

THE COMPUTERWORLD HONORS PROGRAM

CASE STUDY

LOCATION:
Arlington, Virginia, United States

YEAR:
2006

STATUS:
Laureate

CATEGORY:
Finance, Insurance and Real Estate

NOMINATING COMPANY:
Booz Allen Hamilton Inc.

ORGANIZATION:

Federal Deposit Insurance Corporation (FDIC)/The Federal Financial Institution Examination Council (FFIEC)

PROJECT NAME:

Call Report Modernization

Summary

The Call Report Modernization Project of the Federal Financial Institutions Examination Council (FFIEC) marks the first large-scale use in the United States – and the largest use worldwide -- of a new cross-industry standard for representing financial data. Use of this standard – eXtensible Business Reporting Language (XBRL) – is giving the bank regulatory agencies more timely access to data on the financial health of approximately 8,000 financial institutions (representing a combined total of almost \$9.5 trillion in assets) that report to them. This uniform filing methodology has resulted in a significant drop in errors in the submissions of data. Prior to the launch of the Call Report Modernization Project and the adoption of XBRL as the reporting language standard, it was not uncommon for initial data submissions to contain logical mathematical errors and to be returned to the filing institutions for correction.

The regulators from the three FFIEC Call Report agencies (the Federal Deposit Insurance Corporation, the Federal Reserve Board, and the Office of the Comptroller of the Currency) benefit from the Call Report Modernization initiative in a number of ways. The collection and management of data has been streamlined, and the higher quality of the data when it is initially submitted means that it is available for analysis much more quickly. This, in turn, gives regulators a timelier look into the operations and health of the institutions they regulate, supervise or insure – which ultimately benefits the depositors who have accounts with those institutions.

Introductory Overview

All Federal Deposit Insurance Corporation (FDIC)-insured commercial and savings banks and other non-deposit institutions must submit quarterly data that allow the regulating agencies to assess their financial health and risk profiles. This information, known as Call Reports, is used by FFIEC member agencies, other regulators, state banking agencies, and the general public for a number of purposes. The Call Report data, which consists of more than 2,000 data elements, is submitted electronically through software purchased from vendors, and typically must conform to over 2,000 rules that ensure data validity and accuracy. These rules and edits



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are outlined in almost 400 pages of instructions, which are updated by the FFIEC Call Report agencies on a quarterly basis.

Prior to the Call Report Modernization Project, both the reporting process and the validation of submitted data were plagued by a variety of inefficiencies. On the reporting end, the quarterly updates of reporting rules and edits were distributed in formats that required a significant amount of manual manipulation of information by each software vendor and reporting financial institution. This process contributed to a large number of inaccuracies in banks' initial submissions, with a full third of them tripping red flags that indicated possible inaccuracies or discrepancies in data.

Each of these red flags required analysts at the FFIEC Call Report agencies to contact individual banks by phone, e-mail, or fax to resolve each problem. Checking an average of 13,000 – 14,000 reporting irregularities each quarter was extremely time-consuming for both the agency analysts and the reporting banks. Moreover, since each agency maintained a set of data for processing and other downstream uses, the agencies had to compare the data contained in these disparate systems to ensure the data were in sync and to reconcile any differences. In addition to further delaying the release of validated data to users, this setup meant that massive data sets were residing in separate mainframes, using different data-quality standards and data-processing systems.

For these and many other reasons, the FFIEC in 2003 made a bold strategic decision to build a data collection and validation system based on eXtensible Business Reporting Language, or XBRL, a business reporting language which experts predicted would produce highly accurate, transmittable, and researchable financial data. Until this time, the benefits of building an XBRL-based system had remained largely theoretical.

In June 2003, a \$39 million contract was awarded to Unisys Corporation, which began working with the federal agencies, outside vendors, and bank representatives to develop the Central Data Repository (CDR). The system was launched on October 1, 2005, when the banks were required to submit their third quarter 2005 Call Report data to the new CDR using XBRL as the reporting language.

