Digital Financial Reporting Principles

Common Sense Insights for Representing Financial Information Using XBRL

A resource for professional accountants, external financial reporting managers, internal auditors, external auditors, financial analysts, regulators, filing agents, and other business professionals when creating, reviewing, auditing, analysing, or using XBRL-based digital financial reports; also helpful to software vendors building software to support business professionals

by Charles Hoffman, CPA

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"Quality means doing it right when no one is looking." – Henry Ford.

About the authors:

Charles Hoffman, CPA, is credited as being the *Father of XBRL*. He started his public accounting career as an auditor with the international firm then called Price Waterhouse, served various roles in industry and public accounting for over 25 years, and has worked with XBRL since its introduction by the AICPA in 1998. In 2006, he received the AICPA Special Recognition Award for his pioneering role in developing XBRL. He has authored numerous publications including *XBRL for Dummies*, a number of *Journal of Accountancy* articles, writes a blog relating to XBRL-based digital financial reporting, and contributed to a number of XBRL related technical specification and best practices documents. Currently, Charlie works as a consultant to CPAs and software vendors who want to better understand the subtle details of this new digital medium.

Charlie was co-editor of the first ever US GAAP XBRL Taxonomy, contributor to the *XBRL 2.1 Specification* and the *XBRL Dimensions* specification, editor of the *Financial Reporting Taxonomy Architecture* and *Financial Reporting Instance Standards*, co-author of the *US GAAP Taxonomy Architecture*, part of the project team which created the *US GAAP Taxonomy*, and a major contributor to the IFRS XBRL taxonomy for a five year period, and consultant to numerous other XBRL taxonomy projects.

Charlie is a consultant to accountants and software vendors who work with digital financial reports. He authors the blog *Digital Financial Reporting* which can be found at http://xbrl.squarespace.com/.

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Introduction

Whether you are an external financial reporting manager of a public company responsible for the creation of an XBRL-based financial filing which will be submitted to the SEC, someone on the team reviewing that filing, a third-party filing agent hired by a public company to create an XBRL-based financial filing, an internal auditor reviewing the filing, a third-party auditor providing agreed upon procedures to review the preparation of that digital financial report; if you don't have a proper comprehensive framework for checking your work you could:

(a) perform steps which do not contribute to the true and fair representation of the financial information reported,

(b) neglect to perform required steps necessary to prove to yourself that the information is a true and fair representation,

(c) be unaware of exactly what you are communicating within your digital financial report.

An appropriate, complete, rigorous framework and process is what accounting professionals need to property access the quality of the information reported within and XBRL-based digital financial report.

This document summarizes a set of common sense insights which have been distilled down to a handful of simple and easy to understand principles which apply to all XBRL-based digital financial reports. The principles apply to every digital financial report; every component which makes up that financial report, reported facts and characteristics of reported facts, and relations between those reported facts provided within that digital financial report.

These principles establish a framework so that unnecessary work is not performed and that all required steps are performed.

1.1. Evidence from comprehensive analysis of virtually all public company XBRL-based financial filings to the SEC

Looking at individual XBRL-based financial filings is helpful. Looking across many, many XBRL-based financial filings with a focus on one specific aspect of that financial report is likewise beneficial. Carefully and consciously comparing and contrasting many XBRL-based financial filings helps one build a mosaic, increasing ones understanding even more. Consciously comparing and contrasting XBRL-based financial reports helps one see and understand important and insightful information about those XBRL-based financial reports.

Contributing to assessing the information in this document is a thorough, comprehensive analysis[12] of 6,674 XBRL-based financial filings, all detail-tagged 10-K filings submitted to the SEC between March 1, 2013 and February 28, 2014.

[1] *Arriving at Digital Financial Reporting All Stars: Summary Information*, http://www.xbrlsite.com/2014/Library/AnalysisSummary_ArrivingAtDigitalFinancialReportingAllStars.pdf

[2] *Understanding the Minimum Processing Tests*, http://www.xbrlsite.com/2014/Library/UnderstandingMinimumProcessSteps-2014-02-14.pdf

1.2. Considering both the forest and the trees that make up the forest

When working with digital financial reports, it has been my observation that accounting professionals working with such reports forget about the "forest" into which the "trees" fit. In fact, many accounting professionals are most focused on the "leaves on the branches of the trees". This information focuses on trying to help accounting professionals understand the forest by looking at the individual trees which make up the forest. Further, this is not an analysis of how to represent specific accounting disclosures within an XBRL-based digital financial report. Rather, these principles are qualities which every financial and nonfinancial disclosure contained within a digital financial report possess.

While it is useful to examine individual public company XBRL-based financial filings, the vast majority of useful information comes from the comparing and contrasting how different public companies approached reporting their disclosures. It is the comparing and contrasting many public company XBRL-based financial reports that provides the best information. Comparing and contrasting reveals the forest into which the trees and the leaves on the branches of those trees fit.

If you understand the role that patterns play in the creation of software then you will also have an even greater appreciation for these principles. While this information is very helpful to professional accountants, it is likewise helpful to software vendors who endeavour to build software helpful to professional accountants who need to create quality digital financial reports such as XBRL-based digital financial reports which are filed with the SEC.

1.3. Understanding key terminology of a digital financial report

The following terminology sets a foundation for discussing these principles. These terms explain the framework within which all work to create or review a digital financial report[3] is performed. This terminology was first introduced by the *Financial Report Semantics and Dynamics Theory*[4] which derived these terms. This terminology is intended to have very precise definitions in order to enable precise communication. The following is a brief summary of these important terms:

- **Financial report**: Report which communicates financial and nonfinancial information about an economic or accounting entity to users of that report. Financial reports contain facts, characteristics which describe those facts, parenthetical explanations of facts, relations between facts.
- **Report component**: A report component is a set of facts which go together (tend to be cohesive and share a certain common nature) for some specific purpose within a financial report. For example, a "balance sheet" is a report component. The "Maturities of long-term debt" disclosure is a report component.
- **Fact**: A fact is reported. A fact defines a single, observable, reportable piece of information contained within a financial report, or fact value, contextualized

[3] *Digital financial reporting harnesses computers for speed, accuracy*, http://searchfinancialapplications.techtarget.com/opinion/Digital-financial-reporting-harnesses-computers-for-speed-accuracy

[4] See *Financial Report Semantics and Dynamics Theory*: http://xbrl.squarespace.com/fin-report-sem-dyn-theory/

for unambiguous interpretation or analysis by one or more distinguishing characteristics. A fact value is one property of a fact, every fact has exactly one fact value. The set of characteristics of a fact is a property of the fact. For example, *Cash and cash equivalents* of 100,000 for the *consolidated entity* for the current balance sheet date of *December 31, 2014* which is *reported in US Dollars* is a fact.

- **Characteristic**: A characteristic describes a fact. A characteristic or distinguishing aspect provides information necessary to describe a fact or distinguish one fact from another fact. A fact may have one or many distinguishing characteristics. For example, *line item concept Cash and cash equivalents* is a characteristic and the *calendar period December 31, 2014* are characteristics which describe a fact.
- **Parenthetical explanation**: Facts may have parenthetical explanations which provide additional descriptive information about the fact.
- **Relation**: A relation[5] is some interaction between the pieces which make up a financial report. Report components can be related to other report components. Reported facts can be related to other reported facts. Characteristics can be related to other characteristics. Business rules are a type of relation which describes computation type and logic-based relations. Classes or sets of concepts are relations.
- **Property**: A property is a trait, quality, feature, attribute, or peculiarity which is used to define its possessor and is therefore dependent on the possessor. A property belongs to something. For example, the color of a ball belongs to and is therefore is dependent on (is a property of) the ball. Financial reports have a set of properties. Components have a set of properties. Facts have a set of properties. Characteristics have a set of properties. Parenthetical explanations have a set of properties. Relations have a set of properties.

