Commission. Its first version was published in 2001 and revised in 2008 (MoReq2). The major changes in the second version were the inclusion of a MoReq-based XML Schema, as also of a test framework and the addition of a “Chapter Zero” section to provide guidance on legislative and regulatory requirements.

Since the publication of MoReq2 the MoReq Governance Board, responsible for monitor and plan new developments for this specification, has received considerable feedback. As a consequence it was decided to undertake two fully public consultation phases as part of the development of a third version, named MoReq2010. MoReq2010 brought a big change in the structure of the requirements from the earlier versions, now grouped in modules of functionalities surrounding a reduced set of core requirements. Those modules are conceived to be easily combined to specify a MoReq2010 compliant ERMS according to the needs of an organization, resulting in multiple possible shapes of
ERMS. This new approach also allows evolutionary revision and upgrade, enabling MoReq2010 to adapt to new innovations and new practices in both the technology and in the field of record-keeping. Figure 1 identifies the new structure of MoReq2010 through services, features and modules. Core services define the core mandatory requirements of the functionalities required by a MoReq2010-Compliant Records Management System (MCRS), while Model Role Services provides a default set of functional requirements for those services. However, “MoReq does not require suppliers to implement these services exactly as they are specified”, but only the core services.

![Diagram of MoReq2010 structure](image)

**Figure 1** The conceptual structure of MoReq2010.

To properly understand MoReq2010 it is also necessary to understand and define the main concepts on, especially the following:

- **Aggregation** is an entity that represents a set of records that are somehow related by, for example, their context, type, characteristics, attributes, etc. They represent one of the levels of classification that a classification scheme can have.

- **Class** is a unit of classification that can be associated with an aggregation or a record. It’s the first level of classification in a classification scheme.

- **Classification scheme** is a representation of business functions, activities and transactions as a set of classes that can be associated with records or aggregations.

- **Contextual metadata** is metadata that is not mandated by MoReq2010 but it is created to support business needs and operations of the organization.

- **System metadata** is metadata that is mandated by MoReq2010 because it is necessary to support all processes and functions of the system.

- **Disposal Hold** is a legal or administrative order preventing the destruction of records.

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1 Figure taken from: [www.dlmforum.eu/index.php?option=com_content&view=article&id=17&Itemid=22](www.dlmforum.eu/index.php?option=com_content&view=article&id=17&Itemid=22)
records.

- **Disposal Schedule** is a schedule representing the lifecycle of the record and detailing the start date of the retention, the retention period, the disposal action and the confirmation period.

- **An Event** is an entity that is generated every time a function takes action and preserves the identification of the function performed, the date of execution, the user that executed it, the entities involved and the metadata that was changed.

The future of MoReq is already defined by a roadmap produced by the DLM-Forum 2009. After the launch of MoReq2010 the next step will be to introduce requirements that will facilitate the adoption of the specification in areas like, for example, medical, pharmaceutical, legal and financial services where applications that solve domain-specific problems are the norm. Regarding financial services this papers presents itself as a first step in an approach between the specification and the financial field.

## 4 Comparing MiFID and MoReq2010

The requirements presented in MiFID and MoReq2010 are quite different, given their fields and objectives. MoReq2010 presents mostly precise functional requirements while MiFID mostly states high-level requirements without detailing how to fulfil those requirements. So in order to compare them it was first necessary to express them in the form of concerns. That approach gives us the common ground necessary to then identify the most relevant requirements in MoReq that assures MiFID requirements.

Analysing the record-keeping requirements in MiFID we identified the concerns they express and listed them in Table 1. Since MoReq2010 has more than four hundred requirements, the approach taken on the specification was a little different: through the definition of the main services of a MCRS (see Figure 1) we classified them using the concerns identified in the Table 1.

The MoReq2010 **User and Group Service** manage users and group authentication in the system. The requirements on this service specify that to manage authentication properly, it is necessary that a MCRS keeps additional and stable data about users and groups including historical information. This includes, among others, tracking changes in metadata and creating user identifiers. This service relates in MiFID to **Access Rights, Metadata and Data Integrity**.

The MoReq2010 **Model Role Service** addresses the requirements for access control in the system. This service is mainly about the definition and association of roles to users that consequently define the functions that the user is allowed to perform in the system. Those roles in most cases represent the hierarchy of people in an organization and can be inherited. This service relates in MiFID to **Access Rights and Data Security**.

