

ASSURANCE CONSIDERATIONS FOR INTERACTIVE DATA SOME RISKS AND MITIGATION TECHNIQUES

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Interactive Data, or XBRL, is poised on the brink of widespread adoption for corporate financial disclosures. Financial and performance reports published by public companies contain some of the most valuable information on the planet, capable of instantly moving markets. As we move towards the availability of this information in computer-readable form, it seems inconceivable that companies will publish and that market participants will accept data without independent external assurance.

This paper doesn't attempt to frame the policy questions associated with the scope of an XBRL audit. Instead it operates from the presumption that auditors should provide assurance on client financial reports published in XBRL.

The paper outlines the kind of risks for which auditors need to be on the lookout and suggests an initial range of techniques for mitigating or detecting material misstatement in XBRL reports. Some tentative conclusions about the key issues for management and auditors are reached.

INTRODUCTION

How will assurance be provided on interactive data?

Interactive Data is the term coined by SEC Chairman Cox for the eXtensible Business Reporting Language (XBRL) and other related technologies that allow companies to publish performance information in a structured, machine-readable format. Often termed "bar codes for financial statements", XBRL has a very wide application in business reporting of all types. There are plenty of resources on the web that describe the way that XBRL is used today and the way that the accounting, software and financial communities expect it to be used as the business reporting information standard becomes part of the electronic landscape.

An awful lot of those pages describe a revolution in financial reporting: a new way of managing definitions and moving data around, leading to a faster financial close; more sophisticated investor relations; visibility for small and medium cap corporations; simplified regulatory reporting across international boundaries and, at a macro-economic level, better capital allocation.

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While consumer interest in independent assurance on XBRL formatted company financial reports was voiced (Trevor Harris, Morgan Stanley; Greg Jonas, Moody's) both during the US SEC Round Tables held in the summer of 2006 and, more recently, when the CFA Institute indicated by way of a survey that its members expect assurance to form part of XBRL filing, few companies have actually requested assurance on their initial XBRL financial reports. Auditing standards, like information format standards or reporting standards, typically follow market demand. As such, the development of relevant audit standards, while started in some individual territories, have not yet produced any publicly available assurance standards relevant to XBRL formatted company reports. Perhaps the profession needs some encouragement to work with clients and regulators on this issue.

This paper explores the key aspects of XBRL documents that might introduce a risk of misstatement or be particularly open to fraud, describes why assurance around XBRL documents is important and why assurance standards should be developed. It then suggests some of the techniques that might be used to conduct those tests and concludes with some tentative suggestions about the steps that management and their auditors need to consider.

Who should read this paper?

All assurance professionals who need either to determine what is involved in reviewing XBRL documents or to understand how to develop systems and methodologies for testing XBRL documents, should read this paper to understand some of the key issues and initial suggested responses.

CFOs and Controllers, who are (or will be) responsible for the production of XBRL materials that need to be submitted to a securities regulator, should read this paper in order to understand some of the main areas of their draft filings that will need to be reviewed. They should also become familiar with the steps that the audit profession will need to put into place. Although, initially, companies should expect some transition pain while systems and processes are set up and staff are trained, in the relatively short term this effort should be straightforward, efficient and cost effective.

BACKGROUND

Assurance

The process of examining and reporting on a financial report is known as financial statement assurance and involves the provision of an independent opinion by a qualified auditor about the relevance, accuracy, completeness and fairness of the financial statement. The auditor's processes are designed to ascertain that, taken as a whole, the financial statements are free from material misstatement and present a true and fair picture of the state of affairs of the enterprise. To learn more about the financial audit process, start with the IFAC published ISA200 standard, entitled "Objective and General Principles Governing an Audit of Financial Statements". The assurance process does not provide a guarantee that an individual number in a table or the text of an explanatory note is completely accurate. The audit provides an opinion about the fair presentation of the financial statements as a whole and is, therefore, unconcerned with individual immaterial errors.