HINT: This video walks you through this foundational terminology: http://www.youtube.com/watch?v=uC-hrpxJ_fA.

1.4. Avoid creating a guessing game

Prudence dictates that using financial information in XBRL-based financial filings of public companies should not be a guessing game. Safe, reliable, predictable, automated reuse of reported financial information seems preferable.

Imagine if you had 100 different software applications which used 100 different software algorithms to unravel an income statement of an XBRL-based digital financial report. Why would software need to "unravel an income statement"? Well, because the US GAAP XBRL Taxonomy and/or SEC Edgar Filer Manual (EFM) don't force the information into a state where the information doesn't need to be unravelled and because public companies which file with the SEC don't take it upon

[5] *A Taxonomy of Part-Whole Relations*: http://csjarchive.cogsci.rpi.edu/1987v11/i04/p0417p0444/MAIN.PDF

themselves to make their information straight-forward and easy for a machine to interpret. Reading the income statement is a mechanical process performed by a machine. The machine needs to be able to interpret the information as the creator of the information intended.

That is the key: easy for a machine to interpret.

Humans are smart; machines such as computers are dumb. Computers only seem smart because humans meticulously constructed stuff to make the computers appear smart. For example, the information necessary to find and interpret the income statement must be provided to the machine.

Humans can figure anything out. The question is, do you want to do what is necessary for a machine to figure out a financial statement so that you can leverage what the machine can provide you if the machine can figure out what you want it to figure out.

1.5. Understand the purpose of a digital financial report

Agreed upon standard interpretations are critical to making a system work safely, reliably, predictably, and in a manner which can be repeated over and over without error. Philosophical or theoretical debates, trying to satisfy all arbitrary options, trying to meet every unimportant negligible situation, confusing what is objective and what is subjective, confusing policies with requirements and with choices only make something which could be sophisticated but simple into something which is complex, confusing, and can never be made to work.

Some people might believe that there is one absolute reality and that reality is their reality and that everything about their reality is important and they can compromise on nothing. Some people insist that everything involves judgment and that nothing is in any way subjective. But this is to miss the point.

The point being: a shared view of reality which is clearly interpretable and understood to achieve the purpose of meaningfully exchanging information so that time is reduced, costs are reduced, and information quality improves provides a benefit. The goal is to reach agreement so that the benefits can be realized.

The goal is to arrive at some equilibrium, to balance the duality of *standard/arbitrary*, to recognize that there is no singular objective reality but in spite of that, if we create a common enough shared reality to achieve some specific and agreed upon working purpose machines can be made to do useful work.

To make reality of the financial reporting domain appear to be objective and stable in certain specific and agreed upon ways in order to fulfil some higher purpose. The purpose is to enable a machine to read and interpret certain basic information such that manual human work can be effectively eliminated and that higher-level interpretations are then possible.

1.6. Understand that order must be created, disorder is the de facto state

Would it be better for an accounting professional to articulate information explicitly so that it is easy for software to understand exactly what the accounting professional is saying; or, do you want to let software applications do their best to guess what you are trying to communicate? Machines such as computers do well with things

that are explicit, unambiguous, and consistent. Machines such as computers do poorly with things that are implied, ambiguous, or inconsistent.

This is about a choice. How to achieve the appropriate result is known: be explicit, unambiguous, and consistent. The question is, do you consciously want to do what is necessary to make things work reliably, predictably, repeatedly, consistently, and effectively? Again, *Prudence dictates that using financial information in XBRL-based financial filings of public companies should not be a guessing game.* If using the information is a guessing game, the information will certainly not be reliable or predictable. The first step in understanding how to avoid the guessing game is becoming conscious of what makes it necessary for computers to guess.

Besides, there are advantages if reliable machine readability and therefore automated reuse worked correctly. For example, then machines can help you create the financial report. If you want those advantages, certain things need to be done to create order from the disorder. Order must be created. If you don't create order, disorder is the de facto result.

1.7. Distinguishing the mechanical aspects from aspects which require judgment

The information reported within a digital financial report or set of digital financial or nonfinancial information is an identifiable, definitive, discrete set of reported facts. Those facts have an identifiable, definitive, discrete set of characteristics which distinguishes one fact from another fact. Those facts and characteristics have an identifiable, definitive, discrete set of relations. Those facts and characteristics have an identifiable, definitive, discrete set of properties. These attributes are a nature of the information itself. These are the mechanics of a structured digital financial report. These mechanics are not disputable.

While determining *what* must be reported and *how* it is reported can at times be subjective in nature and require significant professional judgment; once that judgment has been exercised and once the information is provided the facts, characteristics, relations, and properties of that reported information is in no way subjective and open to judgment or interpretation. They are simply facts that are governed by rules of logic. Those facts are objective. Those facts can be interpreted by a user of the facts as the user sees fit. But the facts themselves are objective.

Being able to distinguish the *mechanical aspects* from the *aspects that require judgment* in a digital financial report is important. These digital financial reporting principles relate only to the mechanical aspects, what the digital financial report is saying. Information which is ambiguous, illogical, irrational, or nonsensical is simply not useful and clearly stands out.

All facts, characteristics, relations, and properties can be identified; they are physical objects which can be observed. The mechanics of the objects which comprise a financial report are not a mystery; rather, they tend to be well understood. However, thinking of the information in this manner is not something which business users have been trained to do. But, as these facts, characteristics, relations, and properties are related to the business domain, this training is relatively easy.

The specific technical rules of the underlying format of digital financial reports, the Extensible Business Reporting Language[6] (XBRL) are specified and are clear. These rules are not mysterious, vague, or incomprehensible. They are intended to be unambiguous and generally not disputed. XBRL goes to great lengths to be unambiguous, this is what allows for interoperability.

Given the correct mapping between a technical syntax and these facts, characteristics, relations, and properties; the technical syntax can be separated from the business domain semantics. If properly implemented, software can work with the technical syntax and expose only the business domain semantics to the business user making use of that software. The business user works with the business domain semantics, not the technical syntax. Software manages the technical syntax.

Likewise in accounting there are universal truths which are not disputed. Financial reports have balance sheets. Balance sheets balance. Balance sheets report "assets" and "liabilities and equity". Assets = Liabilities and Equity[7]. Assets foot. Liabilities and equity foots. Net income (loss) foots. Cash flow statements report net cash flows. These are objective details which are not open to interpretation but rather follow the rules specified by generally accepted accounting principles, such as US GAAP.

Good software hides technical details of an XBRL-based digital financial report from business users. Good software understands and leverages agreed upon business rules of financial reporting. This is achieved by articulating the accounting rules in a form that is understandable by a machine such as a computer.

If software does not hide technical details, then business users are still responsible for employing the technology appropriately and process details related to using the technology. Professional accountants are still responsible for understanding the mechanics and process of representing financial information using the XBRL format. If software professional accountants use to create digital financial reports does not hide details, accountants can either (a) get better software or (b) learn the technical details. What they cannot do is simply ignore the mechanics and process.

All report components, facts, characteristics, relations, and properties can be identified; they are physical objects which can be observed. The mechanics of the objects which are used to represent a financial report (i.e. an XBRL-based financial report) are not a mystery; rather, they tend to be well described by the XBRL technical specifications.

1.8. Understand risks and risk mitigation verification tasks

The objective of a general purpose financial report is to communicate information about some economic entity or accounting entity. The financial information provided should be a "true and fair representation" of the economic entities financial position and financial condition.

