XBRL: Solving Real World Problems

The use of XBRL continues to grow since its public introduction in April 2000. For example, since April 2005, the SEC has been encouraging EDGAR filers to voluntarily furnish XBRL-related documents as attachments to traditional EDGAR filings. More recently, the SEC has funded a $54 million project to modernize EDGAR. XBRL is a key component of this modernization. In October 2005, the Federal Financial Institution Examination Council (FFIEC) completed a $39 million project that requires over 8,000 banks to submit their quarterly call reports to the FFIEC using XBRL.[1] Around the world, several stock exchanges, taxing authorities, and other regulatory agencies are requiring organization that report to them to use XBRL.

Loosely borrowing from marketing theory, these are examples of a "push" strategy. That is, the FFIEC *pushed* the XBRL requirements onto the banks. The banks did not independently discover the benefits of XBRL and then petitioned the FFIEC to switch to XBRL reporting. This latter situation—if it had occurred—would be a *pull* strategy. Many of the XBRL success stories touted by the XBRL supporters are examples of one organization pushing the XBRL requirement onto another party. This does not mean that the *pusher* is shifting all the costs and efforts to the *pushee*. Both the FDIC and SEC have spent millions of dollars to modify their own systems and procedures to receive and process XBRL documents.

Frequently, when someone uses the word "push" in other contexts they are using it in a pejorative sense. A push strategy in marketing theory is not pejorative. Most cell phone

[1] This is also commonly referred as the "FDIC project."

manufactures use a push strategy when they give the cellular service providers large subsides to encourage them to promote their cell phones.

In many situations, companies frequently try to combine both push and pull marketing strategies to maximize their market penetration. The purpose of the research presented in this paper is to explore the pull-side of XBRL. Specifically, what are the high-priority accounting, financial reporting, and internal audit problems that XBRL potentially addresses that would encourage people to demand (pull) XBRL for their organizations?

The remainder of this paper is divided into three major sections. The first section provides general background information on XBRL technology and the potential drivers of XBRL acceptance. The second section provides an overview of the research. The third section summarizes the research findings, including the high-priority accounting, financial reporting, and internal auditing issues suggested by the focus group participants and the corresponding responses from the XBRL community on how XBRL could directly address those issues.

BACKGROUND

Moving Toward Critical Mass

Speakers frequently compare XBRL with standards such as fax machines, barcodes, shipping containers, and even railroad track gauge. As with any of these standards, the more people that adopt those standards, the more valuable those standards become to each participant—economist call this network effects. One aspect of network effects is that an individual who has adopted the standard benefits indirectly when someone else adopts the standard—economist call this network externalities. The use of XBRL has been growing on a world-wide basis, increasing the network effect and network externalities for an ever increasing

population. Eventually, the population reaches a critical mass and a positive feedback loop is achieved where the bandwagon effect drives existing non-adopters to adopt the standard.

Several drivers are contributing to XBRL adoption moving toward a critical mass. These drivers include:

- **Sarbanes-Oxley.** A significant driver for XBRL has been the unpleasant findings from organizations' Sarbanes-Oxley activities. Management is now a great deal more aware of basic process flow, data, and control problems. Consequently, management's objectives are to implement solutions to improve efficiency and controls and to reduce the associated costs. XBRL has many features that can help management meet those objectives. For example, implementing XBRL GL at the beginning of the information supply chain gives auditors an efficient means to interrogate detailed transactions, so, the auditor will be able to analyze larger samples and lower the materiality levels, which, in turn, will increase the probability of discovering problems or fraud.
- **XML Knowledge.** XBRL is built on XML technology, which is experiencing its own rapid growth in adoption. Organizations already have growing staffs that are knowledgeable of XML, so from a technology perspective, XBRL is more of an *evolutionary* technology than a *revolutionary* technology.
- **External Recipients.** Government regulators, tax agencies, stock exchanges, and other recipients of XBRL instance documents are major supporters of XBRL because it can vastly improve their productivity in terms of the initial data collection, manipulation, and validation. There also can be a significant drop in new errors entering the information supply chain because manual data reentry steps are greatly reduced or eliminated.

Consequently, more time can be focused on data analysis. This escalating acceptance of XBRL report by third-party recipients has been a world-wide phenomenon.