Need for Assurance upon Interactive Data Reports

Securities regulators and companies registrars around the world are overseeing the provision by companies of XBRL (or interactive data) reports to data repositories

like the US EDGAR system, or similar national systems that operate within Exchanges and other disclosure environments. Of course, today, many are merely in the planning, monitoring or analysis stages of this exercise, while others, such as the SEC, the Canadian Securities Administrators, Spain's CNMV, the UK's Companies House and the Swedish Bolagsverket have systems already in place, as well as securities regulators in Japan, Korea and China. Some, like CNMV and the companies registrars mentioned, are only accepting XBRL documents that conform to defined dictionaries ("taxonomies") that the regulator has created or adopted.

Others are accepting XBRL documents that include "extension taxonomies" developed by companies themselves. This capability provides considerable power and flexibility to companies, allowing them to represent their financial accounts in XBRL exactly as the company has prepared them. There are clear investor relations and analysis advantages to reporting using an extension taxonomy that precisely tailors an accounting dictionary to the disclosures of a particular enterprise. These advantages are sufficiently compelling that it is no longer an exaggeration to suggest that the vast majority of public financial reporting worldwide will become XBRL-based in the fairly near future.

As yet, there are no audit or assurance standards relevant to companies filing in this format. The point of XBRL is to smooth and, as much as possible, automate the transfer of performance information from organisation to organisation. Naturally, organisations receiving information in this format will want to act on it, and often enough, that will mean acting on it in the marketplace.

Whether companies are reporting from a fixed or flexible dictionary, there are a variety of ways that account preparers, mistakenly or deliberately, can create their XBRL reports in a manner that will potentially mislead users. An additional, independent and external examination of the XBRL documents prepared by management should be conducted to ensure that investors quickly build confidence in interactive data.

This need not be an expensive or terribly time-consuming activity. Many of the suggested steps set out in this document can be automated. Others can be quickly and cost effectively embedded within existing methodologies and audit procedures. Crucially, a number require accounting knowledge and professional judgement.

KEY RISKS

This section attempts to explain some XBRL features that might be inadvertently or deliberately misused and that might therefore warrant some form of testing, including external assessment. This list is not intended to be exhaustive, although it is hoped that it covers the main areas. There are three classes of risk that need to be considered: instance, or data, document risks; risks associated with fixed (or closed) taxonomies; and risks associated with extensible (or open) taxonomies.

Instance (Data) Document Risks

XBRL "instance", or data, documents convey company performance information for a particular reporting period. Just like a financial statement, they may cover one or more reporting segments and can contain information that relates to more than one reporting period, including data restated from previous reports. What can

go wrong? There are a variety of risks, many of which are fairly easy to mitigate. Note well, however, that *these risks relate to filing frameworks that impose a fixed taxonomy (dictionary) on filers as well as more complex environments that allow company-specific extensions to XBRL taxonomies*. Let's start simple:

- > Identity information about the company can be wrong, inconsistent with other organisations, or can have changed from a previous filing, making it difficult to retrieve information about it or compare it with its peers.
- > Segment identifiers contained in the data document might be wrong, not line up with the intended disclosure or have changed from previous filings, making it difficult, or impossible to conduct segment analysis.
- > Scenario identifiers such as markers that characterise data as audited or unaudited, actual or budget, restated or reissued might be inaccurate, inconsistent internally or across entities, have altered from previous filings or be included erroneously. If a company erroneously or fraudulently marks *actual* data as *budgeted*, properly operating analysis systems will automatically discard the information or make it impossible to compare or consolidate with information from other companies.
- > Information about the period contained in the data document might be grossly or subtly inaccurate. Filing a report intended to relate to Q4 2007 as relating to Q4 2017 will make it difficult to analyse against prior filings, as well as against other company reports. Somewhat harder to notice at first, but just as problematic, a period identifier that covers the Q1 income statement might commence at midnight on 1 January, instead of midnight on 31 December, a 24 hour discrepancy in 90 days. This would be, at first glance, a small change, but it's enough to cause analysis systems to treat data from that document in a different manner to all of the others, creating, in effect, electronic apples and oranges.
- > Currency identifiers contained in the document could be wrong. An instance document filed in Germany that erroneously marks all of its monetary values as being in Polish złoty (but that should be in Euro) will be either incomparable to other filings, or, where the analytic system is advanced enough to carry out conversions on the fly, just be wrong.
- > Precision measures contained in the instance document could be incorrectly or intentionally malformed. As we shall see later, this can have adverse consequences on calculations contained inside the document, but it can also lead to inaccurate data for analysis. A value of 1,732,000 with a precision measure of "1" will be consumed by analysis systems as 2,000,000 because the precision indicator states that only the first digit is significant and consuming tools will round up.
- > Technical reference information used to classify the instance document can point at the wrong taxonomies, making it difficult or impossible to compare with other filings and could, in any event, relate to concepts with wildly different definitions. This is the electronic equivalent of stating at the outset that your report is entirely unique and conforms only to definitions that you have created yourself. It's like writing a report in Latin for an English audience. The reader might understand a few words here and there, but the meaning and, more importantly, the comparability, will be lost.
- > The instance document needs to be XBRL-valid in order to be accepted by regulators and third parties. Validation can perhaps be compared to a compulsory grammar and spelling check. Other users of the document can't commence their work unless they know that the data complies with the language. Fortunately, with wide availability of validation tools, this is the easiest aspect of the entire review effort.

WHAT'S THE DIFFERENCE BETWEEN A "FIXED" AND "OPEN" TAXONOMY?

Taxonomies are the dictionaries of concepts that can be used for XBRL reporting in specific environments. US-GAAP is different from IFRS. The Japanese FSA's reporting requirements about bank risk portfolios are different from those of the Netherlands Statistics Agency's data collection system imposed on the 27 Waterschappen, or water boards.

So, different taxonomies are used for different kinds of reporting. Perhaps slightly less obvious is the difference between fixed and open taxonomies.

Fixed taxonomies are reporting frameworks tied down by the organisation or agency collecting the information. Think of it as a form. Users of fixed taxonomies can only prepare data in conformance with the definitions provided by the taxonomy authors.

Open taxonomies are reporting frameworks that are not constrained in this way. They much more closely resemble accounting standards and example disclosures. They provide a base set of concepts, which underpin all reporting in that environment, ensuring broad comparability across that environment. However, it is possible to extend those definitions to suit your own circumstances. In this way, XBRL facilitates reporting of the unique aspects of a company's performance as well as the comparable aspects of that performance.

Want a simple analogy? Open taxonomies are loose leaf dictionaries that allow you to add pages that define your own words. Closed taxonomies are bound books.

> Base reference information can be wrong, pointing, for instance, to a local copy of XBRL specification files instead of the official ones. This has a similar effect, in electronic terms, to a Japanese reporting company unilaterally declaring that its filings will be published and must be analysed in Elvish: no matter how internally consistent the rules of the language being invoked are, the result might just as well be gibberish.

As we shall see, all of the key risks set out above can be relatively easily detected, either automatically or with minimal human intervention. One important factor in these types of risks is that they can be very significantly mitigated by the publication and enforcement of fairly simple data document constraints. As XBRL reporting progresses it might become clear that some of these constraints need to be built into the standard, but at this stage they represent a simple add-on to data collection frameworks being created by regulators, exchanges and company registrars and in many cases just represent common sense.

There are, however, three more data-document risks, all of which are much harder to catch automatically:

> Reporting data using the wrong tags means that the information in the report is, overall, less usable and that the report is less accurate. This is the XBRL equivalent to printing the bar-code for tomato soup on a can of potatoes: fairly fundamental, but also relatively easy, given the number of tags that you can choose from and the similarity of many of the identifying labels and definitions.

> Reporting the wrong data against the right tag. The analogy here is associating the price for frozen chickens with packages of premium fresh free range chickens. Again, this is a relatively simple mistake to make (deliberately or accidentally) and a fundamental problem.

> Failing to mark up a concept that should be marked up means that information that should be in a report is missing, just as if it were left out of a printed report. Note that the word "should" in this area is, deliberately, a subjective one.