The risk and mitigation is independent of whether the verification task is performed by someone creating a digital financial report, an internal auditor, or a party which is or is not independent. Further, this set of risks is 100% comprehensive because it considers 100% of the business information contained within the digital financial report (reported facts, characteristics of those facts, parenthetical explanations of

[6] *Extensible Business Reporting Language (XBRL) 2.1*, http://www.xbrl.org/Specification/XBRL-RECOMMENDATION-2003-12-31+Corrected-Errata-2008-07-02.htm

[7] *The accounting equation*, http://en.wikipedia.org/wiki/Accounting_equation

facts, relations, and all related properties). Technical syntax need not be considered when verifying report information.

Below is a summary of the risks which could lead to a financial report being invalid and the risk mitigation assertion or verification task which would assure that the risk goes unrealized.

Risk	Risk Mitigation Assertion (Verification task)
Full inclusion: All relevant facts, characteristics which describe facts, parenthetical explanations of facts, and relations between facts/characteristics are not included in the financial report.	**Completeness**: All relevant facts, characteristics of facts, parenthetical explanations of facts, and relations between facts/characteristics have been included within the financial report.
False inclusion: No facts, characteristics which describe facts, parenthetical explanations of facts, or relations between facts/characteristics which should not be included have been included.	**Existence**: No facts, characteristics which describe facts, parenthetical explanations of facts, relations between facts/characteristics are included within financial report which should not be included.
Inaccuracy: Property of a fact, characteristic, parenthetical explanation, component, or relation is inaccurate.	**Accuracy**: The properties of all facts, characteristics, components, parenthetical explanations, relations between facts/characteristics which are included in the financial report are accurate, correct, and complete.
Infidelity: All facts, characteristics, parenthetical explanations, and relations considered as a whole do not possess the required fidelity when considered as a whole.	**Fidelity**: Considered as a whole; the facts, characteristics, parenthetical explanations, and relations between facts/characteristics properly reproduces the financial and nonfinancial facts, characteristics, and relations of the reporting entity and provide a true and fair representation of such financial information.
Integrity not intact: Integrity between facts and characteristics which comprise one report component is inconsistent with all other report components.	**Integrity**: Considered as a whole, the facts and characteristics which make up the components of a report are consistent throughout all components of the financial report. There are no internal inconsistencies.
Inconsistency: The facts, characteristics, parenthetical explanations, relations and their properties expressed are inconsistent with prior reporting periods or with peers of the reporting entity.	**Consistency**: The facts, characteristics, parenthetical explanations, relations between facts/characteristics, and their properties are consistent with prior periods and with the reporting entities peers, as is deemed appropriate. There are no inconsistencies with other prior period or peers.
Not presented fairly: The financial report is not presented fairly and are therefore not a true and fair representation of the reporting economic entity in accordance with the financial reporting framework applied.	**True and fair representation**: The financial report is a true and fair representation of the information of the reporting economic entity. (An auditor might say presented fairly, in all material respects, and provide a true and fair representation in accordance with the financial reporting framework applied.

The task of verification/validation of the risks above can be automated to the extent that (a) machine readable business rules *can be* created and (b) such rules *have been created*. If a machine readable business rule cannot be create or could be

created but has not; then the verification/validation process must be performed manually. Manual verification/validation is more expensive than and more costly than automated machine-based verification/validation.

As such, automated verification/validation processes are preferable to manual processes because automated processes are more reliable, take less time, and are less costly.

1.9. Digital representations versus reality

What is the purpose of a digital financial report such as a public company XBRL-based digital financial report which is submitted to the SEC?

- **To define one absolute reality**: To arrive at someone's absolute definition of "true and fair representation of financial information"?
- **To create a shared reality to achieve a specific purpose**: To arrive at a shared common enough view of "true and fair representation of financial information" such that most of our working purposes, so that reality does appear to be objective and stable. So that you can query information reliably, predictably, repeatedly, safely.

Many people seem to believe that the answer is one forced absolute reality is being thrust on them. That is why they tend to think that everything is involves judgment and that everything is subjective. But this is to miss the point. A shared view of reality which is clearly interpretable and understood created in order to achieve the purpose of meaningfully exchanging information so that time is reduced, costs are reduced, and information quality improves for a financial report.

The goal is to arrive at some equilibrium, to balance the duality, to recognize that there is no singular objective reality but in spite of that, we ***create a common enough shared reality to achieve some working purpose***. ***To make reality of the financial reporting domain appear to be objective and stable in certain specific and agreed upon ways in order to fulfill some higher purpose.***

From what I can see, the accounting profession has yet to agree on the purpose and they have not successfully communicated that purpose to IT professionals because (a) they have not agreed on the purpose and (b) they don't even understand that they need to agree on and communicate that purpose so accountants have not taken the time to agree on or define that purpose.

The book *Data and Reality: A Timeless Perspective on Perceiving and Managing Information in Our Imprecise World, 3rd Edition*[8], by William Kent, helps understand issues related to getting machines such as computers to work with information. This discusses the importance of understanding your purpose:

> In addition, there is a question of purpose. Views can be reconciled with different degrees of success to serve different purposes. By reconciliation I mean a state in which the parties involved have negligible differences in that portion of their world views which is relevant to the purpose at hand. If an involved party holds multiple viewpoints, he may agree to use a particular one to serve the purpose at hand. Or he may be persuaded to modify his view, to serve that purpose.

[8] http://www.amazon.com/Data-Reality-Perspective-Perceiving-Information/dp/1935504215

> If the purpose is to arrive at an absolute definition of truth and beauty, the chances of reconciliation are nil. But for the purposes of survival and the conduct of our daily lives (relatively narrow purposes), chances of reconciliation are necessarily high. I can buy food from the grocer, and ask a policeman to chase a burglar, without sharing these people's views of truth and beauty. It is an inevitable outcome of natural selection that those of us who have survived share, within a sufficiently localized community, a common view of certain basic staples of life. This is fundamental to any kind of social interaction.
>
> If the purpose is to maintain the inventory records for a warehouse, the chances of reconciliation are again high. (How high? High enough to make the system workably acceptable to certain decision makers in management.) If the purpose is to consistently maintain the personnel, production, planning, sales, and customer data for a multi-national corporation, the chances of reconciliation are somewhat less: the purposes are broader, and there are more people's views involved.
>
> So, at bottom, we come to this duality. In an absolute sense, there is no singular objective reality. But we can share a common enough view of it for most of our working purposes, so that reality does appear to be objective and stable.
>
> But the chances of achieving such a shared view become poorer when we try to encompass broader purposes, and to involve more people. This is precisely why the question is becoming more relevant today: the thrust of technology is to foster interaction among greater numbers of people, and to integrate processes into monoliths serving wider and wider purposes. It is in this environment that discrepancies in fundamental assumptions will become increasingly exposed.

Digital financial reporting is a choice to safely, reliably, predictably, exchange financial information in both human readable and machine readable form with the purpose of saving the cost of creation, cost of rekeying information for analysis. This is achieved by automating here-to-for manual processes.

1.10. Choosing how digital financial reporting will work

Professional accountants and others involved with the financial reporting supply chain have a choice as to how digital financial reporting will work. The options available are either conscious or unconscious to those who make decisions as to which option to select. If the wrong options are selected, digital financial reporting will not work the way professional accountants and the financial reporting supply chain desire it to work. Too many of the wrong options and digital financial reporting will be complex and even impossible for business professionals. Picking the right options can create an elegant and simple to understand and use system. To build the elegant and simple system, professional accountants and other business professionals simply need to understand their options and communicate that desire to IT professionals responsible for building that system. It really is that easy.