Along with the change in the data processing and storage systems, a new business model was implemented. The new business model requires reporting institutions to submit data that do not contain mathematical errors and to explain any apparent anomalies in the data. If these conditions are satisfied, the data are accepted, and the agencies can immediately begin to analyze the data. If these conditions are not satisfied, the data are rejected, and the institution must resubmit the data.

Initial results confirmed the FFIEC experts' prediction regarding the effectiveness of the business process change and the use of XBRL as a reporting language. Under the new process 95 percent of data received met CDR requirements. These results compare to the legacy process where only 66 percent of the data submissions were clean when received and banks did not have the capability to provide notes when submitting data. In addition, the use of the CDR resulted in significantly earlier access to data. Validated data began to be available to users as soon as two days after the calendar end of the quarter, rather than weeks later.

The FFIEC's Call Report Modernization Project demonstrates how independent federal agencies and IT service providers with common business objectives can work together to successfully



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address important issues of data transparency, quality, and timeliness. By assuming a leadership role through implementation of the Call Report Modernization Project, the FFIEC Call Report agencies serve as a role model for other organizations that collect and share data.

Benefits

Through an open, collaborative approach to business process change, the FFIEC and its stakeholders have succeeded in achieving the improvements sought. XBRL helped the FFIEC Call Report Agencies achieve both measurable improvements and qualitative enhancements to its Call Report process. The XBRL implementation has proven to be viable as an ongoing solution and has increased productivity, efficiency, accuracy and quality.

The results of Call Report Modernization project using XBRL include:

1. CLEANER DATA

Requirements regarding data accuracy are better documented and more easily met. In fact, under the new process 95 percent of data received met CDR requirements. These results compare to the legacy process where only 66 percent of the data submissions were clean when received and banks did not have the capability to provide notes when submitting data.

2. MORE ACCURATE DATA

Because there is a requirement that the data logically add up, 100 percent of mathematical relationships sum correctly, and no follow-up is required. The results under the new process are that 100 percent of data received meet mathematical requirements, compared to results under the legacy process, when only 70 percent of data received met requirements.

3. FASTER DATA INFLOW

The agencies received the first data submission through the CDR at 4 p.m. on October 1, 2005, less than one day after the calendar quarter end. The legacy process did not allow for the receipt of data in as timely a manner.

4. INCREASED PRODUCTIVITY

Staff can take higher case loads, perform higher level analysis, and are more efficient, which ultimately saves the agencies money. Staff no longer needs to check for mathematical accuracy, which is enforced by the system, and can focus greater attention on the qualitative explanations for data anomalies that banks send in with the submission.

5. FASTER DATA ACCESS

The agencies now receive clean data sooner, which allows agency analysts and downstream systems to make use of the data sooner. The new process enables agencies to receive data from reporting institutions almost as quickly as they submit it, which can enable quicker release of the data to the public. Under the old process, the data could not be made public until at least several days after receipt due to delays in the relay of data to the Call Report agencies and the need to verify the data for anomalies.

6. GREATER EFFICIENCY

Staff is now able to complete assignments sooner, and some banks have already said that the new process makes their preparation processes more efficient because they are addressing most

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of the apparent issues at submission rather than after the fact. One result of the new process is that the analysts' workloads can be completed within 41 days after the end of the calendar quarter, which is 15 percent sooner than under the legacy process. In the legacy process, the analyst workload was completed within 48 days after the end of the calendar quarter.

7. SEAMLESS THROUGHPUT

FFIEC Call Report agencies and Call Report software vendors consume the same taxonomies, thereby enabling all groups to test identical changes prior to implementation. As a result, a seamless implementation of these changes can be made within minutes or hours depending on number of changes. The legacy process required days or even weeks, depending on the number of changes.

The benefits of the XBRL taxonomy are clear to its users, but conveying the benefits of any new technology to other groups is often difficult. The success of the Call Report Modernization project, and the role of XBRL in that success, helps other organizations recognize the benefits of adopting the use of XBRL.

The Importance of Technology

The choice of technology used to support the business goals of the project was vitally important. The use of the XBRL standard was viewed to be the best fit for the modernization project, because XBRL would enable the Call Report agencies to increase the timeliness of reported data that meet the agencies' validation criteria. The idea behind XBRL is simple. Instead of treating financial information as a block of text - as in a standard internet page or a printed document - it provides identifying tags for each individual item of data that is computer readable. For example, an institution's net income has its own unique tag.

