Data Standards in Surety Underwriting

May 2, 2016
Executive Summary

The surety underwriting process requires the evaluation of financial data collected from contractors to identify risks and determine eligibility for surety bonds. Today’s data-gathering process is highly manual, which is inefficient, time-consuming and labor-intensive. Contractors typically submit PDFs or spreadsheets to the sureties and banks, which must then be re-keyed into their financial systems before analysis begins. Reported data includes financial statements, and Work-in-process (WIP) reports that describe the financial performance and status of a contractor’s individual construction projects. The WIP report is usually updated and resubmitted each quarter so that the surety can monitor activities on an ongoing basis. These inefficiencies mean time delays, added and unnecessary costs and negative impact on credit for contractors.

A working group has been established representing sureties, bond producers, contractors, accounting firms and software providers to evaluate the use of standards in the surety underwriting process. This paper, developed by the working group, proposes automating the information collection process by using data standards that will make previously paper-based data computer-readable. The XBRL (eXtensible Business Reporting Language) standard is proposed because it is uniquely suited to financial data, is an open, freely available global standard and is widely used for reporting by public companies, financial institutions and governments. Data standards like XBRL enable straight-through-processing from the reporting entity to the user and allow for automation.

Adopting XBRL into the process will result in contractors getting faster and more efficient access to credit from the sureties on which they rely; sureties will be able to dramatically improve the efficiency of data collection and analysis in the underwriting process.
Current Situation

Surety is a specialized line of insurance that involves three parties. In the context of a contract surety bond, the parties are: 1) the principal (contractor), which is the party that undertakes the obligation; 2) the surety, which guarantees that the obligation (work) will be performed; and 3) the obligee, who is the owner of the project and who receives the benefit of the work and the protection of the bond. In the context of this white paper, sureties can issue three types of surety bonds: bid, performance and payment bonds.¹

Typically, there is another party involved in the transaction known as a bond producer (also called surety agent), who is a licensed producer or broker specializing in surety and serving as an intermediary between the contractor and the surety. Contractors work with bond producers who identify sureties that will be a good match for a particular contractor, based on size, industry and other factors. Once the relationship between the contractor and surety is in place, the bond producer continues to work with the two parties to advise how they can work together. The bond producer often receives financials and other materials from the contractor for review before they are shared with the surety.

Market Size

The U.S. surety industry generates $5.5 billion in written premiums each year. The global market exceeds $12 billion. The National Association of Surety Bond Producers (NASBP) represents licensed bonding agencies throughout the U.S. and in various foreign countries. Most sureties that write bonds in the U.S. are members of The Surety & Fidelity Association of America (SFAA), which has approximately 400 individual underwriting company members.² These sureties work with hundreds of contractors, providing surety bonds to guarantee performance and payment. Contractors are large and small companies, and the majority are private. There are thousands of contractors in the United States. The CFMA (Construction Financial Management Association), a member association for US contractors, has 4,502 general members.³

Contractor Process

To request a bond, the contractor typically submits, through its bond producer, financials and other documents that might include a copy of the underlying contract, description of the project being bonded as well as other supporting materials that help illustrate banking relationships, ownership structure, subcontractor management policies and internal accounting systems. Typically, a single bonding company provides all of the bonds needed by a contractor for all of its bonded projects.

¹ Bid bonds provide assurance that a bid has been submitted in good faith. Performance bonds protect the owner from financial loss in the event that the contractor fails to perform the contract in accordance with its terms and conditions. Payment bonds provide assurance that the contractor will pay certain workers, subcontractors and suppliers of materials.
² Source: SFAA. When individual companies are grouped with their parent, there are approximately 125 grouped organizations.
Once the relationship is set, the contractor provides periodic financial updates to the surety to keep them informed of ongoing activities and financial results. These quarterly updates typically include financial statements and the Work in process report (WIP) both of which are generated from the contractor’s internal financial system(s).