Every record in an MCRS must be classified. Classifying a record gives it a business context and consequently a default disposal schedule that manages the retention and eventual disposal of records. Every organisation with an MCRS should have a quite stable classification scheme that normally reflects the inside structure of the organization. The MoReq2010 **Classification Service** is responsible for managing that classification scheme. It relates in MiFID to **Preservation and Record Classification**.
<table>
<thead>
<tr>
<th>Concerns</th>
<th>Rationale</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access Rights</td>
<td>In case of branches of the investment firms, the competent authority should be only able to access the records located in its own home Member State.</td>
<td>Level 1: Article 13(9)</td>
</tr>
<tr>
<td>Preservation</td>
<td>Relevant data should be kept for at least 5 years.</td>
<td>Level 1: Article 25(2)</td>
</tr>
<tr>
<td></td>
<td>Records containing the rights and obligations to the clients shall be retained for at least the duration of the relationship.</td>
<td>Level 2: Article 51(1)</td>
</tr>
<tr>
<td>Metadata</td>
<td>Records shall contain all the information and details of the identity of the client like the name, the name of the person acting on behalf, etc. Different types of records have different mandatory metadata.</td>
<td>Level 2: Article 25(2), Article 8.</td>
</tr>
<tr>
<td>Auditing and Compliance</td>
<td>Records should be auditable so that competent authority can reconstitute each stage of the processing of each transaction. Records should be kept in order to assure that the Financial Institution complies with the requirements of the Directive and with the responsibilities to clients or potential clients. Competent authorities can extend the five years period in exceptional circumstances. Records should be auditable so that competent authority can be assured that the Financial Institution complies with the Directive.</td>
<td>Level 2: Article 51(2), Article 13(6)</td>
</tr>
<tr>
<td>Data Integrity</td>
<td>All possible modifications or adjustments on records should be recorded and the prior contents need to be ascertained.</td>
<td>Level 2: Article 51(2)</td>
</tr>
<tr>
<td>Data Security</td>
<td>Apart from the changes described in the concern above it must not be possible to manipulate or alter records.</td>
<td>Level 2: Article 51(2)</td>
</tr>
<tr>
<td>Record Classification</td>
<td>The competent authority of each Member State shall draw and maintain a list of minimum records investment firms are required to keep. The Committee of European Securities Regulators published a report where it presents a list of minimum records that investment firms should have in order to comply with MiFID</td>
<td>Level 2: Article 51(3)</td>
</tr>
</tbody>
</table>

A MoReq2010 **Record Service** manages records within an MCRS under different levels of aggregation, where each level can support inheritance from its parent through:

- Classification: it can inherit its classification from its parent aggregation.
- Access Controls: it can inherit the access control list from its parent.
- Metadata: a user must be able to search for aggregations and records based on the metadata of its parents.

This service relates in MiFID to **Record Classification**.

The MoReq2010 **Model Metadata Service** manages the metadata of the entities of the system by allowing the definition of metadata templates. Those templates define the system metadata and additional optional metadata know as contextual metadata. This service relates in MiFID to **Metadata**.

The MoReq2010 **Disposal Scheduling Service** manages the disposal schedules of the records’ lifecycle, which can be defined as:

- Retain permanently.
- Review at the end of the retention period.
- Transfer at the end of the retention period.
- Destroy at the end of the retention period.
This service relates in MiFID to Preservation.
A disposal hold is a legal or administrative order that interrupts the normal disposal of a process and prevents the destruction of selected records. This process is often used by authorised users for auditing the MCRS. After the auditing is over the disposal hold can be “lift” and the disposal schedules of the records will continue as normal. The MoReq2010 Disposal Holding Service is responsible for managing the disposal holds of the system. It relates to in MiFID Auditing and Compliance. The MoReq2010 Search and Reporting Service requirements define that every record should have an engine that allows a search into its content. Regarding the system it should have a configurable global search and must allow mainly two types of reports: detailed reports and summary reports. This service is a support service to the other services so we could say that it is related to all the concerns identified in the services. The MoReq2010 Export Service have the requirements for exporting, an operation by which entities in the system can be described in a common XML data format in order to be preserved and/or transferred to another MCRS. This service relates in MiFID to Preservation.

5 On a MiFID-Compliant Record Management System
Having both MiFID and MoReq2010 expressed in terms of concerns becomes possible to define how a Record Management System should be configured to be also a MiFID-Compliant Records System. Namely:
- It should have aggregations, classes and components in order to properly classify and manage the minimum list of records that an investment firm is required to have (Article 51(3)) and be able to classify types of records with associated templates that consequently will define system and contextual metadata (Article 25(2)).
- The system should allow the definition of roles in users or group users to assure that only authorised users and authorised authorities access records (Article 13(9) and 51(2)) and to enable recording of events to assure that all the modifications or adjustments in a record can be ascertained (Article 51(2)).
- Disposal schedules associated with the classification system will then assure that the records are preserved for at least 5 years or during the duration of the relationship with a client (Article 25(2) and 51(2)).
- Regard auditing and compliance the system needs to have disposal holds that allows authorised users to inspect and extend default retention schedules (Article 13(6) and 51(2)).
- All functions should generate events that record all actions performed to assure that competent authorities can reconstitute each stage of a transaction (Article 51(2)).
- To support and help the management of all functions and finding of all records the system should also have a search and report service.

6 Conclusions
This paper discusses how a Record Management System should be defined in order to comply with the MiFID record-keeping requirements. As we could see in this article MiFID has already contributed to innovation in the financial sector. However MoReq2010 still aims to address it, reason why it has been built to be able to
dynamically adapt to new requirements of a particular community through a mechanism of dynamic standard adaption, which does not require going through a very long and heavy revision process. This paper is therefore important to demonstrate how MoReq2010 can be related to existing regulations.

On the other hand, the current status of the implementation of MiFID opens interesting perspectives in order to overcome the shortcomings of the current implementations, to improve quality of records. How can standards and regulations result in innovation has been well studied in particular domains however, in the current context, the objective would be to prevent a particular domain from developing a new ad hoc standard when another domain has a similar well accepted standard and extend the range of concerns that are taken into consideration in a cross-domain standard.

References and Notes

BERR Economics Papers, 2008. Regulation and innovation: evidence and policy implications, BERR.