It is worth pointing out, however, that these risks in particular, lend themselves to identification by the audit professional far more than the otherwise well qualified reviewer. Determining the right tags to use in a given situation, as well as quickly coming to accurate conclusions about whether the right data has been associated with those tags involves a deep understanding of financial disclosure rules as well as a significant degree of professional judgement

Fixed Taxonomy Risks

Many regulators, as well as some credit analysts, are using fixed XBRL taxonomies to collect the same information from a large number of respondents. The good news about fixed taxonomies is that there are not that many things that can be done to them to introduce a potentially serious misstatement. For regulators like the US FDIC or Spanish CNMV, the main concern will be the integrity and accuracy of the instance document itself. However, from the auditor's perspective, there are a couple of points that need to be considered. It is important that:

> No alterations to the taxonomy are being attempted by the instance document being submitted to the regulator. It is possible (almost certainly a malicious act in these circumstances) to extend any kind of taxonomy. For organisations that

The main ways that companies preparing financial statements and other kinds of disclosures will want to extend base taxonomies are set out below, by way of example:

1. Override labels. The IFRS taxonomy contains a concept called “Biological Assets” which, while relevant, probably doesn’t convey what a Dairy company is trying to convey. That company might well override the label “Biological Assets” with the more specific term “Milking Herd”.
2. Override calculations. The UK-GAAP taxonomy contains a section for wage costs in the “Operating Costs” section of the income statement, but executive director costs are specifically excluded. A small company might find that this suggested calculation does not meet its needs, and include “Executive Remuneration” within “Operating Costs” by overriding the base taxonomy.
3. Override presentation. There are many situations in which the order in which elements are displayed in a taxonomy might not meet the needs of a particular company. For instance, a company might decide that in its disclosure of Inventory, “Supplies” should come before “Raw Materials”, because of the relative materiality of these concepts in its environment. They would therefore override this presentation in the US-GAAP taxonomy.
4. Prohibit section. There are endless examples of circumstances in which a company might prefer to prohibit (that is, electronically excise)
5. Add concepts. The Canadian GAAP taxonomy doesn’t have a concept to cover Research and Development Tax Credits. A bio-tech company might find it necessary to add a concept of this sort into the taxonomy in order to portray its financial condition properly.
6. Add dimension member. There are a number of circumstances in which companies using the new XBRL-US GAAP taxonomy will need to add dimension members to the framework in their extension taxonomies. The most obvious of these is probably for segment reporting. A company that reports three business lines in its segment reporting will need to define those business lines in its extension taxonomy.

THESE RISKS ALSO RELATE TO CLOSED TAXONOMIES.

Remember that for many closed reporting applications, extension taxonomies are also used. For instance, a subsidiary company is likely to extend a base taxonomy created by HQ, even though forms are used to capture performance. The COREP project is a good example of national modification to a base international taxonomy. Similarly, some closed taxonomies use extension techniques to manage versioning. The main risks associated with extension taxonomies relate to incorrect or malicious application of one or more extension mechanisms and it is unlikely that official extensions to base taxonomies will suffer from these problems. Preparers and users should, however, bear the possibility in mind.

are only accepting data documents that conform to the fixed taxonomies that they themselves have published and have control over, it is vital that the instance document not attempt to override the fixed taxonomy. While most data collectors will have controls of this sort built into their reporting environment, it is a prudent (and simple) test to carry out for the assurance professional.

> The correct version is being referenced by the instance document. Reporting obligations change over time and the version of a fixed taxonomy that instance documents need to conform to will change over time as well. This is the XBRL equivalent to filling in this year’s tax return using the form printed two years ago.

Open Taxonomy Risks

To understand what sort of assurance requirements arise from the availability of open taxonomies (like the environment currently in place at the US SEC and Canadian CSA) it is first useful to understand the ways in which taxonomies can be extended. The sidebar describes six different mechanisms.