<table>
<thead>
<tr>
<th>Job No.</th>
<th>Job Name</th>
<th>Costs Incurred To date</th>
<th>Total Estimated Costs</th>
<th>% Complete</th>
<th>Contract price</th>
<th>Estimated Total Gross Profit</th>
<th>GP %</th>
<th>Contract Revenue Earned To date</th>
<th>Cost to Complete</th>
<th>Billed to Date</th>
<th>Costs and Earnings in Excess of Billings</th>
<th>(Billings in Excess of Costs and Earnings)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job 2012-01: Test site work</td>
<td>$1,000,000</td>
<td>$1,250,000</td>
<td>80%</td>
<td>$250,000</td>
<td>0</td>
<td>$1,300,000</td>
<td>$250,000</td>
<td>0</td>
<td>$1,300,000</td>
<td>$1,300,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job 2012-02: Test site building</td>
<td>$2,000,000</td>
<td>$2,500,000</td>
<td>55%</td>
<td>$750,000</td>
<td>0</td>
<td>$413,793</td>
<td>$250,000</td>
<td>0</td>
<td>$350,000</td>
<td>$350,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job 2012-03: Test site building</td>
<td>$3,000,000</td>
<td>$3,750,000</td>
<td>77%</td>
<td>$750,000</td>
<td>0</td>
<td>$2,307,892</td>
<td>$750,000</td>
<td>0</td>
<td>$2,000,000</td>
<td>$2,000,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job 2012-04: All jobs</td>
<td>$4,750,000</td>
<td>$4,750,000</td>
<td>100%</td>
<td>$4,750,000</td>
<td>0</td>
<td>$4,750,000</td>
<td>$4,750,000</td>
<td>0</td>
<td>$4,750,000</td>
<td>$4,750,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As noted in the example above, the WIP report provides detailed performance data on costs, revenues and profits for individual projects managed by the contractor. The length of the WIP varies depending on the number of projects and can contain hundreds of individual projects. In the example above, projects are listed under the first column “Job No.” Most contractors submit documents in PDF format; some in Excel. On occasion, documents are submitted in printed form. The format of the data in the WIP (e.g., order of the column headers in the table) can vary. The WIP can contain data on as few as 3-4 jobs or as many as 400 jobs. Most tend to have 20-50 jobs with aggregations of small jobs pooled together as a single project entry. Contractors send the WIP report to the surety but also may send it to internal project management, their bank, lawyers and others.

**Surety Process**

When the surety receives the WIP report each quarter, it is re-keyed into its analysis systems, a task which is sometimes performed by data entry staff in a service center, by entry-level underwriters or by an assistant to the underwriter. Data must be checked for accuracy because of the manual entry. The surety uses data from the contractors’ financial statements and the WIP to assess the health of the contractor and its ability to successfully complete the contract.

Time spent re-keying information depends on the length of the WIP: an existing account with ten jobs can take 25-40 minutes to input; 25 jobs are estimated to take approximately an hour; a WIP from a larger contractor that has hundreds of projects could take hours to complete. The manual process is tedious and time-consuming and requires checking and validation at the point of data entry to ensure no errors are introduced into the data. It is not uncommon for sureties to process thousands of WIP reports each year equating to thousands of hours of inefficient processing time.

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4 Estimates drawn from interviews with several large surety companies.
Most large sureties have built their own analysis system to perform custom analysis, including benchmarking and predictive modeling, to conduct searches, and provide reports for trend and risk analysis.

Problems with the Current Process
Today’s largely manual process for collecting financial information needed for the underwriting practice results in these issues:

1. **High costs.** Entering data by hand into the surety’s analysis system requires significant staff resources.
2. **Delays.** Time spent re-keying delays the completion of the underwriting process.
3. **Negative impact on contractor access to credit.** Receiving more timely WIP data can have a positive impact on the contractor’s ability to obtain credit.

Alternative Methods to Improve WIP Data Collection
The problems inherent in the current data collection process demonstrate that a change in this process could benefit all parties to the supply chain. Standardizing the method in which data is collected and consumed in the surety underwriting process generates significant system efficiencies, and can allow sureties to be more responsive to the credit needs of the contractors they serve. This paper and the working group that developed it do not suggest that sureties will require the use of standards by the contractors reporting WIP data, but the benefits of standards are clear.