- **XBRL Consortium Synergy.** As said before, there are over 450 (and growing) organizations worldwide that are members of XBRL International. The size and diversity of this membership creates significant synergy. Many software companies already have or are adding XBRL functionality to their products. Other software companies are developing new XBRL tools for the creation of XBRL instance documents. The members from the financial analysts and reporting communities are also developing tools and services around XBRL. The accounting firm members are encouraging their clients to enhance their processes and controls through implementing XBRL.

XBRL Overview

The tagging of data is not a new concept. The Standard Generalized Markup Language (SGML), which is considered the parent of HTML and XML, was developed in the early 1980s for text editing, formatting, and retrieval. Going even further back in history, SGML can trace its roots back to IBM's GML that was developed in 1969. Tagging rapidly grew in popularity with the commercialization of the Internet and World Wide Web in 1994. The following paragraphs briefly describe the relationships between HTML, XML, and XBRL tagging.

HTML. The source code of a Web page can be viewed by selecting "Source" (Internet Explorer) or "Page source" (Netscape) from the "View" menu in the browser. The information between the angle brackets (< >) are called HTML (hypertext markup language) tags. HTML is a standard set of *pre-defined* tags that provides *format* information to Web browsers. HTML does not identify or describe the content between the starting and ending tags. For example, <h1>XBRL Overview</h1> tells the browser to display "XBRL Overview" as a level-one

heading. HTML does nothing to help automate searches for specific items from Web-based documents (e.g., What was the value of net income for IBM for 2004?).

XML. On the other hand, XML (eXtensible Markup Language) tags are used to identify or describe content. Unlike HTML, XML has no pre-defined tags. As an example, an XML file might include a line of source code that looks like:

<netIncome currency= “USD” FiscalYear=“2004”> 22000000000 </netIncome>

Using XML terminology, everything from the very first “<” to the very last “>” is one *element*, "netIncome" is an XML *element name* or *element-type*, "currency" and "FiscalYear" are XML *attributes*, and the 22000000000 is *content*.

Searching should be easier with XML since values will be individually tagged, however, since XML has no pre-defined tags, one company could use <netIncome>, another company could use <Net.Income>, and yet another company could use <Net_Income>. Thus, although XML tags can provide useful search information, in practice, the lack of standardization makes creating a generalized search engine very difficult.

XBRL. XBRL standardizes the use of XML for financial and business reporting. The core of XBRL is the XBRL **Specification**, which provides guidance for establishing XBRL tags and attributes for business reporting. The Specification does not contain standardized tags. It is the individual **taxonomies** that are developed in accordance with the XBRL Specification that includes the tags. A specific taxonomy is like a dictionary of the vocabulary for creating a business or financial report for a specific industry (e.g., banking) and for a specific reporting standard (e.g., U.S. GAAP). The primary taxonomy currently being used in the U.S. is the Commercial & Industrial Taxonomy for U.S. GAAP. It probably covers about 90% of U.S.-base companies. Taxonomies for other U.S. industries and for other countries are also available or are

under development. If an existing taxonomy is not an exact match for how an organization wants to use XBRL—and in most real-world situations they are not an exact match—the organization can create its own **extension taxonomy** to supplement or replace existing taxonomies. These extension taxonomies are similar to special-purpose dictionaries (e.g., a medical dictionary) that people use in addition to the one that came with their word processing software.

An actual document based on XBRL (e.g., Microsoft 2007 financial statements) is referred to as an **XBRL instance** or **XBRL instance document**. Because organizations can create their own tags and other enhancements or modifications to their extension taxonomies and XBRL instance documents—as long as they adhere to the XBRL Specification—XBRL instance documents can require significant efforts to create, particularly the first time they are created. Fortunately, software companies are offering tools that make the creation of XBRL instance documents and extension taxonomies much easier.

Potential Uses of XBRL

- **Web-based Financial Reporting:** Most large public companies in countries with active public markets voluntarily post their financial statements on their Web sites. In the U.S., SEC Regulation FD and Sarbanes Oxley section 409 are encouraging companies to do even more with their Web-based financial disclosures. Using XBRL-financials makes it easier of investors and other users to download and analyze the financial information.
- **Financial Analysis:** Banks, creditors, and financial analysts are interested in XBRL since it will significantly reduce the mechanical aspects of financial analysis and provide more time for analysis and decision-making. Analysis of financial data generally involves three tasks: (1) collecting and loading the data into the user's analytical software—whether spreadsheets or sophisticated analytical tools; (2) using the software to aggregate,

disaggregate, clean and re-categorize the original data so it is comparable with other data already collected from other sources; and (3) analyzing the data and making decisions based on that analysis. If the original data is a printed document or in an incompatible format, most of the users' time will be spent on the mechanical tasks (1) and (2). XBRL enables the analyst to access financial data and move the data to the analytical software more quickly, thereby, reducing the time and processing costs for tasks (1) and (2) and allowing more time for task (3), decision-making. Also, the elimination of cutting-and-pasting or manual data reentry greatly reduces the probability of new errors being introduced into the data.

