XBRL for e-filing in Macedonia

Overview

There has been a growing need felt on the part of both, the filers of information and the regulators to enhance efficiency and timeliness in the conventional process of business registration and reporting. The process is very cumbersome with either a lot of paper work, electronic files (like Portable Document Format) or migration of data into the regulators' system. Thus a growing trend towards standardization of data exchange and storage by electronic means has been seen worldwide. Consequently, many XML based standards like SWIFT have evolved. One such standard, eXtensible Business Reporting Language (XBRL) has captured the interest of regulators. XBRL has evolved from XML (extensible mark-up language) which is based on the concept of meta-data.

XBRL is thus gaining popularity amongst regulatory bodies, financial institutions, corporations and statistical organizations across the world, primarily because of the ease it offers in business reporting. The process of data storage, migration and business reporting can be automated by companies and other producers of financial data and business reports by using XBRL. For example, data from different company divisions with different accounting systems can be assembled quickly, cheaply, and efficiently if the sources of information have been upgraded to using XBRL. The Republic of Macedonia, situated in the central Balkan Peninsula in Southeastern Europe adopted XBRL for electronification of the process of companies' registration in the country.

Project Description

The project was undertaken by the Ministry of Economy of Macedonia, for providing a comprehensive integrated esolution to the business registration and administration needs of the country.

This was owing to the global trend towards elimination of paper work in relation to registration processes. The Macedonian government sought an e-registration solution for the reduction of paper usage, thereby benefiting ecological best practices of the country.

A feasibility study funded by the World Bank was undertaken to evaluate the implementation methodology and the approach for the e-registration project. Based on the results of the study, full system for business registries was developed.

White Paper

The Ministry of Economy of the Republic of Macedonia, serves as the implementation agency for the project, known as the One Stop Shop System (OSS), which is in the second stage of development for registration of companies and other legal entities.

One Stop Shop System (OSS) is administered and run by the Central Register of Republic of Macedonia (CRRM). CRRM is an independent, self-financed government agency established by a separate law.

It is the largest and the most complex system administered within the Central Register infrastructure for the registration of companies and other legal entities. The One Stop Shop for registration of companies and other legal entities was put in real operation in January 2006. Due to the high priority of reforms to be introduced and enforced by OSS, an intermediate solution had to be developed for electronic collection of company registration.

The One Stop Shop System (OSS) has three components
Component 1- e-Filing OSS and OSS partner integration
Component 2 - e- Bankruptcy and e-liquidation and register of disqualified entities
Component 3 - e-Filing pledge and leasing

The Ministry of Economy was thus looking for service providers that could assist the Central Register in further development of that solution, or suggest integration or data conversion with the new solutions to be developed under the project. The ministry commissioned the consortium of IRIS Business Services of India and Enterprise Registry Solutions of Ireland for reforming component 1 of the OSS project that would involve e-filing and partner integration, also known as Business Environment Reform and Institutional Strengthening Project (BERIS), through XBRL solution.

Challenges

The major challenge was to develop an application that would take input data in a particular format, and convert it into XBRL format as output, which will then be transferred to various CRRM partners so that an automated communication channel is established between CRRM and its partners.

The application should be able to establish a communication channel for interoperability between CRRM system and any other future users of CRRM data. It should also offer a convenient way for CRRM partners to view the transferred XBRL data in a report format using MS Excel interface.

CRRM system does not have any standard communication channel to exchange data with it registered partners. Hence one of the major endeavors was to establish a channel which would allow interoperability between them in worldwide accepted standard XBRL format, and which would get integrated with the component 1 of the OSS phase 2, project.

Solution

The IRIS transformation engine was deployed to cover the process of sending data from the OSS database to a partner's database.

It is a highly sophisticated tool which is built on the XBRL standard as an underlying framework. It can be used for converting data from XBRL instance document to a database and vice versa. The transformation engine works across a vast range of data inputs. Data could be in databases or XML files or CSV files.

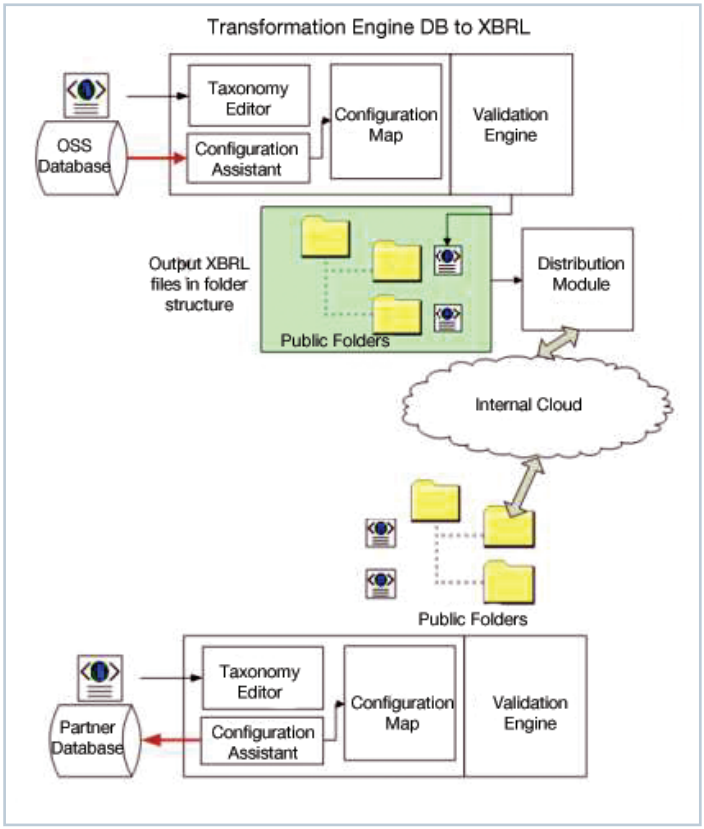
Functional specifications

The transformation engine is able to read a database and create an instance document. It can also read an XBRL file and populate a database. The XBRL file structure created would be based on the XBRL 2.1 specifications.