Several alternatives can be considered in a move to standardization:

**Alternative 1: Develop a standard Excel template for contractor data**
Participants in the surety bonding supply chain could come together to establish an agreed-upon template in Excel that contains financials and WIP data. Contractors would use the templated Excel to prepare and submit their financials and WIP data. Sureties would map their internal financial systems to individual cells within the Excel template to enable automatic data extraction when new files are received.

Pro:
- Templates are easy to complete and represent a small change from current process.

Con:
- Establishing an Excel-based template that is identical for every contractor would be impossible given the variability of projects and contractors.
- Should the reporting needs of sureties change, requiring a change to the template used, it would be difficult to ensure that all contractors are using the most current template for reporting.
- Would preclude the ability to establish business rules around reported data to catch errors and to ensure that data is accurate and consistent. Rules could test whether a reported value should always be positive or negative, whether certain reported items must always be greater or less than other values, etc.
Excel does not have a facility to establish standard definitions and labels for reported values. Without upfront collaboration on the meaning of individual concepts used in the Excel WIP template, e.g., “Percent to Complete, Over(Under) Billings”, incoming data could not be consumed by the surety automatically. Underwriters would be required to evaluate each WIP as they do today or risk data interpretation errors.

Excel is a proprietary format that requires the use of a product from a single vendor.

Does not support the collection of other financial information from contractors.

Alternative 2: Adopt the XML standard for contractor data

XML (eXtensible Markup Language) is a data standard that provides metadata embedded in a reported value to describe what it is. For example, the word “PhoneNum” placed within markup tags could indicate that the data that follows represents a phone number.

```xml
<PhoneNum>800-555-5555<PhoneNum>
```

Similarly, tagging could be used on WIP data to describes facts reported such as Estimated Costs.

```xml
<EstimatedCosts>1250000<EstimatedCosts>
```

XML is flexible and is used for many types of applications. XML is extensible, which means that new tags can be created to represent different types of information reported.

Pro:
- XML is commonly used for a wide variety of applications, and many software providers are already capable of creating and ingesting XML-formatted data.

Con:
- Data produced from one XML application may not be consistent with data produced from a different XML application because of the flexibility of the XML standard.
- XML does not have a built-in mechanism to handle currency, time period, legal entity and financial tables.
- XML does not provide a longer term path for collecting financial data.
- XML does not come with standard validation languages that allow calculations and relationships between values to be checked.

Alternative 3: Adopt the XBRL data standard for contractor data

XBRL is an XML-based standard, created to help categorize financial data in a computer-readable format so that it can be easily extracted. Data standards like XBRL are built for automation and scale to reduce cost, fraud and delays. XBRL can enhance the way data is collected and shared. It does not change what data is reported, only how that data is formatted.

A successful XBRL implementation requires supply chain participants to collaborate upfront to define concepts and labels for data reported. Once the initial work is done, reported data is clearly defined for creators, data intermediaries and end users. Data in structured format is easy to create and portable and, therefore, significantly less expensive to consume.
XBRL is able to leverage the tagging feature of XML to provide information about individual reported values. XBRL goes beyond XML, however, to add structure so that XBRL-formatted values contain metadata that specify time period, units, and number of decimals in a consistent fashion. In situations where data is represented in tables, it may include other dimensional characteristics such as region, business unit or, in the case of the WIP report, project or contract name. When an XBRL document is created, it references a specific digital dictionary of terms, called a taxonomy, to capture the concepts and definitions that are used to define each value that is reported. This added structure means that data reported by multiple contractors is consistent and comparable.

For example, a value like 12,113,470 by itself has no meaning. However, when we view that value in a WIP report (see portion of a WIP table below), we know from reading columns and headers that the datapoint highlighted depicts information about Contract #200 for the reporting period from inception to 12/31/2014. We know that it represents Earned Contract Revenue and is reported in U.S. dollars.