- **Tax and Regulatory Filing:** Many government agencies, such as tax and regulatory bodies around the world, have mandated XBRL documents and many other are monitoring these activities and may do likewise. The most significant announcements in the U.S. were the SEC's voluntary XBRL submissions started in April 2005, and the FFIEC $39 million XBRL-based call report modernization project, which went live October 2005.

- **Internal Reports:** The power of XBRL also applies to internal data exchanges and reports, which are often more detailed, frequent, and variable compared external reports. The efficiencies of XBRL are significant inside the organization as well as outside the organization. XBRL was first viewed as an external financial reporting tool, but it was quickly seen as a valuable internal reporting tool. As said before, XBRL GL taxonomy moves XBRL upstream to the transaction level and allows drilling down from financial statements to trial balances to underlying transactions. Different XBRL-compatible accounting packages will be able to freely exchange data.

- **Consolidations:** XBRL could be used to consolidate accounting information (as well as other information) from disparate systems used by different business units. If each system is XBRL compatible, after a one-time mapping process, consolidating could be automated.

The Evolving Use of XBRL

Exactly how each organization implements XBRL will vary widely; however, as said before, XBRL can be implemented incrementally and can coexist with other technologies. For banks in the U.S. and for organizations in some other countries, their first use of XBRL was creating XBRL instance documents for mandatory external reports to government regulators and/or stock exchanges. Other organizations may be more likely to use XBRL to exchange data internally; similar to the way Excel is frequently used today. Some XBRL tools are add-ins to Excel, so the environment will be somewhat familiar to first-time XBRL users.

Currently, creating an XBRL instance document is frequently a two-step approach: first, the user will collect data or a report in one format and then use an XBRL tool to create an XBRL instance document. There will probably be a mix of manual and automated tasks involved in mapping the traditional report to the appropriate XBRL tags. However, in the future, with companies, such as Great Plains, SAP, Navision, Hyperion, and ACCPAC, building XBRL functionality into their products, producing an XBRL instance document will become a one-step process—maybe just as simple as a "Save As" option in the program. This will accelerate the creation of an XBRL instance document and reduce human error associated with re-entering data.

RESEARCH OVERVIEW

Motivation and Goals

There is a growing population of XBRL success stories where XBRL has been implements or will be implemented in the near future. In the United States, probably the most visible XBRL success story has been the FFIEC's requirement that over 8,200 U.S. banks use XBRL for their quarterly call reports. The embracement of XBRL by the SEC has the potential to be a big success story. Currently, the SEC is encouraging companies to attach XBRL instance documents to their regular SEC filings. Approximately 30 companies have participated in the SEC's voluntary filing program (VFP). In September 2006, the SEC announced that they awarded three contracts totaling $54 million, "to transform the agency's 1980s-vintage public company disclosure system from a form-based electronic filing cabinet to a dynamic real-time search tool with interactive capabilities."[2] Stories similar to the ones above are happening globally with government regulators, agencies, and stock exchanges requiring those that report to them to submit XBRL instance documents.

Borrowing loosely from marketing theory, these examples of XBRL implementation could be referred as a "push" strategy. The purpose of this paper is to look at the pull side. Specifically, for this research project, the general goals included:

1. Identifying the most significant accounting and financial reporting issues facing a wide variety of enterprises.
2. Identifying how and where XBRL could address those issues.
3. Identifying issues that might inhibit the implementation of XBRL.

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[2] http://www.sec.gov/news/press/2006/2006-158.htm

Research Method

The difficulty of conducting research regarding XBRL and internal auditing is that only a very small population of internal auditors (or the general business population, for that matter) is familiar with basic XBRL concepts. To address this limitation, the multiple-step approach shown in Figure 1 was used. The first step was to collect and review XBRL literature, which included published articles, PowerPoint slides from XBRL presentations, and both public and member-only materials available at the www.xbrl.org Web site.