1.11. Providing feedback

The information in this document is intended to be an accurate, high-quality resource. If you have any comments, suggestions, ideas, or other feedback; please

send your feedback to CharlesHoffman@olywa.net. If you have a difference of opinion or better idea, please document your opinion or better idea and send that.

2. Summary of Common Sense Principles

The following is a summary of common sense principles which should be consciously applied when creating or reviewing an XBRL-based financial report or other digital financial report. If you are not conscious of these principles you are likely unconsciously violating these principles.

These principles apply to every report component which discloses information. Again, this is not a cook book for representing specific accounting disclosures using the XBRL format. Every accounting disclosure benefits from these principles.

These principles are not religious dogma created to push toward one option or another where subjectivity is appropriate. These principles are logical, rational, and sensible ideas based on the observation and analysis of thousands of digital financial reports, what seems to work, and what does not work, and more importantly specifically why something does or does not work.

Each principle is explained, an example provided, visual examples are provide where helpful, as well as descriptive information where that is helpful. Many times both inappropriate approaches and appropriate approaches are shown so that they might be compared and contrasted so that specific differences can be understood.

Many times details are hard to explain with a simple narrative or screen shot. Comprehensive examples of each example are being created such that all details can be examined with the proper perspective so that all moving pieces at play can be examined for oneself. The comprehensive examples help to understand specific items of focus and other related pieces which impact the item of specific focus. You can find these examples here:

http://www.xbrlsite.com/2013/DigitalFinancialReportingPrinciples/

As mentioned, this is not a cookbook of accounting disclosures expressed using the XBRL format. Likely one day such a cookbook might be created. However there is a set of resources which tries to embody the principles outlined in this document. These resources can be helpful in understanding these principles. You can find these resources here:

- **Reporting templates**: this is a set of 75 common pieces of which might be included within an XBRL-based financial filing which strives to follow these principles: http://www.xbrlsite.com/2013/ReportingTemplates/2013-05-15/TemplateIndex/index.html
- **SEC Reference implementation**: this is a prototype of an XBRL-based financial filing which follows these principles and contains each of the patterns identified and described in this document: http://www.xbrlsite.com/DigitalFinancialReporting/ReferenceImplementation/2013-05-15/
- **SEC Comparison example**: this is in essence three versions of the reference implementation which is used to test ideas related to comparisons across XBRL-based financial filings: http://www.xbrlsite.com/DigitalFinancialReporting/ReferenceImplementation/rdf_Compare.xml
- **Comparison of disclosures**: this is a set of comparisons of the SEC Level 3 [Text Block] level and SEC Level 4 detail disclosures:

http://xbrl.squarespace.com/journal/2014/6/24/mind-boggling-diversity-of-sec-xbrl-financial-filings.html

- **Fortune 100 comparison**: this is an analysis of and comparison of Fortune 100 public company XBRL-based digital financial reports submitted to the SEC; see http://www.xbrlsite.com/2014/Prototype/DisclosureAnalysis

- **Fundamental accounting concepts analysis:** This is an analysis of each fundamental accounting concept relations rule; see http://xbrl.squarespace.com/understanding-sec-xbrl-financi/

2.1. Recognize that the goal is the meaningful exchange of information readable by both humans and machines.

Financial reports tell a story. That story is the same whether the information of that financial report is expressed on paper, electronically using HTML or PDF, or digitally using the XBRL technical format or some other machine readable format. Changing the medium which is used to communicate the information does not change the story the financial report coveys.

Creators and users of information conveyed in a financial report may interpret reported facts in different ways; however they must agree on the facts which have been reported. The meaning of the fact must be unambiguous.

Contrast this information:

Long-term Debt - Schedule of Debt Instruments (Details) (USD $)	3 Months Ended	12 Months Ended				
	Jan. 28, 2012	Jan. 28, 2012	Jan. 29, 2011	Jan. 30, 2010	Feb. 02, 2008	Apr. 30, 200
Debt Instrument [Line Items]						
Assets acquired through capital leases		$ 2,883,000	$ 0	$ 0		
Long-term Debt, by Current and Noncurrent [Abstract]						
Total long-term debt principal	156,011,000	156,011,000	164,478,000			
Unamortized discount on 1.125% Senior Convertible Notes	(17,690,000)	(17,690,000)	(24,679,000)			
Long-term debt - carrying value	138,321,000	138,321,000	139,799,000			
Current portion	(4,682,000)	(4,682,000)	(11,449,000)			
Net long-term debt	133,639,000	133,639,000	128,350,000			
Debt Instrument, Convertible, Conversion Price (per share)	$ 15.379	$ 15.379				
Common stock price per share threshold to include the dilutive effect related to the warrants	$ 21.607	$ 21.607				
Purchase price of early repayment of 1.125% Senior Convertible Notes		0	38,260,000	50,633,000		
Gain on repurchases of 1.125% Senior Convertible Notes		0	1,907,000	13,979,000		
Dilutive Effect of Notes and Warrants First Dollar In Excess of Conversion Price (shares)	558,000	558,000				
Cumulative Dilutive Effect at Conversion Price After Issuance of Warrants and Options (shares)	2,633,000	2,633,000				
Cumulative Dilutive Effect of Notes and Warrants First Dollar in Excess of Conversion Price After Issuance of Warrants and Call Options (shares)	3,346,000	3,346,000				
Cumulative Dilutive Effect of Notes, Warrants and Call Options First Dollar in Excess of Conversion Price After Issuance of Warrants and Call Options (shares)	425,000	425,000				
Interest Expense, Debt [Abstract]						
Amortization of Debt Discount		6,989,000	7,332,000	9,885,000		
Cash payments for interest		4,904,000	5,879,000	6,655,000		
Stated interest rate	1.125%	1.125%				
Maturities of Long-term Debt [Abstract]						
Long-term Debt, Maturities, Repayments of Principal During Year Ended February 2, 2013	4,682,000	4,682,000				
Long-term Debt, Maturities, Repayments of Principal During Year Ended February 1, 2014	2,682,000	2,682,000				
Long-term Debt, Maturities, Repayments of Principal During Year Ended January 31, 2015	147,686,000	147,686,000				
Long-term Debt, Maturities, Repayments of Principal During Year Ended January 30, 2016	763,000	763,000				
Long-term Debt, Maturities, Repayments of Principal During Year Ended January [illegible]	498,000	498,000				

To this information:

Slicers (applies to each fact value in each table cell)

Reporting Entity [Axis]	0000000001 (http://www.sec.gov/CIK)
Legal Entity [Axis]	Consolidated Entity [Domain]

Balance Sheet Parenthetical [Line Items]	Period [Axis]	
	2010-12-31	2009-12-31
Balance Sheet Parenthetical [Hierarchy]		
Accounts receivable, allowance	7,000,000	6,000,000

Preferred Stock Information, by Class [Line Items]	Period [Axis]					
	2010-12-31			2009-12-31		
	Class of Stock [Axis]			Class of Stock [Axis]		
	Class A Preferred Stock [Member]	Class B Preferred Stock [Member]	Class of Stock [Domain]	Class A Preferred Stock [Member]	Class B Preferred Stock [Member]	Class of Stock [Domain]
Class of Preferred Stock [Hierarchy]						
Preferred stock, par value per share	1	1		1	1	
Preferred stock, shares authorized	20,000	20,000		20,000	20,000	
Preferred stock, shares issued	20,000	20,000		20,000	20,000	
Preferred stock, shares outstanding	20,000	20,000		20,000	20,000	
Preferred stock, value outstanding	10,000,000	10,000,000	20,000,000	10,000,000	10,000,000	20,000,000

Common Stock Information, by Class [Line Items]	Period [Axis]					
	2010-12-31			2009-12-31		
	Class of Stock [Axis]			Class of Stock [Axis]		
	Class A Common Stock [Member]	Class B Common Stock [Member]	Class of Stock [Domain]	Class A Common Stock [Member]	Class B Common Stock [Member]	Class of Stock [Domain]
Class of Common Stock [Hierarchy]						
Common stock, par value per share	1	1		1	1	
Common stock, shares authorized	60,000	50,000		60,000	50,000	
Common stock, shares issued	50,000	40,000		50,000	40,000	
Common stock, shares outstanding	50,000	40,000		50,000	40,000	
Common stock, value outstanding	10,000,000	10,000,000	20,000,000	10,000,000	10,000,000	20,000,000

Which of the examples is easier to read? There are two things which make the first example hard to read. First, the rendering engine used to generate the first example does not show all information. For example, you cannot tell the CIK number or legal entity of the economic entity in the first example. Second, the organization of the representation of the information contributes to making it hard to understand. There are two things that contribute to a meaningful understanding: (a) the rendering engine and (b) the approach used to represent of the information (which is used by the rendering engine).