<table>
<thead>
<tr>
<th>Contract Number</th>
<th>Total Contract</th>
<th>From Inception to December 31, 2014 *</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimated Revenue</td>
<td>Estimated Costs</td>
</tr>
<tr>
<td>200</td>
<td>$29,831,262</td>
<td>$22,771,956</td>
</tr>
<tr>
<td>201</td>
<td>4,765,875</td>
<td>3,915,859</td>
</tr>
<tr>
<td>202</td>
<td>3,165,649</td>
<td>2,635,676</td>
</tr>
<tr>
<td>203</td>
<td>6,845,696</td>
<td>5,348,200</td>
</tr>
<tr>
<td>204</td>
<td>3,202,917</td>
<td>2,139,767</td>
</tr>
<tr>
<td>205</td>
<td>3,267,627</td>
<td>2,402,206</td>
</tr>
<tr>
<td>206</td>
<td>3,513,815</td>
<td>2,260,925</td>
</tr>
<tr>
<td>208**</td>
<td>12,187,491</td>
<td>13,500,000</td>
</tr>
<tr>
<td>209</td>
<td>3,274,077</td>
<td>2,798,357</td>
</tr>
<tr>
<td>210**</td>
<td>3,835,139</td>
<td>4,296,527</td>
</tr>
<tr>
<td>211</td>
<td>13,500,000</td>
<td>10,227,273</td>
</tr>
<tr>
<td>212</td>
<td>3,849,262</td>
<td>3,137,190</td>
</tr>
</tbody>
</table>

When that information is transformed into XBRL, metadata is embedded in the value itself so that the surety’s financial system can automatically recognize what the value represents and post it into its internal database appropriately.
XBRL requires two components for reporting: a taxonomy and an instance document. The taxonomy is a digital collection of terms that includes the computer-readable and human-readable label, a definition and a hierarchy of those terms. The taxonomy is represented in the diagram above in the green and purple. The instance document defines the specific reporting situation, for example, a WIP report for ABC Contractor for a specified time period. The instance is represented in orange and blue in the diagram.

Where XBRL is Used Today

XBRL is used today in 60 countries, by over 10 million companies and by more than 100 regulators. In the United States, XBRL is used by bank institutions and public companies to report financial data and by data intermediaries and investors to analyze that data. Every public company today reports its financial statements in XBRL format to the U.S. Securities and Exchange Commission (SEC), and every bank institution reports in XBRL to the Federal Financial Institutions Examinations Council (FFIEC). Public companies reporting to the SEC use the taxonomy originally developed by XBRL US. Ongoing development and maintenance of the taxonomy is handled by the Financial Accounting Standards Board (FASB). This taxonomy, the U.S. GAAP Financial Reporting Taxonomy, contains thousands of financial and industry terms, covering primary financial statements as well as disclosure data.

XBRL is also used for government reporting around the world, with the largest implementations in Australia and the Netherlands. Private companies in the UK report their financials in XBRL format to HMRC (Her Majesty’s Revenue & Customs) for tax purposes. In the U.S., the Digital Accountability and Transparency (DATA) Act, requires U.S. Treasury and the Office of Management and Budget (OMB) to implement data standards to report government agency expenditures. The DATA Act will result in government spending reported in XBRL format by 2017.

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5 http://www.fasb.org/jsp/FASB/Page/LandingPage?cid=1176164131053
7 Standard Business Reporting Program (Netherlands): http://www.sbr-nl.nl/english-site/
8 HMRC, corporation tax filing in XBRL: http://www.xbrl.org.uk/projects/hmrc.html
9 DATA Act: https://www.usaspending.gov/Pages/data-act.aspx
How the XBRL Data Standard Could Support Surety Underwriting

XBRL can automate the process of bringing data needed for underwriting into the surety’s financial system. Once the data is entered into a contractor’s XBRL-enabled system, it can be exported into XBRL and also in traditional PDF or Excel format. XBRL creation tools on the market today are used by public companies filing to the SEC and can be adapted to create XBRL WIP data. Contractors would likely then forward both the XBRL and the traditional document to the surety.

To begin consuming XBRL-formatted WIP reports, sureties will need to perform a one-time mapping of the WIP Taxonomy to the concept fields in their financial systems so that, going forward, data from any WIP report will be immediately recognized. Mapping tools that work with the XBRL standard are available and used today with taxonomies for different reporting domains and can be adapted to work with WIP data.