Extension taxonomies are extremely powerful and in most respects are the *raison d’être* for the way that the XBRL specification has been designed. The first risky aspects of this exercise are fairly obvious:

> Creation of a duplicate element that is used in place of a concept contained in a base taxonomy. This is pro-forma reporting, XBRL-style. Of course, there will be circumstances in which this is legitimate². However, a concept created in a company-specific taxonomy and used in its filing, in place of a concept that exists in an official taxonomy which *should* have been used, at best, reduces clarity and at worst is deliberately misleading.

> Use of a base element where an extension should be created. Perhaps less obvious, but the reason that regulators and markets want companies to produce extension taxonomies, is so that their XBRL disclosures best represent their performance. In some circumstances it will be misleading to tag a concept with an official concept from a base taxonomy which is *not* really comparable.

As an aside, note that this is an area that the analyst profession is still coming to grips with: the purpose of XBRL is not to make all companies instantly comparable. XBRL merely allows the accounting framework in place within particular countries to be modelled, which allows those (very significant) parts of company disclosures that are equivalent to be compared. Where companies disclose unique aspects of their operations, they should be disclosed with extension concepts. No doubt the infomediaries will develop products that link similar concepts across peer groups and many analysts will use this value-added information. Larger investment houses will create their own.

> Illegitimate prohibition of an element that should be used in a report but that the company eliminates from the consolidated taxonomy. There could be innocuous reasons for this, but it could also be because the report preparer has chosen to disclose this concept only in a form that isn’t machine readable. Less sophisticated

²For instance, where a concept being disclosed has a materially different definition to the one published by the relevant accounting authorities (or in some cases because of an error in an official taxonomy). Generally, accounting rules provide that these types of disclosures need to be *additional* to the “official” figure or note.

regulatory systems could easily overlook the omission because their validation process will, in fact, be blind to the change. This issue is the taxonomy corollary to leaving a concept out of an instance document because of an oversight or perhaps through inconvenience.

> Extension taxonomy is unnecessarily duplicated. Once an extension taxonomy has been created by a company, it should be published and used across multiple reporting periods. A company that in Q1 creates an extension taxonomy to facilitate a segment disclosure, by creating a dimension member called “Games Division” and then, in Q2, creates an identical but entirely new extension called “Games” to represent the same thing will hinder analysis.

> Misleading or inaccurate label is assigned to a concept in the base taxonomy by the company extension. This is hardly a show-stopper, as the first thing that many analysts will do is replace company labels with those in the base taxonomy (or indeed, their own set). However, a disclosure that has a label called “Tax Paid” against a concept called “TaxProvidedFor” is misleading and should be captured by the assurance process.

> Inappropriate taxonomy extension refers to situations in which, for instance, companies create new taxonomy concepts that are entirely unnecessary or inaccurate, notwithstanding technical XBRL validity. Examples seen in the wild would include creating a concept called “Opening Balance Cash On Hand”, which should be modelled as a preferred label in the existing “Cash On Hand” concept. Another would be the creation of a concept called “Cash On Hand – 2007” which should never be done – the date associated with a concept is done within the contexts in the instance document.

Further on some techniques for identifying these issues are suggested.

Problems with XBRL Calculations

This section covers a much maligned aspect of XBRL: the calculation definitions. Unfortunately, the way that calculation definitions (technically called a “calculation linkbase”) are used, for instance, to add up items on a Balance Sheet, is brittle and in many respects incomplete³. As a result it is easy to create problems and in some cases those problems can be misleading.

Let’s start by understanding some of the problems that can arise.

If a base taxonomy sets out a calculation relationships of the following sort: $X=A+B+C$, and $C=D+E$, then there are multiple ways that the validation of that calculation can be broken. They include:

Not disclosing a component of the calculation. If an XBRL data document contains X, B,C,D and E, then (even though the missing value can be simply derived) the document will fail to validate completely.

Not disclosing a sub-total. Similarly, if the sub-total C is missing, then the validation rules of XBRL require validation software to reject the submission, notwithstanding the capacity of a system to derive the values contained in the calculation.