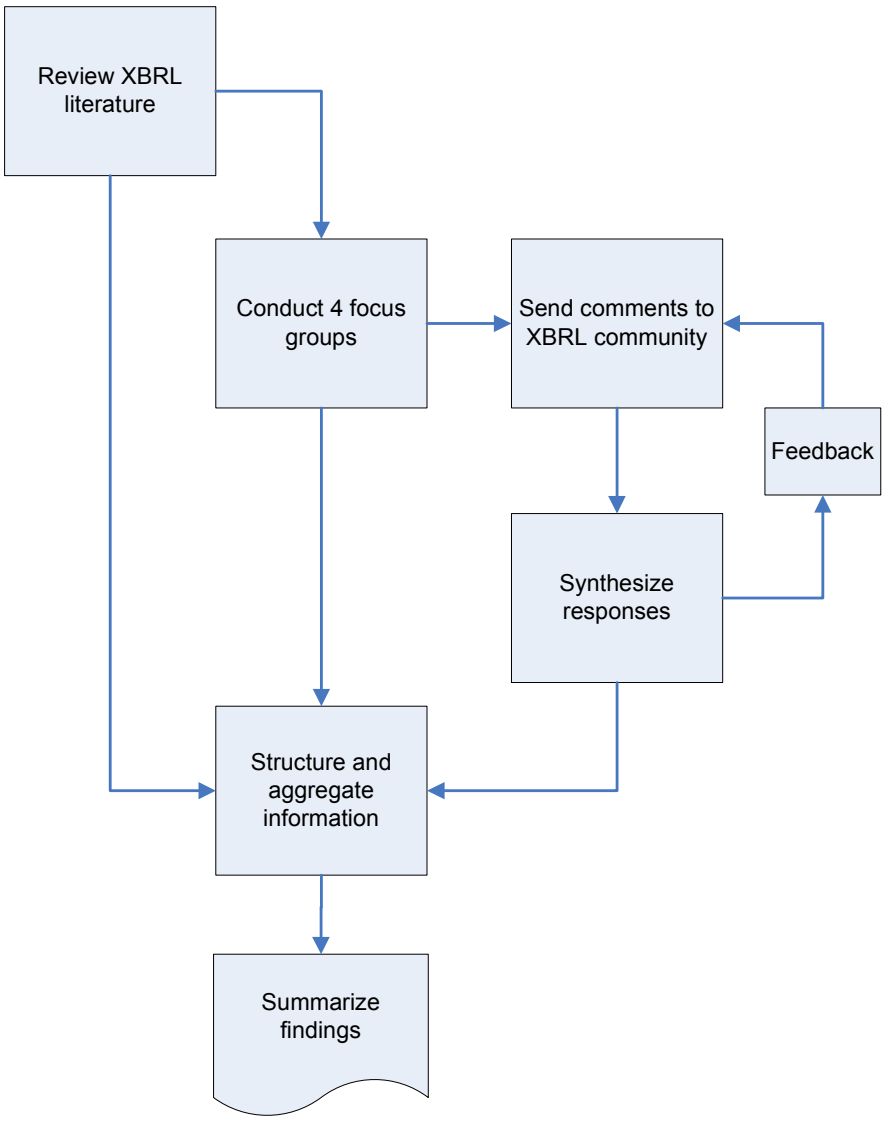

Figure 1. Research Methodology.

The second step was to conduct the focus groups with internal auditors, including:

1. Volunteers from the San Fernando Valley IIA chapter.
2. Volunteers from the Dallas IIA Chapter
3. Volunteers from the Los Angeles ISACA chapter to obtain a more-IT focused perspective.
4. Volunteers from the Hawaii IIA Chapter

The primary objective (and about 90 minutes) of each focus group was to develop an understanding of the current issues and concerns related to accounting, financial reporting, and auditing. During the last 30 minutes of each focus group, the researcher provided a brief overview of XBRL and the participants were also asked for their comments and questions regarding XBRL.

The general issues and concerns regarding accounting, financial reporting, and auditing and specific issues and questions regarding XBRL were summarized and forwarded to selected members of the XBRL community, who were asked to suggest how XBRL addressed those issues, concerns, and questions.

The final step was to structure and aggregate all the information collected during the project.