The introduction of XBRL tags enables automated processing of business information by computer software, cutting out laborious and costly processes of manual re-entry and comparison. Computers can treat XBRL data intelligently: they can recognize the information in a XBRL document, select it, analyze it, store it, exchange it with other computers and present it automatically in a variety of ways for users. XBRL greatly increases the speed of handling of financial data, reduces the chance of error and permits automatic checking of information.

Using an international financial reporting standard such as XBRL enabled the FFIEC Call Report agencies to tag bank data in a uniform way and to exchange it with outside parties. There are many financial XML (eXtensible Markup Language) languages, but XBRL is the only financial reporting model that enables a company to define semantics and business rules. Thus, in using XBRL the agencies did not need to create their own XML language to exchange and receive data from financial institutions.

XBRL is a fully extensible language that can meet financial reporting business needs. The extensibility of XBRL enabled the FFIEC Call Report agencies to address issues such as defining business rules and handling rows and columns of a data presentation. The agencies developed a formula linkbase that captured Call Report validation checks. The formulas are based on another XML standard called XPath. The FFIEC Call Report agencies developed an XBRL presentation linkbase that handled the columns and rows of a reporting form. The presentation linkbase made use of current XBRL defined linkbases, presentations and references.



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XBRL makes use of other XML specifications, such as XML Schema and Xlink. XML Schema allows the agencies to define data structures implicitly, in both content and financial concept relationship. Xlink provides polymorphic relations between financial concepts and other resources, such as labels or reporting instructions. XML Schema allows for the syntactic validation of a document instance, that is, XML Schema ensures that the instance structure is valid. XML Schema does not ensure a document is semantically correct. XBRL ensures semantics through the use of XLink.

The Call Report agencies developed a taxonomy that contains all metadata definitions for the Call Report. The Central Data Repository (CDR) makes use of all metadata information contained in the taxonomy even to the point of processing data with formulas. The CDR processes the raw XML with formulas (XBRL linkbase) found in the Call Report taxonomy. The CDR does not transform financial data into another format, such as java or SQL, for processing. Financial data received by the CDR are processed and validated against the Call Report taxonomy, and the results of the data validation are returned within minutes.

Cascading data validation is a unique use of XBRL-based formulas. In cascading data validation, a group of formulas is applied to an instance of data; the result is then applied to another set of formulas, which produces yet another result. The CDR uses cascading data validation to determine the unique set of data each institution is required to report, and the formula groups that accomplish this task are known as the 'reportability rules.' The Call Report instructions define in text for the Call Report preparers the information that financial instructions must report. In moving to a XML based solution, these reportability statements were developed into formulas. The process takes institution entity information (instance one), applies formulas (group one) and provides an intermediate result (instance two), which is then applied to another sets of formulas (group two). The final result (final) is a collection of financial concepts the institution must report. All information to perform this process is contained in the XBRL taxonomy.

Originality

The Call Report Modernization project marks the first large-scale use of XBRL, not only in the United States, but worldwide. The standard provided the FFIEC's Call Report agencies with a platform to exchange and communicate financial data in a common language among each other and with their stakeholders.

The FFIEC's Call Report Modernization Project represents a unique cross-agency and IT vendor collaboration that can serve as a model for other organizations that are seeking efficient ways to handle the ever-increasing amount of data that must be analyzed. Several new business processes were put in place during the beginning of the project to support this collaborative effort. In order to simplify the business model, the agencies agreed on a common data name. The MDRM (Micro Data Reference Manual) number was used as the key unique identifier within the CDR system. In addition to the common data name, the agencies also agreed on a common set of formulas that would be used to validate the Call Report data. The early agreement to the adoption of these business models helped to ease the implementation of the project from a business perspective.