³The XBRL consortium is working on this failing, and is developing a very powerful “Formula” module that lets users define essentially any kind of mathematical relationship or analytic. However, its use will be optional and in many cases will be unnecessary

In practice, the impact of calculation inconsistencies, as this class of warnings is known, can be small. Many regulators discard them, regarding them as containing too many false positives. This might be true, but it is poor practice to allow such inconsistencies.

In general, companies and reviewers alike should be concerned to ensure that their calculation definitions work. Apart from anything else, it assists a range of review techniques if calculations “foot”.

SUGGESTED TESTING TECHNIQUES

Having identified a number of areas that might, depending on the materiality of information being disclosed, introduce a substantial risk of misstatement, we will now turn to ways in which instances of these risks can be identified.

Many aspects of these documents can be automatically reviewed, by creating tests that take into account the company’s circumstances and the base taxonomy against which the company is reporting. On the other hand, there are aspects (particularly relating to the choice of reporting tags) that need expert insight. Aspects of this type of review also lend themselves to more sophisticated automated support. These kinds of heuristic systems can only play a supporting role. Judgement about the relevance and accuracy of tagging decisions requires human expertise.

While, over time, we could expect that software used by companies to produce or validate XBRL documents would incorporate many of the automated tests that can identify some of the risks outlined in this paper, it is essential that they also be run, separately, and independently by either the auditor or the regulatory body that is receiving this information. On balance, whatever the regulator puts in place, it would be prudent for automated testing to form part of the auditor’s procedures when working with draft documents. Some in the audit profession consider that risks that can be mitigated by purely objective review should not form part of the audit. Whatever mechanism is arrived at for reviewing interactive data reports, it needs to include, overall, both objective and subjective review.

Areas of review that can be largely automated

Either because a regulator requires it, or because it is the logical corollary of a market demand for assurance, the publication of any report that needs to be examined by an auditor involves either an implied or explicit management assertion about the accuracy of that report. Each area of examination can, therefore, be thought of as a response to an assertion about the report being looked at.

In reviewing draft XBRL filings, auditors should seek to automate as many aspects of the review as possible. Typically this will involve creating a profile of a regulator’s requirements and a company’s core reporting information and automatically testing each draft filing against a number of requirements. This would include:

- > Independently verifying the identity information that a company needs to use in its disclosures and confirming that each disclosure document conforms to it.
- > Confirming the structural information associated with segment disclosures, recording it, and ensuring that both extension taxonomies that define such disclosures and instance documents that use those segments do conform to it, consistently.

- > Similarly with scenario identifiers, where regulators have defined scenarios such as “Audited” and “Unaudited”, auditors’ systems should examine company draft filings for conformance with these requirements.
- > Auditors will need to identify the periods that are being reported and ensure that draft reports conform to what the regulator will expect in this area.
- > Auditors’ systems will need to report, probably on an exceptions basis, the use of unexpected currencies in a draft report.
- > Auditors’ systems will need to simplify the process of ensuring that precision indicators are accurate against each section of the report. There are a variety of ways in which this can be done.
- > Auditors will need to develop systems that check that base and extension taxonomy references contained inside draft filings are the right ones.
- > Auditors will need to develop systems that provide core XBRL validation messages and warnings in a manner that can quickly be acted on by audit teams.
- > For fixed taxonomies, auditors should, as a matter of course, ensure that no taxonomy overrides are being attempted by the draft filing.
- > For open taxonomies, auditors’ systems should help them ensure that extension taxonomies do not override base taxonomies in their entirety. Of course, extension taxonomies and changes to extension taxonomies from time to time will need to be examined in some detail (see below).
- > For open and closed taxonomies, auditors’ systems should ensure that the calculations ‘foot’.

While the above infrastructure will no doubt become sophisticated over time, the initial steps involved are relatively modest.

Mapping Tests: Areas that require professional judgement

While any of the issues discussed in the previous section could, in theory, very adversely impact a financial report, the areas that auditors are likely to be most concerned about relate to missing concepts, incorrectly disclosed concepts, incorrectly mapped concepts and incorrect values. Review of these areas needs considerable subject matter expertise and professional judgement to determine their appropriateness. However, here we set out some initial suggestions about the best way to conduct a review in this area. We’ll refer to this part of the exercise, generically, as “mapping tests”.

