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for
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CASE STUDY: XBRL IMPLEMENTATION FOR INDONESIA'S ISLAMIC BANKING REGULATORY REPORTING SYSTEM

The Experience of the Central Bank of Indonesia

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THE BUSINESS REPORTING STANDARD

ABSTRACT

This paper describes the journey of Bank Indonesia as the first organisation in the country to implement XBRL, beginning in 2010 with the assessment of XBRL as a reporting platform, through the roll out of the integrated XBRL-based reporting systems project (LSMK) and up until the time of full implementation of Islamic Banking Monthly Reporting as a pilot project in 2014. During this period, Bank Indonesia experienced a structural change with the migration of certain bank supervisory functions to the Financial Services Authority in January 2014. This paper, however, still covers bank Indonesia's banking supervisory responsibilities that were in place at that time.

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OPPORTUNITIES AND CHALLENGES

Bank Indonesia (BI) holds several roles as monetary authority and supervisory authority for the banking system and payment system. Those roles have driven BI to set regulatory reporting systems to support monetary and financial system stability policies. The scale of the reporting systems can be reflected from the financial information gathered periodically (daily, weekly, monthly, and annually) within 11 banking regulatory reporting systems from filers across the nation, comprised of the Conventional and Islamic banking industry. The conventional banking sector consist of 120 banks with 14,510 branches, 30 Islamic commercial banks or Islamic business units that have 600 branches, and 1,683 rural banks that have 4,122 branches. The Islamic banking sector consists of 130 Sharia business units, and 11 Islamic banks with 464 branches. In support of regulatory functions in the monetary, banking supervision, macro surveillance and payment systems, data from the reporting systems are distributed internally across BI's 27 departments, 41 local representative offices and 4 overseas representative offices. In addition, the reporting systems also need to comply with several standards, such as IFRS, BASEL, SNA, Islamic Principle, and others.

The complexity of the existing reporting systems in 2010 brought to light the following issues:

- Inefficient reporting processes due to reporting systems consisting of 445 forms managed by seven business units.
- Weaknesses in data management due to the non-standard data definition, complex business rules and ambiguous taxonomy.
- Inflexible modification of accommodating data, business rules and accounting principle changes.
- The significant time and costs required to improve reporting processes.

OBJECTIVES

In response to these issues, BI planned to implement an XBRL-based Integrated Reporting Systems (LSMK), creating a multi-year roadmap for the project. The first stage in the roadmap was an Islamic banking reporting system as the pilot project scheduled to run in 2014 after a year of parallel testing. The plan was executed by business transformation and Information Technology (IT) development.

BUSINESS DRIVERS

At the time, several new information requirements were being adopted by the Islamic Banking industry in response to a new Indonesian Islamic GAAP, updates to Islamic Banking products and changes supervisory requirements, as well as monetary and payment system statistics regulations.

As banking supervisory functions were in the process of being shifted to a new regulatory agency called the Financial Services Authority (FSA-OJK) in 2014, the LSMK was designed to fulfil both Bank Indonesia and OJK information requirements. Coordination between both regulators therefore became a priority.

IT DRIVERS

The project methodology was influenced by the requirements for adhering to international standards and best practices for financial reporting. As a standard that had been adopted globally by numerous central banks and regulators, but also could support an integrated, reliable, and stable reporting system, XBRL was identified as the best tool to accomplish BI's goals.

DESCRIPTION OF ACTIONS TAKEN

PLANNING

Challenges of starting afresh in a new region

Looking back to the planning phase of the LSMK project, there were several challenges related to implementing an XBRL-based reporting system. Firstly, even though XBRL has been widely applied worldwide, it was still considered to be a breakthrough technology in South East Asia, meaning there were a limited number of resources available. Secondly, there was limited awareness about XML-based data exchange standard in the organization, the country and the region. Thirdly, there was an absence of reference materials for developing an XBRL taxonomy for Islamic Banking.

Learning Process

For those reasons, it was important for BI to build internal capacity and competency in XBRL to reduce reliance on external resources for completion of the project. The learning process was intensively conducted before the project's kick-off through the following activities:

- XBRL training performed by a competent consulting firm
- Held an XBRL taxonomy development workshop along with a consulting firm to assess any knowledge gaps and set a strategy to develop the taxonomy in-house.
- Developed XBRL prototype based on relevant business cases.
- Set benchmarking goals relative to other central banks.
- Formulated teams to focus on business and IT requirements and pursued some studies related to National Bank of Belgium and National Bank of Poland.