Success



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It is not an exaggeration to say that the Call Report Modernization Project benefits the American public as a whole. The public relies on government regulatory agencies to ensure that the banking system is sound and that their deposits remain secure. Timely, accurate data gives regulators the information they need to supervise banks effectively. This has become increasingly important in today's world, where business portfolios are widely diversified and contain sophisticated and complex instruments. Regulators need to work "faster, better, and smarter" than ever before. The Call Report Modernization Project gives them better data to work with, and it delivers it to them more quickly. Faster access to data also benefits banks and other users who rely on it to make business decisions.

Ironically, it is possible that many of the banks that are now using XBRL to file their Call Report data are unaware of any change. Almost all banks have relied on vendor-supplied software ever since the electronic filing of Call Report data became mandatory in 1998. In order to make the Call Report Modernization Project successful, the FFIEC Call Report agencies worked with the seven firms that specialize in producing Call Report software. The vendors provided their client banks with the software that permitted them to file their Call Report data using an XBRL format. What banks will notice more and more, however, is that the process has become far more efficient, with more timely feedback on the quality of their data submissions.

All banks were required to begin submitting their Call Report data to the CDR using XBRL at the end of the third quarter 2005.

Difficulty

Developing a system using a new technological standard that is continuously evolving proved difficult during the early stages of the project. As the XBRL specification was updated and refined, the Call Report agencies tried to work within its limitations. Even though XBRL could meet the majority of the FFIEC Call Report agencies' business requirements, there were several requirements that were not addressed by the XBRL 2.1 Specification. One of the most challenging limitations was the lack of the ability to process the complex formulas used by the Call Report agencies to validate financial data. The FDIC therefore joined the XBRL organization and opened discussions about the Call Report agencies' business requirements with the XBRL consortium. Thus, the Call Report agencies had the opportunity to modify and enhance the XBRL specification to include some of these business requirements. One of these modifications was the addition of a formula link base to the specification. The formula link base provided the functionality to create complex formulas in the validation process, which has been essential to enabling financial institutions to pre-validate the quality of their financial data.

As an interagency effort, collaboration was a key component throughout the project. Due to the large number of differing business and technical requirements within each Call Report agency, this proved extremely challenging when evaluating the numerous downstream systems that would link into the CDR. In an effort to improve coordination among the Call Report agencies, several interagency working groups were formed to review system requirements, ensure quality data standards, and to manage the project on a daily basis.

Converting from legacy mainframe systems to web based systems was another challenge. The difference in speed between the two types of systems and the potential negative impact on the



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ability of agency staff to effectively meet stated deadlines was of great concern. Also, the system needed to have strong security standards to protect the integrity of the data and support bank user authentication. In addition, all government agencies are required by law to create systems that allow use by persons with disabilities, particularly vision-impaired users. These concerns were addressed by including performance, security, and usability standards in the system requirements. Iterative development and testing efforts ensured that the final product complied with all requirements and legal obligations.

It was a major priority that little or no disruption to reporting financial institutions occur while transitioning to the new system. This required close and constant communication with the third party software vendors that provide Call Report preparation software to the industry. As was done when establishing agency working groups, a focus group comprising software vendors, agency and Unisys representatives was created to provide a forum to discuss issues, problems and concerns throughout the development process. As the team prepared for implementation, they conducted several testing pilots with financial institutions and software vendors to gauge system readiness.

In order to secure funding, the Call Report agencies had to present a detailed business case which demonstrated a return on investment (ROI) and alignment with the strategic goals and objectives of the agencies.

In addition to demonstrating a projected ROI that was clearly equal to, or better than, alternative uses of available resources and showing how the project aligned with the agencies' strategic vision, mission, and business requirements, the business case also had to meet other criteria in order for funding to be approved. These included:

- *Reducing risk by establishing clear measures and accountability;

- *Employing an acquisition strategy that appropriately allocated risk between government and contractor, effectively used competition, and tied contract payments to accomplishments;

- *Insuring that the development of the system did not unnecessarily duplicate IT capabilities within the FDIC, the other financial regulatory agencies, or the private sector;

- *Integrating information and physical security, ensuring that controls are adequate to mitigate risks.

This business case was reviewed and approved by both the FDIC Board of Directors and the FFIEC Board, which also monitored the project throughout its lifecycle.