FOCUS GROUP SUMMARY & RESPONSES

The following is a summary of the key comments from the focus group participants and a synthesis of the corresponding responses from the XBRL community. The issues and concerns presented by the participants generally fell into the following topics:

- Sarbanes-Oxley and Internal Controls
- Fear of Spreadsheets

- Retrieving and Consolidating Accounting Information
- Audit Tools

In addition to the above topics that surfaced during the focus groups, this section concludes with the participant's comments and questions regarding XBRL, and responses from the XBRL community.

Sarbanes-Oxley and Internal Controls

Considering the timing of the focus groups, it was not a surprise that Sarbanes-Oxley and internal controls were significant parts of the focus group discussions, including the following sample of comments:

- Sarbanes-Oxley was a "real eye opener" in terms of the state of internal controls over financial reporting.
- Non-standardization of controls was a concern. It was not that the controls were weak or lacking, but the same process in different business units would have a different set of controls.
- The continuation of the controls was a concern because once the existing controls have been tested and documented, how do you know that those controls are still being used after the testing has been completed.
- Segregation of duties was an issue in that, partly due to the proliferation of spreadsheets, it is not totally clear who has access to what data. In the IT department there are superusers who raise additional segregation of duties concerns.
- Segregation of duties is a dynamic issue because segregation of duties could be fine today, but tomorrow, because of personnel or other changes, there could be a conflict of duties.

- Independence and objectively can be an issue. For example, what if a manager tells a subordinate to do something that violates policies? What if a strong CEO or CFO tries to convince employees or auditors to not report something?
- The general lack of formal training regarding policies and procedures is a concern.
- Fraud detection is an issue because fraud detection requires more auditor time and resources. Materiality levels are set too high and samples are too small—partly due to budget constraints—to detect fraud.
- Lack of transparency of transactions was an issue, raising questions such as: Did the data change? When did the data change? What did it change to?
- An issue related to legacy systems is that the people who understood the legacy systems are retiring or literally dying off. Yet, companies have no plans to replace those systems.
- Keeping up with technology changes presents is a concern, particularly, if there are multiple platforms each of which is changing over time. Sometimes those changes are internally driven (e.g., maintenance and upgrade activities) and other times they are external changes (e.g., changes to meet a regulatory requirement or software patches and upgrades).
- The dynamic aspects of businesses can be a challenge to auditors. For example, adding a product or service might result in a change to the general ledger by adding a new account or line item. This would mean that reports based on the general ledger and spreadsheets that use data from this general ledger would have to be modified to reflect the GL change. How do you know this was done by *everybody* affected by the changes?
- Who owns the processes and controls? What if nobody will take the ownership? Or what if a person will take ownership of the processes but not the associated controls?

The following is a synthesis of the comments of the XBRL community regarding XBRL's potential contributions to ameliorating Sarbanes Oxley and internal control concerns.

XBRL Contributions to Sarbanes Oxley and Internal Control Environment

XBRL cannot solve every internal control problem, but aspects of XBRL can improve internal controls. As a reporting tool, XBRL has several built-in controls. XBRL software tools will not create an XBRL instance document if it is not syntactically and semantically correct—they will generate a list of errors instead.

Data Layer Validation. XBRL taxonomies can include linkbases that contain business rules, adding another level of validation, and linkbases can move validation to the earlier stages of the *internal* information supply chain. Another important value of linkbases is that the validation is taking place at the data layer instead of at the application layer. This means better quality data will be accessed by different applications in the application layer and that the data validation components of each application does not have to be as sophisticated. This data layer validation is a significant contributor the productivity increases expected in the FFIEC's bank-reporting project, where the time to deliver summary reports based the reports from over 8,000 banks will drop from 60 days to 2 days!

Continuous Auditing. XBRL supports continuous auditing (CA), particularly, at the XBRL GL level. If XBRL instance documents are used as the interface to exchange data between disparate systems inside and outside the organization, because those interfaces will be standardized and uniform, embedded audit modules (EAMs) can also be standardized and uniform. Therefore, it will be much easier to implement EAMs and CA functionality organization wide. In addition, it will be easier to fine-tune those uniform EAMs to improve fraud detection and reduce false positives.

Does all of this mean that an XBRL instance document will contain no errors? Unfortunately, garbage-in-garbage-out still applies. If somebody accidentally or intentionally posts a transaction incorrectly, that error could move through the information supply chain. However, since XBRL may result in more finely tuned, standardized controls, it *may* prevent, capture, or at least flag errors. Moving XBRL further upstream, particularly up to the XBRL GL level, reduces the possibility of errors subsequently creeping back into the information supply chain as data are exchanged from one process to the next.