These activities revealed some important insights for BI. They confirmed XBRL as the openly licensed international standard and comprehensive business reporting format that fit with BI's requirements.

BI also recognised the need to have a "grand-design" for the XBRL-based reporting systems, which included a roadmap, strategy, application, and information architecture.

In 2011, a consulting firm was selected to formulate the grand-design.

During the grand-design formulation, it was identified that the integration of all 11 reporting systems required was a complex and large project. The decision was therefore made to start the implementation through a pilot project. The Islamic Banking Monthly Reporting Systems was chosen as the pilot project, as the number of filers and business rule complexity were considered manageable.

IMPLEMENTATION

XBRL Adoption Approaches

Based on the examination of other implementations, XBRL-based programs could be adopted filers with three different approaches: Conversion, Convergence and Internalisation.

- Conversion
  Filers send data in non-XBRL formats to the XBRL-based reporting system. The system will convert the data into XBRL.
- Convergence
  Filers validate and send the XBRL instance document to the XBRL-based reporting system.
- Internalisation
  Filers implement XBRL-based systems internally not only for regulatory reporting purposes, but also for their internal use.

Convergence and Internalisation approaches would not only give benefit to the regulator, but also to the filers as well, because XBRL methodology can be utilized for external and internal reporting purposes. Considering the future use of XBRL by other regulators in Indonesia and the readiness of the filers, BI decided to mandate the Convergence approach.

In addition to the filing method, concern was given to the reduction of redundancy and complexity of the filer's reporting processes. The data capturing need to comply with many standards and principles, including Islamic Principle, BASEL II, IFRS, SNA2008, ISO 20022, etc. It was therefore decided that data submissions would be done granularly (in-detail manner) so that data capturing could be processed through the reporting system.

During the implementation period, engagement with internal and external stakeholders was important. Intensive meetings with internal stakeholder departments such as IT,

statistic, payment systems, banking supervisory, etc. were held to increase their awareness about the project and XBRL methodology. For external stakeholders, awareness and education programs were held for filers so that they would be willing to be a part in the testing phase of the project. The education program also provided the filers opportunity to prepare for the investment necessary to begin submitting XBRL data. The project has also made other regulators in the country aware about XBRL, which has triggered some open discussion and knowledge sharing among regulators who have developed or will start to develop XBRL-based reporting systems.

Proof of Concept

In order to estimate the complexity of the LSMK project, a proof of concept (PoC) of XBRL-based reporting systems using historical data was applied. The PoC consisted of validation within a group of information and validation between forms (existing reporting systems were designed using a form-based approach). The sample forms used were balance sheets and details of loans.

At that time, there was a lack of resources to perform the PoC, such as an XBRL specification for inter-form validation and XBRL validator tools for large-instance documents [1]. The absence of an XBRL specification for inter-forms validation led to a decision to use XPath within the XBRL taxonomy to address inter-forms validation.

Meanwhile, a large-instance project such as LSMK cannot be completed without an XBRL validator. This made the search for a suitable XBRL validator through the PoC mandatory. The PoC also reflected the support of XBRL vendors and communities for XBRL implementation. The PoC consisted of the following technical steps to assess the candidate XBRL validators:

[1] SAITO, K., & KOIZUMI, M. (2013, December 1). PERFORMANCE TESTING PROCESS FOR LARGE XBRL INSTANCE PROCESSING. Retrieved July 31, 2015, from https://www.xbrl.org/wp-content/uploads/2014/08/lrg_instance_proc_indonesia.pdf

- Provided instance document samples that represented each type of taxonomy model (tuple and dimensional model) with total size 14 GB.
- Set the criteria to select the best XBRL validator when the tool was capable to validate those instance document samples within maximum duration (one hour).
- Invited 16 XBRL validator vendors to participate in the PoC. At the beginning, PoC resulted in the fact that all vendors required more than 6 hours to fulfil the task. For next 5 cycles, PoC resulted in six vendors that fulfil the task within 2 hours. The sixth cycle has finally resulted in four vendors that fits the requirement.
- Started the process of procurement for shortlisted vendors so that the XBRL validator could be utilized within the time constraint of the project.