2.2. Meaningful exchange requires prior existence of agreed upon technical syntax, business domain semantics[9], and business domain workflow/process rules.

A meaningful exchange of information can only occur to the extent that technical syntax rules, business domain semantic rules, and business domain workflow/process rules have been defined *in advance*. To the extent that these rules exist *in advance*, information exchanged will have the quality of meaning for the information to be useful.

Rules are in essence a form of agreement. The rules are a communications tool. When humans are involved in interpreting information they can overcome a certain amount of ambiguity in communicated information. However, machines are less adept at overcoming ambiguity. If a rule is not explicitly specified and is open to interpretation, then a software developer must make a choice and decide how

[9] Differentiating the terms syntax and semantics is crucial. If you don't understand the difference between the terms syntax and semantics, please see the video here: http://xbrl.squarespace.com/journal/2010/6/1/differentiating-syntax-and-semantics.html

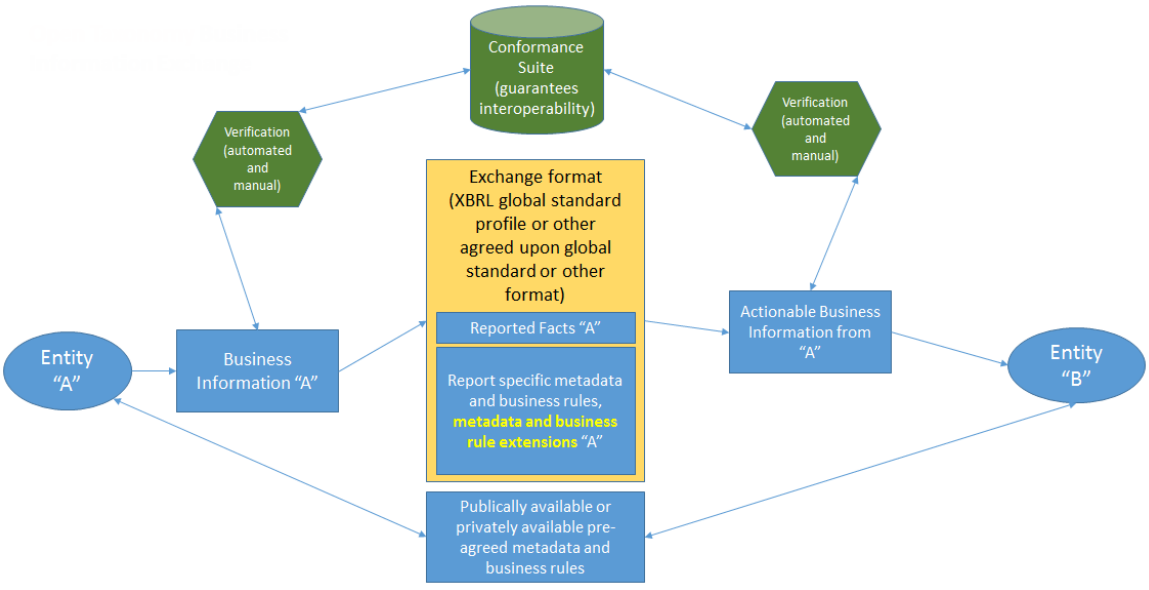
exactly to interpret that situation and therefore how a computer will react. If different software developers are involved, they will commonly interpret things differently.

Historically, such rules have generally been hard coded into individual business systems by programmers. Before the internet existed and therefore before one business system could communicate with another business system this was not really a problem. Every system was a silo.

All that changed when the internet came into existence. Now it is possible to exchange information between business systems.

However, rather than hardcoding rules into individual systems these rules can be created external to a system as metadata and managed by business users rather than the IT department. Why is this important? Because if business people can change rules by changing metadata (rather than relying on programmers to change software code); the way the system acts can be changed by business professionals. Costs are reduced, time is saved, functionally can be tweaked with less effort. The rules can also be exchanged *between* systems.

Standard business rules allow for the rules to be created once and then shared between systems. This is one means of making sure that both systems have the same understanding of the information being exchanged. Commercially available business rules engines can process structured financial and nonfinancial information against publically and/or privately specified business rules.



The set of possible rules is endless. XBRL technical syntax rules and technical syntax interoperability are excellent with XBRL[10]. This is because of the XBRL technical syntax specification and software conformance suite. The conformance suite in is why the interoperability is excellent. The meaning at the XBRL syntax level is very good and therefore software interoperability at the syntax level is very good.

At the business semantics level, we are not there yet but things are improving. There are more "formal" and "informal" approaches to expressing these business domain

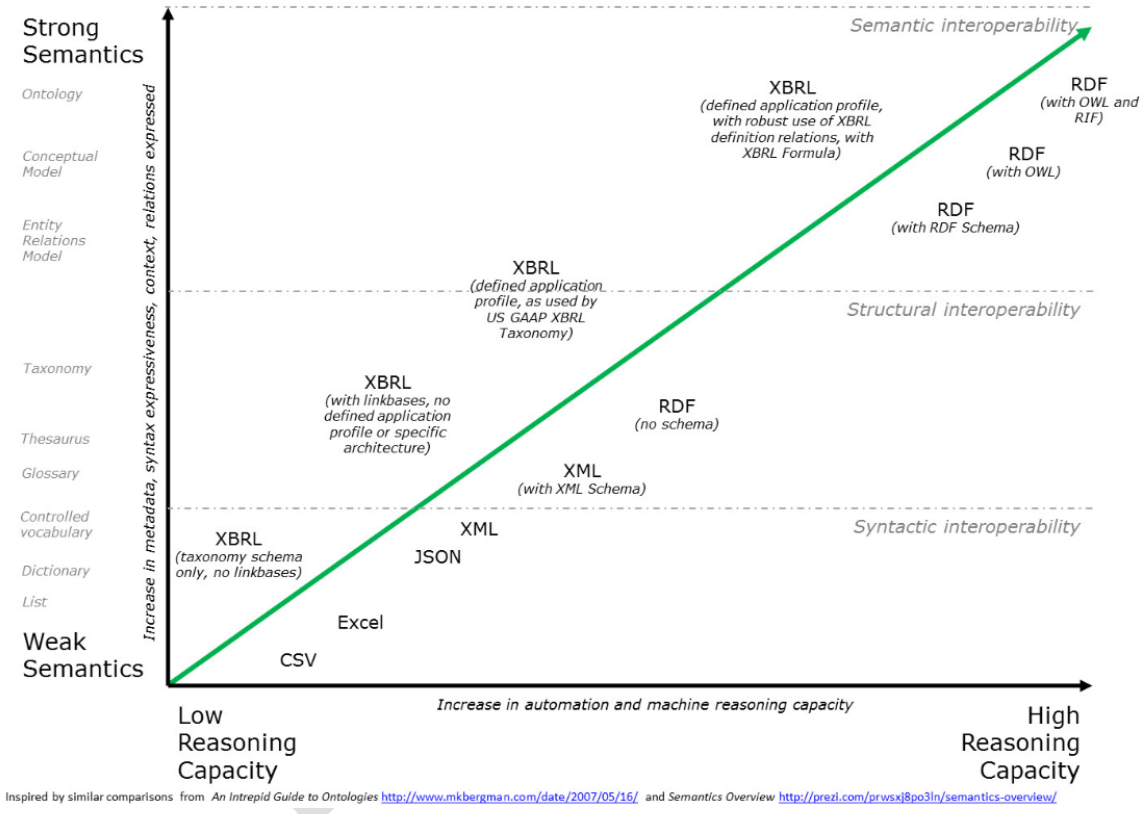
[10] http://xbrl.squarespace.com/journal/2014/3/17/xbrl-technical-syntax-update-insights-obtained.html