In summary, XBRL promotes standardized data formats for exchanging data, which, in turn, can promote standardized controls, standardized testing, and improved audit processes. Over the long run, standardized testing can mean the materiality levels can be reduced and larger data samples can be tested for fraud.

Fear of Proliferation of Spreadsheets

During the focus groups, internal auditors raised many concerned about the proliferation of spreadsheets, including:

- Current spreadsheets are very complex and, generally, are not designed to share data between separate spreadsheets, which means frequent manual data reentry.
- The external auditors were not improving management's comfort level with spreadsheets because the auditors do not test *all* the existing spreadsheets.
- A frequent concern was that spreadsheets that are now an integral part of the accounting and financial reporting systems and these in-house developed spreadsheets do not include design or operating documentation.
- A big concern was how to validate spreadsheets and the source data for those spreadsheets.

- Another issue was the potentially false sense of security that the data collection is being performed properly because the transfer process has been automated or built into the application (e.g., Oracle's ERP system can automatically transfer data into spreadsheets).
- Another concern was the ongoing maintenance control—or the lack there of. For example, what kind of testing is done after changes are implemented into a spreadsheet to ensure that the changes did not create new problems? What about security at the spreadsheet access level and at the data level?

XBRL Contributions to Alleviating Spreadsheet Concerns

The issues with spreadsheets can be characterized as:

1. The frequent cutting-and-pasting and manual data reentry introduce new errors into the information supply chain.
2. No live links from the spreadsheets back to the source data, so it is not clear what the source of the source data was and, if the value of the source changes, the spreadsheets that included that data are not automatically updated.
3. Because different people may be extracting the same data, but at different times, there will quickly be a version control problem.
4. Data validation—both on incoming data from the source and out going data from the spreadsheet—is probably incomplete, undocumented, and performed manually.
5. Business rules and analysis formulas are captured in the spreadsheet cells and macros, but different individuals are creating their own idiosyncratic representations of these rules and formulas without collaboration.
6. Spreadsheets are rarely self-documented. For example, a cell might include "=(C17/C28)," then the person goes to C17 to see what is there and they see

"=SUM(A6:A10)," and so on. Worse yet is to examine a long macro full of cell references with no names or comments. Trying to determine what the cell references and macro are actually doing—and whether they are doing it correctly—is a major challenge.

7. Is creating and maintaining spreadsheets the best use of a person's time, particularly since accountants and financial people, generally, have little, if any, formal computer training? Plus the redundancies of individuals independently creating essentially the same spreadsheet significantly adds to the overall cost of the spreadsheets.
8. The shear number of spreadsheets that exists in organizations means that they are many spreadsheets that never going to be fully audited. All of those spreadsheets could be part of the Sarbanes-Oxley Sections 302 and 404 internal control domain.

Spreadsheets are NOT going to disappear with the implementation of XBRL. XBRL has superior functionality to act as an intermediary between disparate systems or applications. Eventually, some spreadsheets can be removed from functioning as intermediaries and be replaced by XBRL-based Web services or local applications. With XBRL, the business rules and analytics that are currently embedded in spreadsheets and uncontrollable can be incorporated in XBRL taxonomies, thereby, moving business rules from the application layer to the data layer. Applications, such as spreadsheets, to manipulate the XBRL instance documents will still be needed, but the logic and the rules will be standardized and external to the applications, thereby, greatly reducing version control problems and redundancy.

In summary, the tight coupling between XBRL instance documents and their taxonomies provides strong error checking and persistent connectivity, which can mean an unbroken audit trail. *However, with all that said, spreadsheets will still be an important tool.* For example, if a

spreadsheet is needed to perform some unique tax calculations, the spreadsheet would first automatically import the appropriate XBRL instance document, the tax calculations would be performed in the spreadsheet, and then the results could be automatically exported to an XBRL instance document that would, in turn, automatically update the general ledger.

Retrieving and Consolidating Accounting Information

As outlined below interfacing different general ledger packages is seen as an ongoing challenge.