RESULTS

The journey has not been an easy one. The implementation phase took one year to complete, meaning the pilot project was fully operational in 2014. Challenges during the planning and implementation, as well as during the post-implementation evaluation resulted in several lessons learned:

- In the absence of reference materials for a specific industry, regulators need to develop the taxonomy from scratch, making it crucial to build internal competencies with assistance from experienced consulting firm(s).
- Proof of concept is a vital process in the planning phase because of the granular nature of structured data reporting. Increases in the amount of data captured, makes it important for every stakeholder to understand the process and implications of the filing program and set a strategy to achieve efficiency. Another important lesson from the PoC process was the need for strong support from the XBRL community in developing, improving and inventing solutions for XBRL business cases.
- The Convergence approach had significant impact for BI (the regulator), filers and XBRL vendors alike.

Lessons for Regulators

Success hinges in part on the regulator committing to awareness and education programs such as training, workshops, coordination meetings and prototyping to assure every related party will have sufficient competency in XBRL and fully understands the process. Since the key success metric is often filers providing a valid instance document, it is recommended that the regulator undertake three main activities to educate filers:

1) Providing learning modules designed to be simple and useful for filers.

2) Inviting filers to participate in training programs to learn how to provide training sessions within their own organisations.

3) Providing a prototype with a programming code of the instance document creator for further development by filers.

Lessons for Filers

Filers can prepare themselves for an XBRL implementation in two ways. Firstly, by hiring external resources (consulting firms). This option has a trade-off in higher costs which increases the risk of resistance from filers.

Secondly, through in-house development of competencies. It would be preferable for the regulator to provide necessary resources for filers to undertake such an initiative through the provision of training or endorsement of outside training providers.

Lessons for XBRL Vendors

With improved capacity and competency of filers, vendors can be engaged for specific requirements such as XBRL validation. The local XBRL market will develop more quickly if the regulator supports the partnership of global XBRL software with local resellers. BI has undertaken this route to support the next phase of the LSMK project.

FUTURE DEVELOPMENTS

BI has resolved to complete the next phase of the LSMK project gradually, using the lessons learned from the pilot project as the main point of reference. Future implementations will require coordination of two authorities. The banking supervisory function has been performed by OJK since 2014, while BI is still responsible for monetary and financial systems stability.

This planned coordination of the two regulators has led to consideration of an XBRL National Jurisdiction within the global consortium to focus on future XBRL adoption in Indonesia. With the growing intention from other regulators to adopt XBRL, the idea of a National Jurisdiction is intended to solve the need to apply a single taxonomy in the country.

The next priority will be the implementation of data management, since the next logical step is to accommodate utilisation of data to support decision making within the organisation. Effective data management techniques are required to assure data quality through a streamlined cycle from capturing, analysing, disseminating, through to utilisation. As part of the Enterprise Architecture (EA), data management tools have been designed to provide data handling for output of XBRL-based reporting systems as well as to support the business intelligence application.

Regarding data management implementation, the following aspects are planned for the medium-term:

- Adoption of data management framework

  In the data management framework, the grand-design of XBRL implementation is set to be one of the artefacts in the Information Architecture – an integral part of EA.

- Implementation of a data management system

  The data management system is expected to align with the XBRL implementation to assure and maintain data quality. The system requires an enterprise data dictionary, which includes the standardised data definitions that

will be utilised by all functions in the organisation. The system is also expected to have high flexibility, availability and performance to support business changes.

- Benchmarking

  In order to understand the possibility of using data warehousing and business intelligence for managing various forms of data such as XBRL, relational or unstructured content, several benchmarks are required through onsite study programs and Proof of Concept activities.

- Data Analytics Processing

  BI visited the German Bundesbank and the Bermuda Monetary Authority to learn about the correlation between XBRL-based data capturing and data analytics processing. The lessons learned from these visits are being used to reflect the opportunity and challenges of other regulators' experience into BI's environment. Based on those lessons, BI will continue the implementation of the next phase of the XBRL-based project with a consideration of XBRL-based analytics processing.

- Proof of Concept

  BI has planed to perform PoC activities in order to learn about metadata, datamart repositories, and business intelligence. Firstly, a metadata PoC is required to search for tools to generate data warehouse and ETL from metadata. The purpose of these tools is to achieve flexibility and governance in information systems. Secondly, a datamart repository and data warehouse PoC is required to seek the suitable repository for various types of data. Thirdly, a Business Intelegence PoC is required to search for tools that perform analytics from data sources (repository) with various types of data.