Materiality thresholds should be used to simplify the scope of examination

We expect that mapping tests should in all likelihood be done with a materiality filter. In other words, the only areas in which the auditor should spend time tracking down the mapping decisions made by companies are those that could have a material impact on the financials overall. Materiality thresholds can be simply defined and those concepts automatically highlighted. More sophisticated materiality trapping (for instance, highlighting those concepts that have substantially changed from period to period) will no doubt also be incorporated into the processes that auditors design in this area.

Automated benchmarking should be used

As the number of XBRL filings in any given environment starts to become substantial, it will be possible to provide some automated assistance to the otherwise difficult task of conducting a mapping test. Systems will be able to

highlight discrepancies between the mapping decisions made in a draft filing of a company and those of its peers.

Automated label matching should be used

In reviewing mapping decisions, auditors should have access to systems that can automatically parse disclosure captions and match them up with both the labels contained in the taxonomy and aliases for those labels that are used within that industry. This type of system will be able to assist both the review mapping decisions and the value mapping that has been carried out by the company.

Isolate and carefully review extension taxonomies

Auditors should extract concepts associated with extension taxonomies and pay particular attention to the rationale and validity of the extension decisions made by the company, as well as the consistency with which extension taxonomies are used by the company. Sophisticated masks that look for anomalous types of extension taxonomies will form part of the auditor's arsenal in this area in the not too distant future.

Minimise "tick and tie"

It is hoped that with the assistance of some of the systems-based techniques set out above the level of "tick and tie" that is carried out, manually, by auditors can be minimised, although it will not be eliminated. Professional judgement needs to be exercised by company accountants in creating XBRL filings and by auditors in testing them.

These suggestions are not intended to be comprehensive, but hopefully will assist auditors to frame their thinking in this field.

Tentative Conclusions

Now that XBRL is becoming a real aspect of the financial reporting landscape, it is essential that the audit profession should rapidly develop techniques to deal with testing these documents. It is important that these techniques be developed through real-world experience, working closely with clients, with regulators and the specialist XBRL software vendors. Of course, it is to be hoped that relevant authoritative literature can then be quickly derived from this real-world experience.

It is possible to come to some tentative conclusions about this process:

1. Clearly, external testing by professional auditors of draft XBRL documents as part of a professional audit or attest engagement needs to be an integral part of the publication of market sensitive financial disclosures in XBRL form. Auditors need to be involved because no matter how many risks can be tested automatically there will remain a core set (the important ones) that require subject matter expertise and professional judgment to be used in order to arrive at appropriate conclusions.
2. Software vendors can play a part in this exercise by incorporating a range of tests into their tools. This should assist preparers in the development of high quality XBRL documents, but it will not prevent companies from making poor decisions about how to tag aspects of their disclosures, nor prevent them from incorporating errors in the data that they associate with those disclosures. Nor will it in any way

assist in the capture of errors introduced from outside of those tools, either through oversight or fraudulent intent. It is therefore important that auditors carry out their own tests, preferably using different software.

3. Regulators can and should incorporate a range of tests into their own validation processes to ensure data quality and should define a set of quality requirements for XBRL documents filed with them. This does not obviate the need for auditors to carry out their own tests.

4. The XBRL International consortium can, in all likelihood, impose some consistency on certain of the tests that can be automated by incorporating some of them into its own specifications. This will take time and should be reactive. In other words, changes to the specification should only be made once a set of best practices can be observed in the market place.

Without measured, but effective, audit techniques in this field the markets will be left without a trusted measure for this, most valuable, information. Creating these techniques is not a daunting task but it does require effective collaboration and substantial education. Hopefully, this paper plays a small part in helping that process along. The next step in this process is via examples and workshops to flesh out the risks that need to be captured and to develop a definitive list of areas that management is implicitly asserting and, conversely, that auditors should explicitly examine.

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