- The transformation engine can be configured to create complete XBRL data dumps, incremental dumps, date wise periodic dumps.
- The transformation engine can also be used to create dumps for part of the data. This would be based on the taxonomy data elements.
- The administrator could also specify folders in which the data dumps should be sent.

It has a distribution engine which can push data through Secure Copy Protocol (SCP) or Secure File Transfer Protocol to different servers to configure host servers for pushing

Schematic Diagram



data. The configuration would be done for different folders and different servers. One could also specify the time for initiating the transfer (real time, end of day or defined period during the day).

Taxonomy Editor

The taxonomy editor tool is used to edit or change the taxonomy elements. The database often changes and new elements get added all the time or some of the old elements become irrelevant. The taxonomy editor can be used to make changes to deal with the change in reporting environment. The editor is an easy to use tool and an authorized user can easily add/edit and update the taxonomy.

Data Validator

The data validator runs a series of validation checks on the data to check for consistency with the taxonomy rules. This ensures that data flowing out of the system is of high quality. The validation checks would be to ensure that all data adheres to the XBRL rules. The errors as and when detected would be thrown to the administrative officers' dashboard. Additional business rules could also be added on the XBRL data elements. These would include checks for:

- **Mandatory items:** All items which need to be there
- **Dates:** This includes checking for the right format for dates. Errors in date formats have been identified as one of the biggest source of errors while sharing data between different systems.

Administrative Modules

These modules allow creation of users and management of users in the system. The authorization modules could be linked to work using LDAP.

Dashboard

A dashboard is available which can be used to check the status of different components in the system. It could also be used to trigger the transformation engine to create an XBRL instance document or dump data in a database manually. It will also bring out all errors in the submission process.

Configuration Assistant

The configuration assistant forms the heart of the transformation engine. As the name suggests, it a configuration utility which allows an administrator to map the data in a database to an XBRL taxonomy. Every time the database changes, the mapping can be revised using the configuration assistant.

Data Extraction

The transformation engine can also be used to extract partial data from a database and send it across. The business logic layer allows extracting the required data from the registrar's database. A dashboard is available, where the user can select the required records based on:

- Filter based on max and min values of select columns
- Values of records which need to be excluded
- Date range
- Predefined reports (records with missing or erroneous database, expired or about to expire subscriptions etc.)

Backend working

The transformation engine is designed to run in a batch mode. However it can be also run in a user mode to create special files or to create the files for transformation in a manual mode.

Taxonomy development

A team of domain expert and IT professionals at IRIS were deployed to develop the taxonomy. It catered to the XBRL 2.1 and dimensional specifications. The taxonomy architecture

is in line with the existing database in place. The inter-relationship amongst elements has been defined in such a way that all tables present in the database replicate the relationship groupings in the taxonomy. In all there are 70 such relationship groups.

The taxonomy has been designed primarily for business disclosures. Hence, in addition to the normal data types (i.e. string and monetary values), other numerical data types are also defined.

For example 'unsignedShortItemType' is defined for the item for which small numerical value is expected, whereas 'unsignedLongItemType' is defined for the item having large numerical values. In all, there are eight such data types defined in the taxonomy. The analysis of elements that are present in the taxonomy is as follows:

Particulars	Count
Elements	448
Primary elements	308
Dimensions	70
Hypercubes	70

Performance Delivered

The IRIS consortium deployed a team of domain experts and IT professional for implementation of XBRL technology for the component 1 of OSS 2 project. The IRIS XBRL engine got well-integrated with the component 1 of the OSS 2 systems, in facilitating the transmission of data between CRRM and its partners in the standard XBRL format.

The IRIS transformation engine has automated the data exchange in standard XBRL format between CRRM partners (EARM and Health Fund Agencies). It has been successful in setting up a channel of communication for interoperability between CRRM system and its partners, which include Public Revenue Office, Commercial Banks represented through the Clearing House, Bureau of Statistics, Customs Office, the Pension Fund, and Employment Agency. However, the Health Fund (HF) is yet to establish communication link with CRRM.

About IRIS

IRIS Business Services Limited is a leading structured data solutions company with global presence in regulatory and compliance reporting software. The firm is uniquely positioned with offerings across the spectrum of creation, management and use of structured data in the realm of business and financial reporting. IRIS serves a client base that includes regulators in over a dozen countries around the world, leading banks, financial market intermediaries, consulting firms, financial printers as well as large and small enterprises. Our partner network includes large accounting firms, system integrators and specialized software and consulting firms that use IRIS' products and expertise to enhance their offerings to end clients.
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