- Exchanges between packages under different platforms such as Unix, mainframes, and Windows servers was problematic. Proprietary file formats of the third-party packages can also be a problem.
- Sometimes applications are so dissimilar that the data could be exchanged and aggregated only through manual activities.
- Every-changing systems are a concern because even after procedures are in place to perform data exchanges between systems, one or more of the systems will change.
- Some regulators and taxing authorities have different reporting periods compared to the company's fiscal year and they will have different definitions (e.g., allowable expenses) for line items for their reports.
- Another concern is mis-posting of accounting transactions. That is, how do you know that all transactions were posted to the appropriate accounts?
- Disparate systems, dissimilar platforms, and software applications that must share, exchange, and transfer data contribute heavily to data integrity concerns.
- Different GAAPs in different countries add to the consolidation problem.
- Decentralization of the organization can be a problem.

- The highly competitive global marketplace in which most companies must function makes long-range planning very difficult.
- Many companies now have more integrated business relationships with trading partners and supply chain participants, which have to interact and exchange data.
- Budget limitations can be a problem. As such, even though management may want to replace or upgrade old systems, they may not have the budget to do that.

XBRL Contribution to Consolidating Accounting Data

Acting as a means to support the map-once-use-many exchange of data between disparate internal systems, third-party systems, and trading partners and banks is one of the core powers of XBRL. Essentially, once a system is mapped to an XBRL instance document (or if a system automatically produces an XBRL instance document) that instance document becomes the uniform interface to exchange data with the world outside that system. This concept is similar to the traditional EDI concept, but XBRL is much more robust.

Auditing Tools

Auditors did not complain specifically about the functions audit tools could perform, but as the following outline indicates, using the tools and selected the right data are potential problems.

- Each audit tool has a learning curve that must be addressed to ensure that there is somebody on staff who is ready to use the tool when needed.
- Extracting data is more of a challenge than using the tool itself because organizations have hundreds of data fields distributed amongst hundreds of database tables located on different computers.

- False positives can be an issue with audit tools, particularly for very large databases.
- Some of the auditors came from organizations where auditors were not allowed to create and run their own data extractions. The IT department did the queries because they worried that the auditor would make mistakes that will use excessive computer resources and slow down other processes.
- With large organizations, part of the problem with data analysis is the sheer volume of data.

XBRL Contribution to Audit Tools

The issues with audit tools were determining what data to analyze and how to get that data—specifically, what fields in what tables. Two important aspects of XBRL are its potential to function as a means to exchange data between applications and its map-once-use-many functionality. Some of the specialized auditing tools, such as ACL and IDEA, are now capable of working with XBRL data. The data mapping will have to be performed the first time to create the XBRL instance document. Determining the correct fields and tables will still have to be addressed, but once mapped, the XBRL instance document will be the ongoing interface to that data. As XBRL moves up stream to XBRL GL, XBRL will be at the most detailed level allowing for the finest granularity for analysis.

XBRL will also help address the situation where the IT departments will not let the auditors conduct their own queries. The auditors could work with the IT department to create the mapping between the current systems and the desired XBRL instance documents that will be used by the auditors. This mapping would have to be performed once, but the mapping could then be automated to create revised XBRL instance documents on an as-needed basis. Over time, the XBRL instance documents could become more comprehensive and sophisticated.

XBRL Comments and Questions

Prior to each focus group, the participants were e-mailed some articles and links related to XBRL to review prior to the focus groups. In the last part of each focus group, participants were asked for their comments and questions. A summary of these comments and questions were subsequently e-mailed to selected members of the XBRL community to solicit their responses. The following summarize the questions and the responses.

Question: Once the investment community learns that it is easier with XBRL to provide more data quicker with less work, will the investment community (and regulators) start demanding more data, wiping out any productivity gains?

Response: Irregardless of communication channels, as was seen with Sarbanes-Oxley, Regulation FD, etc., regulators and investors are going to continue to demand more and quicker information from organizations—that is a given. As such, organizations need to find the most efficient and effective ways to meet that growing demand. The map-once-use-many, the standardization of processes and controls, and the built-in validation and controls are some of the aspects of XBRL that will help organizations meet those growing demands.

Question: Why take the time and effort now to map the current disparate systems to XBRL for consolidation purposes since: (1) the company already has something in place for doing consolidations, and (2) if they implement ERP systems in the future, this functionality will be built in?