semantic rules. The more formal the approach the more complicated things can get and the harder it is to use the system; but the higher the information quality because of the formalness. The less formal or informal, the easier things are but the lower the quality of information. Striking the correct balance between formal and informal is important.

Different technical syntax formats have different amounts of expressive power. The more expressive power a representation format has, the stronger the business semantics which can be expressed. The stronger the semantics, the more reasoning capacity a machine can provide. The more reasoning capacity, the more work a machine can provide.

The graphic below shows the relation between the expressiveness of different knowledge representation schemes and the relative automation or reasoning capacity which can be achieved[11].

Comparison of Knowledge Representation Expressiveness and Relative Automation/Reasoning Capacity



Again, striking the right balance is key. That will make the system practical and cost-effective. It will also make the system consistent, reliable, repeatable, predictable, and otherwise effective.

Less is known about workflow/process rules. That will be the next issue we run up against. For example, when an SEC filer submits a filing, that filing can be amended. What happens to the original filing in the database when another filing amends a filing? There are those sorts of issues that are not even on people's radar yet.

[11] http://www.xbrlsite.com/2014/Library/ExpressivenessAndReasonaingCapacityComparison.jpg

The following is a comprehensive summary of the items of a digital financial report which must be verified[12]. The list is broken down by what can be verified using automated processes and what must be verified manually.

#	Goal or Desired State of Digital Financial Report	More Information	Comments, examples, etc.	Automatable	Manual	FY 2013 (automatable tests only)	FY 2012 (automatable tests only)
1	XBRL technical syntax consistent with XBRL technical specification requirements	See		X		99.9%	99.9%
2	Consistent with requirements of EDGAR Filer automated and manual (EFM) syntax/semantics rules	See		X	X	97.9%	80.5%
3	Consistent and unambiguous report level representation or model structure	See	Tests arrangement of Network, Table, Axis, Member, Line Items, Abstracts, Concepts	X		99.9%	97.9%
4	Root entity of focus (economic entity, accounting entity) successfully and unambiguously detectable	See	If the entity of focus is not detected, unable to perform other tests	X		99.2%	98.8%
5	Current balance sheet date (document period end date) and income statement period (period context of document period end date) successfully and unambiguously detected	See		X		99.3%	99.8%
6	Fundamental accounting concept skeleton successfully and unambiguously detected and relations between concepts intact/sound	See		X		97.8%	97.9%
7	Primary financial statement roll up computations (balance sheet, income statement, statement of comprehensive income, cash flow statement) detected, intact, and foot	See	This has a dependency on discovery of fundamental accounting concepts. For example, if the concept "net cash flow" is not found, won't be able to find a roll up for net cash flow either.	X		90.1%	84.9%
8	Primary financial statements successfully discovered		This should be automatable, but if certain conditions exist it cannot be automated.	X	X	Generally successful	Generally successful
9	Primary financial statements foot and roll forward (cash flow statement, statement of changes in equity) appropriately		This is a duplicate of #7 which does not include the roll forwards; this is beyond the primary financials footing	X		Unknown	Unknown
10	Level 1 footnote disclosures appropriate		There is no way to automate this 100% unless the filer uses concepts from the US GAAP XBRL taxonomy.	X	X	Unknown	Unknown
11	Industry specific accounting concepts and relations valid		Similar to the fundamental accounting concepts, but for specific industries or activities	X	X	Unknown	Unknown
12	Level 2 policy text block disclosures appropriate				X	Fair	Unknown
13	Each Level 3 [Text Block] and related Level 4 detail disclosure match appropriately	See		X	X	Poor	Poor
14	Each Level 4 detail disclosure valid including representation structure, mathematical computations, intersections with other components, etc.	See	See the separate disclosure testing algorithm	X	X	Unknown	Unknown
15	Required disclosures discovered		Nature of business, basis of reporting, accounting policies and all other required disclosures are discovered	X		Unknown	Unknown
16	Reported prior period information consistent with prior report current period information where appropriate			X	X	Unknown	Unknown
17	Disclosure rules have been met and make sense		For example, if PPE exists on the balance sheet then PPE details should be discovered to be disclosed and PPE estimated useful lives should be discovered to be disclosed	X	X	Unknown	Unknown
18	Report element selection is justifiable, defensible, and otherwise appropriate				X	Unknown	Unknown
19	Reported facts appropriate				X	Unknown	Unknown
20	Variance analysis of reported facts as compared to peer or peer group appropriately explainable		Generally automatable using management by exception approach	X	X	Unknown	Unknown
21	Report element selection is consistent with peers or peer groups as appropriate				X	Unknown	Unknown
22	Disclosure checklist review for full inclusion		There is no way to automate the process of detecting things which should have been disclosed based on transactions, events, or other circumstances that are not included within report		X	Unknown	Unknown
23	True and fair representation of financial information of economic entity				X	Unknown	Unknown

Current manually created disclosure checklists will be replaced, to a degree, by automated machine-based processes. Structured information makes this possible. You can think of it this way. In the past, information was unstructured and therefore unreadable by a computer process. Now information is structured. Some portion of the manual process of creating a financial report will be automated. The extent that a process can be automated is directly correlated with the ability to create machine readable rules and extent to which those rules exist.

2.3. Recognize that even if SEC filing rules and the US GAAP XBRL Taxonomy may allow for ambiguity; approaches do exist where SEC filings rules can be followed and information is consistent, explicit and unambiguous.

There is a "safe" or "happy path" through SEC EFM filing rules and the US GAAP XBTL Taxonomy where a quality, reliable, predictable, repeatable implementation approach can result. While it is likewise possible to pick a path where meaning is not clear and information is impossible or difficult to make use of; paths likewise exist which make meaning unambiguous and easy to make use of.

