21. Vision of the Semantic Web

Throughout this book we have endeavoured to show you how what XBRL is, how to create XBRL taxonomies and instance documents, and other wise how to use XBRL.

In this section we endeavour to help you see what it means if there were millions or maybe billions of XBRL documents out on the internet, along with the other millions or billions of other XML documents. All these documents were organized in some manner and computer applications can locate them and extract and use data from them.

The focus is what would life be like in the financial reporting supply chain if XBRL were used. Clearly this is speculation; but this is knowledge speculation, rather than hype.

This vision is communicated through a general explanation and a few brief use cases.

You may not understand terms such as RDF (Resource Definition Framework), OWL (Web Ontology Language), Topic Maps, WSDL or other terms; but these things will have a significant impact on the future of financial reporting. Change is inevitable. XBRL is the financial reporting supply chain's contribution to the semantic web.

21.1. What is the Semantic Web

On the W3C web site there is a document which describes the vision of the semantic web. See http://www.w3.org/2001/sw. Here, there are several documents which describe the vision of the semantic web.

First, some brief definitions from these documents which will frame this discussion:

- "The Semantic Web provides a common framework that allows data to be shared and reused across applications, enterprise, and community boundaries."
- "The Semantic Web is an extension of the current web in which information is given well-defined meaning, better enabling computers and people to work in cooperation." – Tim Berners-Lee, James Hendler, Ora Lassila, The Semantic Web, Scientific American, May 2001.
- "The goal of the Semantic Web initiative is as broad as that of the Web: to create a universal medium for the exchange of data. It is envisaged to smoothly interconnect personal information management, enterprise application integration, and the global sharing of commercial, scientific and cultural data." http://www.w3.org/2001/sw/Activity, Semantic Web Activity Statement.

While the Web in its first iteration can be called "the syntactic web" whereby a global agreement was basically agreed upon for the connection of all computers to the global network: TCP/IP, HTTP, FTP, and HTML. This was great, and the Internet is proving itself as a very useful tool for people interacting with web pages.

The semantic web takes this connectedness one step further: making the Internet friendlier for computers communicating with each other, without human intervention.

Sound pretty freakish; computers taking over the world! No need for humans! Why is THAT a good thing? Well, it is not about computers taking over the world at all. It is about computers doing boring work that computers can do well and humans can do and in fact have to do because the semantic web does not exist yet. Or, things that are not even possible because it is simply not cost effective to do it unless the semantic web exists.

The internet created as many problems as it solved. Talk about information overload. Web searches which return 100,000 hits.

In a great article by Peter Fingar, *A CEO's Guide to eCommerce Using Object-Oriented Intelligent Agent Technology*, he discusses intelligent agents and how they might serve humans.

21.2. Use Cases

What follows is a series of use cases which explain what the semantic web might be like in 2015. Again, the focus is financial reporting.

21.2.1. Real Time Reporting and Real Time Audits

Some people talk about real time reporting or even continuous reporting. Possible? Maybe; but it certainly will not be possible without real time auditing and continuous auditing.

21.2.2. Applying for a Commercial Loan

Banks spend a lot of time collecting data about companies which they loan money to trying to be sure their investments are reasonable. Today they receive paper reports and have rooms full of clerks keying data into their analysis models to track their outstanding loans. That is if they key the information in. This financial information is typically collected quarterly.

What if information were transferred to banks electronically rather than via paper. It would certainly be easier to get the data into analysis software. What if the process became efficient enough to submit data every 30 days, rather than every 90 days. Loan losses would likely decrease.

21.2.3. Pick Me, Pick Me, I am a Great Investment

In the US there are approximately 26,000 public companies. Of those companies about 5,000 are tracked by analysts. What about the other 21,000 companies in the US? And what about all the other companies around the world in Europe, Asia, China – maybe they are better investments.

What if Google had an intelligent agent which would scour XBRL based financial statements, look for promising entities, send humans to check out the best of the lot, and then could provide you with a 20% average return on investment rather than the 10% which you have today?

What a great tool for mergers and acquisition target assessment or even micro loans.

21.2.4. Disclosure Checklist, Audit Risk Assessment

Today audit reports are provided on the financial statement taken as a whole. What if auditors could analyse data better and report on individual pieces of data and even apply some weighting as to audit risk so consumers of the data could understand the risk better.

What if auditors could be guided by a disclosure checklist maintained by the national office of the firm, control the audit programs of every partner or provide a base audit program, allow the partner to modify, but then justify the modifications to the program and auditors could share information better and better assess the risk associated with a set of financial statements of pieces of data within a financial statement.

21.3. Extreme Financial Reporting

So what does all that we have seen in this book mean to financial reporting? What does it mean to all those who do financial reporting today, and how will what they do today change if XBRL is placed into the picture?

First of all, XBRL is a means to an end; it is not the end itself. Everything we can do with XBRL could be done before XBRL even existed. But XBRL does bring two important things to the table:

1. Leverage, therefore reduced costs. A lot of people will be using XBRL therefore software will cost less, therefore we can do more. In the past, systems using something like XBRL could have been built, but because there was no global standard, the number of users was less, so the cost was higher.
2. A global standard for financial reporting semantics. IFRS is being used more and more around the world, an IFRS taxonomy exists, the world agrees that the IFRS taxonomy is "the semantics", at least for IFRS. The same is occurring for US GAAP.

If XBRL was not a global standard, it could still provide leverage. Just as before XML, there were many ways of exchanging data; basically everything which XBRL brings to the table can be achieved using other globally standard and proprietary approaches. XBRL does bring to the table the taxonomies for IFRS and US GAAP which express financial reporting in a manner which can be understood by a computer application.

Even if XBRL itself did not exist as a language for exchanging data, a lot that was accomplished with XBRL is useful even without XBRL. One example is the taxonomies. If an accountant looks at either the IFRS-GP or the US GAAP taxonomy, they will understand their usefulness, even simply printed on paper.

"Extreme financial reporting" is more than XBRL. It is more an idea or a vision than a thing. And the name "extreme financial reporting" is not relevant, it is simply a name describing a package of contents. What is important is the package of contents. We will provide an overview of the concept and give a few examples to explain the concept.

21.3.1. Overview

So, what is "extreme financial reporting"? Well, extreme financial reporting has the following characteristics:

- It embraces an aspect of "extreme programming" whereby programmers build software to pass tests. Extreme financial reporting will be driven by business rules, if you have no violations of business rules, then the data is correct.
- Extreme financial reporting embraces International Financial Reporting Standards, IFRS. Why do we need more than one set of standards? This is a theoretical goal, which actually may be achievable. The other dominate financial reporting regime is US GAAP. There is currently a

project to converge IFRS and US GAAP being undertaken by the FASB. China is moving toward IFRS. Having two standards is almost as good as having one. The point is, there are not 90 different sets of financial reporting rules around the world.

- Financial reporting standards expressed using XBRL taxonomies before they are released, even before they are written; the market "drives" new accounting standards. New accounting standards will be released in XBRL, and there meaning will be clearer.
- It embraces the ideas of "continuous auditing" or "real time auditing"
- It embraces XBRL for articulating financial reports and for the consumption of financial information.
- It embraces the concept that transparency reduces the cost of capital.
- It embraces the ideas of SOA, Service Oriented Architecture for reporting, not paper.