Response: This question is an oversimplification of the current situation and the related problems. While it is true that organizations already have a consolidation process; that process is generally replete with manual steps and weak controls that can be enhanced and made more

efficient with XBRL. Also, the idea that an ERP system provides this functionality seems to ignore some of the common problems with data today, such as:

- No shared context across applications both within and across enterprises.
- Labels (field names, etc.) are not consistent across applications—no shared definitions.
- Poor data quality because of little or no independent validation of data as it moves from process to process.
- "One Way" data traffic with data moving out of an ERP system for analysis, but it is difficult to put the results back into the ERP system. For example, information for a tax provision analysis will be dropped into Excel, but the resulting 'answer' must be entered back into an ERP via a *manual* journal entry.
- Physical relationship between data and analytics with business rules defined at the application layer meaning that several versions of the same business rules can reside in different applications (e.g., different accounting systems, different spreadsheets, etc.). This leads to version control problems.
- Poor connectivity to resources across applications
- Due to the poor connectivity and one-way data flow, it is difficult or impossible to follow an audit trail upstream from reports to the original sources. This is a significant Sarbanes-Oxley issue.

Question: Why spend the time and effort now on mapping old systems to XBRL? Why not just wait for the second generation of applications where XBRL is more integrated or native in the software and other applications?

Response: As with any technology, the issue usually boils down to identifying and quantifying all of the applicable costs and benefits. XBRL is not going to be the cost-effective

solution in every situation. However, if the benefits exceed the costs in a particular situation, then postponing the implementation of XBRL technology means that the net benefits are being postponed and lost. XBRL can be implemented incrementally, so it is not an all-or-nothing situation.

Question: Although the cost of disk storage and bandwidth are coming down, there are still some costs associated with XML technologies in terms of larger file sizes.

Response: While it is true that XML tags can add significant overhead to a file's size, most XBRL instance documents for financial reports are still relatively small. Since XBRL GL can be used to exchange transaction-level data, those file could become much larger than the XBRL financial reporting instance documents. Fortunately, with the continuous decreases in the cost of storage devices, even if the use of XBRL instance documents grows significantly in an organization, the storage cost should not become a major issue.

Question: Currently, the benefits of XBRL seems to be to the recipients of XBRL instance documents, but what is the benefits to the preparer of this the XBRL instance document?

Response: Most public companies would agree that simply communicating better, faster, and more directly with the analysts and capital markets is itself a good thing—and there are academic studies to support that opinion. XBRL provides companies with both a way to tell their story and provide their data to the analysts in a format that can easily be consumed by their computer models. In general, from the company's perspective, some of the benefits *to* the preparer are:

- Lower cost of producing information
- Tell your own story (precise & clear)

- More timely, accurate, data for decisions
- Enhanced analytical capabilities
- Better control environment, which is applicable to both small and large companies
- Accelerated adoption of reporting model changes

Question: Because of the complexity and size of XBRL files, will it be easier to intentionally hide something or make it harder to find an error that occurred in the XBRL file?

Response: Since XBRL files are validated and the structural relationships are open, there is much less possibility of this, compared to unvalidated and closed systems, such as text, faxes, CSV files, and spreadsheets.

Question: Because XML/XBRL is an open and a common language, does that make it easier for hackers to hack into these kinds of files?

Response: No. XBRL files can be digitally signed and made immune to "hacking." Openness and commonness are not security risks. Failure to implement proper controls and information security is the root problem.

Question: It is all well and good that XBRL could be used internally to consolidate accounting data from disparate systems; however, that is a very small population of companies.

Response: The number of organizations that are candidates for XBRL is larger than it first appears. There are the non-U.S. based multinationals and the large population of private companies. Any company with a consolidation of two or more accounting systems is a candidate for XBRL consolidation. There is a false assumption that an ERP system standardizes information. Putting all of a company's data into one location does not solve the fundamental information problem. Even in a single database you can have disparate data definitions.

Question: Does XBRL have a very steep learning curve for both the tags and basic XBRL technology?

Response: There is no denying that XBRL has some complexity. Fortunately, much of the grunt work associated with creating extension taxonomies and XBRL instance documents has been built into a growing population of XBRL software tools.

CONCLUSIONS

As this study demonstrates, there are many ways that XBRL *directly* addresses the high-priority accounting, financial reporting, and auditing issues facing public companies and other organizations. This means that a pull strategy has a high potential here and should be more strongly pursued by the XBRL community.

REFERENCES

The information about XBRL, the SEC, and the FDIC came from articles, white papers, and PowerPoint slides from XBRL presentations available at the www.xbrl.org Web site. Particularly useful to get an overview of what organizations are doing with or for are available in the progress reports on the Web site.