Consider the graphic below. The outer most box represents what is allowed by the XBRL technical specification. The US GAAP Taxonomy Architecture specifies addition constraints, limiting how the XBRL technical syntax can be used. For example, the

[12] Digital financial reporting disclosure checklist, http://www.xbrlsite.com/2014/Library/DisclosureChecklist.pdf

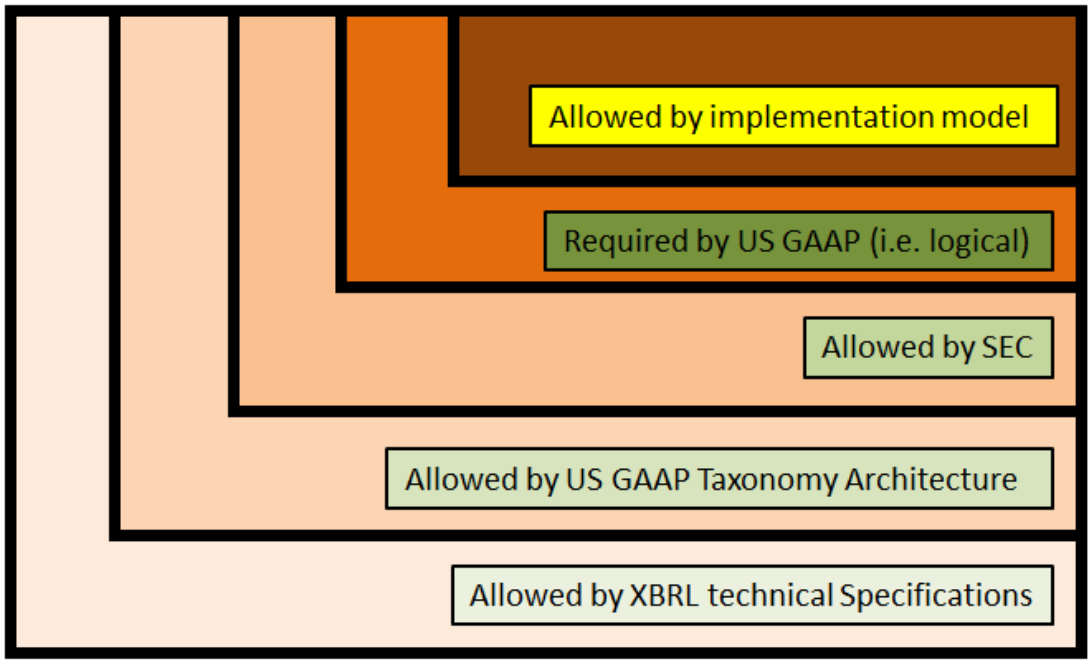
US GAAP Taxonomy Architecture disallows the use of tuples, typed dimensions, and the precision attribute which XBRL does allow. The SEC places further restrictions on what is allowed. For example, every public company submitting an XBRL-based financial filing must use a specific entity identifier scheme and identifier, the CIK number. The EFM rules require this and inbound validation performed by the SEC enforces this rule.

US GAAP itself further restricts how the XBRL technical syntax can be used. For example, balance sheets balance (assets = liabilities and equity). However, neither the SEC nor the FASB provides this rule in machine readable form. But this does not prohibit a system from creating and enforcing this very logical business rule.

The smallest box is a more constrained set of rules that follows all other rules specified by US GAAP, the SEC, the US GAAP Taxonomy Architecture, and the XBRL technical specification. For example, the SEC and US GAAP XBRL Taxonomy architecture does not *require* [Table]s to be used to report all information. But it does *allow* [Table]s to be used. There is nothing that prevents a software vendor from requiring the consistent use of [Table]s in their software. In fact, some software vendors do. Why? Because if software consistently uses [Table]s, you don't need to explain to an accounting professional when to use a [Table] and when not to use a [Table]. One less detail to worry about, the system takes care of that detail for you.

Basically, the box below labeled Allowed by implementation model is nothing more than an application profile, a common tool software developers use to hide complexity from business users making use of software.

It is through balancing all of these layers correctly that an easy to use approach to expressing financial information digitally can be achieved.



Creating software that is complex and difficult to use is easy. Building software that is simple to use is hard work.

2.4. Recognize that being explicit contributes to the unambiguous interpretation of reported information.

The probability that reported facts will be agreed to by creators and users of information is increased if reported facts are explicit and unambiguous. Likewise, if information needs to be implied by the user of the financial information the probability for an inappropriate interpretation increases.

Explicit is defined as "stated clearly and in detail, leaving no room for confusion or doubt". Implicit is defined as "understood though not directly expressed". Explicit is preferred to implicit because many times something which one might believe is understood but not directly expressed, could be understood differently than one might expect it to be understood. Being explicit makes it unnecessary to imply.

Unambiguous is defined as "not open to more than one interpretation". The definition of meaningful is "something that has a purpose". Information cannot be both "meaningful" and "ambiguous". Ambiguous is defined as "open to more than one interpretation" or "doubtful or uncertain".

The purpose of a financial report is to convey meaning.

The only way a meaningful exchange of information can occur is the prior existence of agreed upon syntax, semantics, and workflow/process rules. To the extent that these explicit business rules exist, information can be unambiguous.

2.5. Strive for consistency

Consistency is good and preferred over inconsistency. Consistency makes things simpler. "Simple" is not about doing simple things. Simplicity is the ultimate sophistication.

If there is no specific reason for an inconsistency which can be explained which justifies the inconsistency; then you are very likely being inconsistent unconsciously with no reason and therefore one of the approaches can and should be dropped.

Inconsistencies cause additional training costs and additional burden, and unnecessary, burden on the user to somehow rationalize the inconsistency.

2.6. Recognize the difference between presentation and representation.

Paper and HTML are presentation formats. XBRL is a representation format. The representation format can be leveraged to also present information.

Accountants can choose to *present* information in different ways according to their preferences. However, the *representation* of information is not generally subject to interpretation. Consider the following income statement fragments:

Fragment #1:

Net income (loss)	1,000,000
Net income (loss) attributable to noncontrolling interest	200,000
Net income (loss) attributable to parent	800,000

Fragment #2:

Net income (loss)	1,000,000
Less: Net income (loss) attributable to noncontrolling interest	200,000
Net income (loss) attributable to parent	800,000

Fragment #3:

Net income (loss)	1,000,000
Net income (loss) attributable to noncontrolling interest	(200,000)
Net income (loss) attributable to parent	800,000

Fragment #4:

Net income (loss) attributable to parent	800,000
Net income (loss) attributable to noncontrolling interest	200,000
Net income (loss)	1,000,000

If someone was interpreting those four different fragments above, what is the difference in interpretation would you expect? Most likely none. Clearly, each of the fragments communicates the same facts, the same information. While the presentation of the information in each fragment is different, the meaning or representation of the facts articulated is identical.

Imagine having to write an explanation which a software developer would use to get a computer application to correctly interpret each of these four fragments. Imagine that someone came up with a fifth approach for articulating this information. The point here is that while the way this information can be presented is arbitrary, the information itself is standard. A standard is defined as "used or accepted as normal or average; something established by authority, custom, or general consent as a model or example." One standard makes machine interpretation trivial.

For example, while an accountant might label a line item "Less allowance for doubtful accounts:" and either show "1000" or "(1000)" for a value, information represented for computer use may not work this way and provide meaningful, unambiguous information. A good example of this is how dividends is provided within an XBRL-based financial report. There is no situation where dividends can have a negative value per the definition of the concept "us-gaap:Dividends". The documentation and balance attribute clearly indicate this.

> HINT: An all too common mistake is to report dividends as a negative number because the presentation is negative. Dividends, and numerous other concepts,

may never be negative in order to allow for unambiguous interpretation by software applications.

A rendering engine can present information in many, many different ways as long as the information can first be interpreted correctly.

2.7. Recognize that a financial report must be a true and fair representation.

Clearly the financial information provided by an economic entity within a financial report must not be "untrue" or "unfair". As such, then a financial report must be "true" and "fair". These are not ideas defined by XBRL, the SEC, or even the US GAAP XBRL Taxonomy. These are ideas expressed in the conceptual framework of financial reporting for US GAAP. The conceptual framework of US GAAP uses the term "faithful representation". The conceptual framework states that a faithful representation is complete, neutral, and free from error. Historically, it has been the case that professional accountants needed to only represent financial information on paper correctly; but now professional accountants need to also create an appropriate *representation* of the information using the XBRL-based structured format.