Once the documents are received by the surety, its financial system will be able to automatically ingest the XBRL version of the WIP report and begin evaluating the project immediately, without the need to re-key. The surety can then follow its traditional method of analyzing and reviewing the contractor’s data to perform its underwriting process. For example, its system could send an alert to the underwriter and make the data available on a staging platform where it can be reviewed and approved, or it could be automatically ingested into its database. Each surety follows its own process to validate, review and analyze the data. The only change in that process is to eliminate the time-consuming and low-value-add data entry.

Pro:

- Establishes industry-driven, agreed-upon definitions and labels for data that must be reported by contractors.
- Enables the “tagging” or embedding of metadata into reported values, e.g., Estimated Revenues, Estimated Costs, Percent Complete.
- Renders financial data computer-readable so it can be automatically ingested into analytical systems. Uses a consistent method to handle financial data features, such as time period, units, decimals, currency and tables, and is a feature not available in XML. This consistency is critical to ensuring that reported data is comparable from contractor to contractor.
- Is a free and open standard used for reporting by entities around the world.
- Allows for changes in reporting needs over time. If sureties need additional items reported or existing concepts changed, revisions could be easily handled through a central digital dictionary of terms that all are able to access.
- Allows an individual contractor to add items that are unique to its own situation because of the extensibility of XBRL.
- Allows for the creation of validation rules to check data reported by the contractor when inputting data and/or by the surety when extracting data into its financial systems.
Con:

- Requires an implementation program, bringing together representatives from the supply chain, including contractors, sureties, bond producers, accounting firms and software providers to establish the agreed-upon digital dictionary of terms (taxonomy). Collaboration from all parties that create or use the data is important to ensure that the needs of all stakeholders are met. Software providers that work with contractors and sureties must also be engaged so that they are able to adapt their tools. This process necessitates organizations that may compete with each other working together as an industry to establish an agreed-upon standard.
- Contractors, CPAs and system vendors will need to create XBRL-formatted WIP and financial data, which may result in contractors incurring added cost and resources. Early in the adoption cycle, there will likely be additional costs required; however, it is anticipated that these costs will decline over time such that there will be zero added costs to the contractor’s process.
- Sureties will need to prepare their analytical systems to consume XBRL-formatted financials and WIP data.

Recommendation

This paper recommends industry adoption of the XBRL standard to automate data collection in the surety underwriting process:

1. Contractors (through their CPAs or systems) submit financials and WIP reports in XBRL format along with traditional files (PDF, Excel) to the surety.
2. Sureties adapt their financial systems to enable the consumption of XBRL-formatted data.

While Alternative 1 (Excel) appears to be the simplest, low-cost solution, it is ultimately not a workable option and will not produce any cost-savings or efficiency improvements either in the short- or long-term. Alternative 2 (XML) is a slightly better option but would result in inconsistent, incomparable data that requires interpretation by the surety. The XBRL standard, however, leverages the tagging feature of XML but adds the structure needed to properly convey financial data efficiently and accurately.

The XBRL US WIP Taxonomy

To move forward with data standardization, the working group referenced earlier was established to develop an initial release of an XBRL WIP Taxonomy to share financial information related to work in process on construction projects. The working group represents contractors, bond producers, sureties, accounting firms and systems providers. The taxonomy, an excerpt of which is depicted below was designed to support a wide range of WIP reports and related information. Although it includes all the necessary components, the description of individual contracts can vary from filer to filer. To facilitate this variability, XBRL tables are used to allow filers to report a variable number of construction projects. The taxonomy also includes a number of flags to indicate project completeness and grouped contracts or to indicate if a loss has been recognized.
The WIP taxonomy is a discrete entity, in that it can stand alone as its own taxonomy. The WIP taxonomy incorporates both the FASB GAAP Financial Reporting Taxonomy and the SEC taxonomy developed to report Document Entity Information (DEI); and it is structurally similar to FASB and SEC taxonomies. These taxonomies are referenced by the WIP taxonomy so that existing XBRL filers (public companies required to report financials in XBRL to the SEC) can easily incorporate the WIP reports into an XBRL filing. This feature eliminates the need to create duplicate elements in the WIP taxonomy for those defined by the SEC and FASB and referenced to requirements and standards set by these organizations. This is transparent to the current users of the taxonomy, but it would allow integration of the WIP taxonomy into FASB taxonomies at a future date.

An XBRL implementation requires an initial investment by contractors, sureties, accounting firms and software providers; but it creates a sustainable model that can adapt to changes in reporting needs and can offer significant savings and efficiencies to all members of the supply chain over time. Savings and efficiencies recognized will far outweigh the initial investment. Data can be transferred automatically from contractor to surety, reducing the time and cost of the manual labor spent re-keying information every time a new set of financials or WIP report is submitted.

**Risks and Mitigation**

Risks to industry adoption of XBRL include:

- Most contractors are private companies that do not file their financials in XBRL format to the SEC; therefore, the majority have no process or tools in place to conduct the necessary XBRL tagging.
Sureties will be required to map their internal financial systems to elements in the WIP Taxonomy before they can begin ingesting XBRL data.

**Added Cost and Steps Required by Contractors**

The immediate benefit of the data standardization proposed will initially be recognized by sureties, which will be able to streamline their process. The cost of formatting the WIP into XBRL will be borne, however, by contractors, which can be large or small companies, some public but the vast majority, private.

Public company contractors have been filing in XBRL format to the SEC for years, using the GAAP Financial Reporting Taxonomy, leveraging one of the many tools or services available on the market. The cost of XBRL formatting for small public companies filing their full financials in the U.S. has been estimated at an average of $10,000 per year (median $8,000).\(^{10}\) But private companies in the UK (2 million companies report tax information to HMRC Tax Service Online\(^{11}\)) file financials in XBRL for tax purposes for significantly less. They use a technology called inline XBRL, which effectively creates a combined XBRL/HTML document. It is estimated that 90%\(^{12}\) of these companies have zero added cost because the XBRL-formatting is embedded in the software tools they use.

**Mitigation**

Contractors today create the WIP primarily through direct export from their financial systems. The working group has engaged tool providers to create applications that work with the XBRL WIP Taxonomy and to accurately gauge the true cost for contractors. It is expected that XBRL formatting ultimately will be integrated into standard financial packages used by contractors so that it will simply be part of their standard process, effectively bringing the XBRL creation cost down to zero. We recognize the importance of cost in the adoption of XBRL for WIP reporting.

It is also important to note the benefits of standardization to contractors as well as sureties. The availability of computer-readable WIP data will increase the responsiveness of the sureties, which is beneficial to the contractors providing them. The faster the surety can analyze the WIP and adjust the backlog, the more responsive it can be to the contractors for surety credit. Computer-readable data will also encourage the development of more analytical tools for contractors in the marketplace, which can be leveraged to analyze project data more efficiently, accurately and timely.

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\(^{11}\) http://www.xbrl.org.uk/projects/hmrc.html

\(^{12}\) According to the HMRC’s former Strategy Architect for the Company Tax online service, an estimated 90% of filings are at zero cost to the issuer because most companies (continue to) use packaged tax and accounting software to which the vendors added Inline XBRL production capability as an alternative to printed output. The remaining 10% of companies outsource their inline XBRL conversion to accounting firms with estimated annual costs ranging from as low as $135 to as high as $4200.
Sureties’ Cost to Ingest XBRL Data
Sureties will be required to bear the cost of mapping their internal financial systems to recognize elements in the WIP Taxonomy.

Mitigation
Mapping is expected to be a one-time process that will allow sureties to consume XBRL data from any contractor. The benefits of automating the extraction of this data will far outweigh the initial mapping cost.

Conclusion and Next Steps
Now that the initial release of the XBRL US WIP Taxonomy has been published, the working group is seeking participants for real-world case studies to prove out the process for both the contractor and surety.

Any organization on the surety supply chain, including software vendors that serve either surety or contractor, accounting firms, bond producers, individual contractors or other sureties, are invited to participate. Varying levels of participation and commitment are available.
Members of the XBRL US Surety Working Group who contributed to this paper:

- AIG
- Gallina LLP
- Liberty Mutual
- NASBP
- Travelers
- Zurich
- Altova
- DataTracks
- Oracle

Participating organizations involved as observers and advisors:

- Construction Financial Management Association (CFMA)
- Financial Accounting Standards Board (FASB)
- The Surety & Fidelity Association of America (SFAA)