HINT: Don't confuse the external reporting manager's responsibility to create a true and fair representation with the third-party auditor's responsibility to make sure the financial report is "presented fairly in all material respects".

2.8. Recognize that financial reports contain a discrete set of report elements which have specific properties and relations.

A financial report may be broken down into a discrete set of report components which are organized together for some purpose. For example, a balance sheet is a discrete report component which reports assets and liabilities and equity.

For example, here is information about the report elements of 7160 XBRL-based financial filings, all 10-K filings, filed with the SEC:

Reported facts: (for 6,644 XBRL-based financial filings)

Reports Count	Reported Facts	Extension Facts	Average Facts Per Report	Average Extension Rate
6,674	8,532,275	1,530,331	1,278	17.94%

Breakdown of report elements: (for 6,644 XBRL-based financial filings)

Reports	Networks	Tables	Axis	Members	LineItems	Abstract	Concepts
6,674	477,041	232,233	386,915	1,210,860	232,693	737,943	3,165,250

Average report elements by report: (for 6,644 XBRL-based financial filings)

Networks	Tables	Axis	Members	LineItems	Abstract	Concepts
71	35	58	181	35	111	474

Breakdown by networks of disclosure/statement; detail/text block:

Category	SubCategory	Networks	Report elements	Tables	Axis	Members	LineItems	Abstracts	Concepts
Document	Detail	6,418	104,619	1,917	1,829	2,809	1,934	6,213	89,917
Document	TextBlock	15	116	1	1	1	1	10	102
Statement	Detail	42,529	1,097,965	22,727	25,084	77,772	22,784	153,331	796,267
Statement	TextBlock	49	473	5	5	18	5	98	342
Disclosure	Detail	276,750	4,330,342	183,241	334,526	1,088,678	183,547	425,423	2,114,939
Disclosure	TextBlock	149,161	397,655	23,101	23,745	27,568	23,181	149,222	150,838
Schedule	Detail	1,326	32,931	1,201	1,684	13,943	1,201	2,851	12,051
Schedule	TextBlock	793	1,781	40	41	71	40	795	794

The point here is that you are not managing one big thing when creating a digital financial report. What you are managing is lots of little things. Many times one thing relates to some other thing. That relationship must be both intact and correctly represented. Business rules express those relations. Automated processes can leverage those business rules. But for automated processes to work, they need to have the business rules expressed so that software can use those rules. No computer readable business rules = manual process must be used. Manual process = increase cost and increased probability for error. There are many, many little pieces. Managing all these pieces manually simply cannot work.

2.9. Recognize that digital financial report elements can be categorized into common groups which have common relevant properties.

All these little pieces have names. Those pieces can be categorized into useful groupings. The report elements of a digital financial report can be categorized or grouped into a discreet set of categories which have the same properties: Network, [Table], [Axis], [Member], [Line Items], Concept, and [Abstract][13].

This implies that using the term "tag" to discuss something which is contained within a digital financial report is not appropriate because a more precise term would exist. The term "tag" is a syntax term which has imprecise meaning.

- **Network**: A network is a one approach to break an XBRL-based financial filing into smaller pieces. There are two reasons why you might need to break a financial filing into pieces: because you want to or because you have to. Networks are not necessary for understanding information. However, the SEC Interactive Data Viewer and other rendering applications do use them, sometimes in different ways. Networks help to order or sequence reported information. In XBRL-based financial filings, networks have a ***number***, a ***sort***

[13] These terms are used by the US GAAP Taxonomy Architecture, see http://xbrl.us/Documents/SECOFM-USGAAPT-Architecture-20080428.pdf

category, and a ***title***. For example, "100001 - Statement - Balance Sheet". The number and the sort category help to articulate the flow of the financial filing.

- **Table**: A table is used to combine facts which go together for some specific reason. Tables are comprised of axis and line items. The line items of a table share the axis defined within a table. There are two types of tables: explicit tables and implicit tables. An explicit table always has at least one explicit axis; it could have more than one. An explicit table always has one set of line items.
- **Axis**: An axis is a means of providing information about the characteristics of a fact reported within a financial report.
- **Member**: A member is a possible value of an [Axis]. A [Member] is always part of a domain of an [Axis], thus the term "member" (i.e. of the domain or set; a domain is simply a set of [Member]s which relates to a specific [Axis]). Members of an [Axis] tend to be cohesive and share a certain common nature.
- **Line Items**: [Line items] are a set of concepts which can be reported by an entity, they can contain values. [Line Items] may also contain [Abstract] concepts which can never report values but rather are used to help organize the [Line Items].
- **Concept**: A concept refers to a financial reporting concept or a non-financial concept which can be reported as a fact within an XBRL-based financial filing. A concept is sometimes referred to as a concrete concept, as compared to an abstract concept (see next report element). [Line Items] contain Concepts organized within a component which have the same information model. Concepts can be concrete (meaning they can be reported) or abstract (meaning that they are never reported; they are only used to organize the concepts contained within a set of line items).
- **Abstract**: An Abstract is a class of Concept. Abstracts are used for organization and can never be reported. Abstracts can be used within a [Line Items] or it can be used to organize the Tables within a Network.

HINT: The [Line Items] is in essence a special type of [Axis] which articulates the concept characteristic of a reported fact.

HINT: While the reporting entity and period are not called [Axis], they act exactly like an [Axis] to characterize reported facts. The reporting entity and period are implied [Axis]. The reporting entity indicates the CIK number of the reporting entity. The period indicates the calendar period of a reported fact.

HINT: A [Domain] is not a type of report element. A [Domain] as used by the US GAAP XBRL Taxonomy and XBRL-based financial filings is a [Member] which is the root of a domain of members. A domain is simply a set of members.

2.10. Recognize that each category of report elements has allowed and disallowed relations.

We pointed out that an XBRL-based financial filing is made up of report elements. Those report elements can be categorized: Network, Table, Axis, Member, LineItems, Abstract, and Concept.

These relationships are referred to as the report level model structure or representation structure[14]. The top part of the graphic below shows the relations which are OK, which are disallowed, and which are not advised. The bottom part of the graphic shows information about the number of these relations within the set of 6,644 XBRL-based financial filings analyzed.

		LAX Model, SEC filers supported						
		Parent						
		Network	Table	Axis	Member	LineItems	Abstract	Concept
Child	Network	Illegal XBRL	Illegal XBRL	Illegal XBRL	Illegal XBRL	Illegal XBRL	Illegal XBRL	Illegal XBRL
	Table	OK	Disallowed	Disallowed	Disallowed	Disallowed	OK	Disallowed
	Axis	Disallowed	OK	Disallowed	Disallowed	Disallowed	Disallowed	Disallowed
	Member	Disallowed	Disallowed	OK	OK	Disallowed	Disallowed	Disallowed
	LineItems	Disallowed	OK	Disallowed	Disallowed	Disallowed	Disallowed	Disallowed
	Abstract	OK	Disallowed	Disallowed	Disallowed	OK	OK	Not advised
	Concept	Not advised	Disallowed	Disallowed	Disallowed	OK	OK	Not advised

		LAX Model, SEC filers supported						
		Parent						
		Network	Table	Axis	Member	LineItems	Abstract	Concept
		477,041	232,230	386,912	1,216,391	232,690	732,409	3,165,249
Child	Network	0	0	0	0	0	0	0
	Table	1,261	1	0	0	45	230,899	24
	Axis	1	386,888	0	0	3	20	0
	Member	3	0	450,091	766,221	4	72	0
	LineItems	183	232,181	0	0	107	217	2
	Abstract	474,310	22	0	1	113,059	144,471	546
	Concept	46	26	11	137	1,222,427	1,929,257	13,346

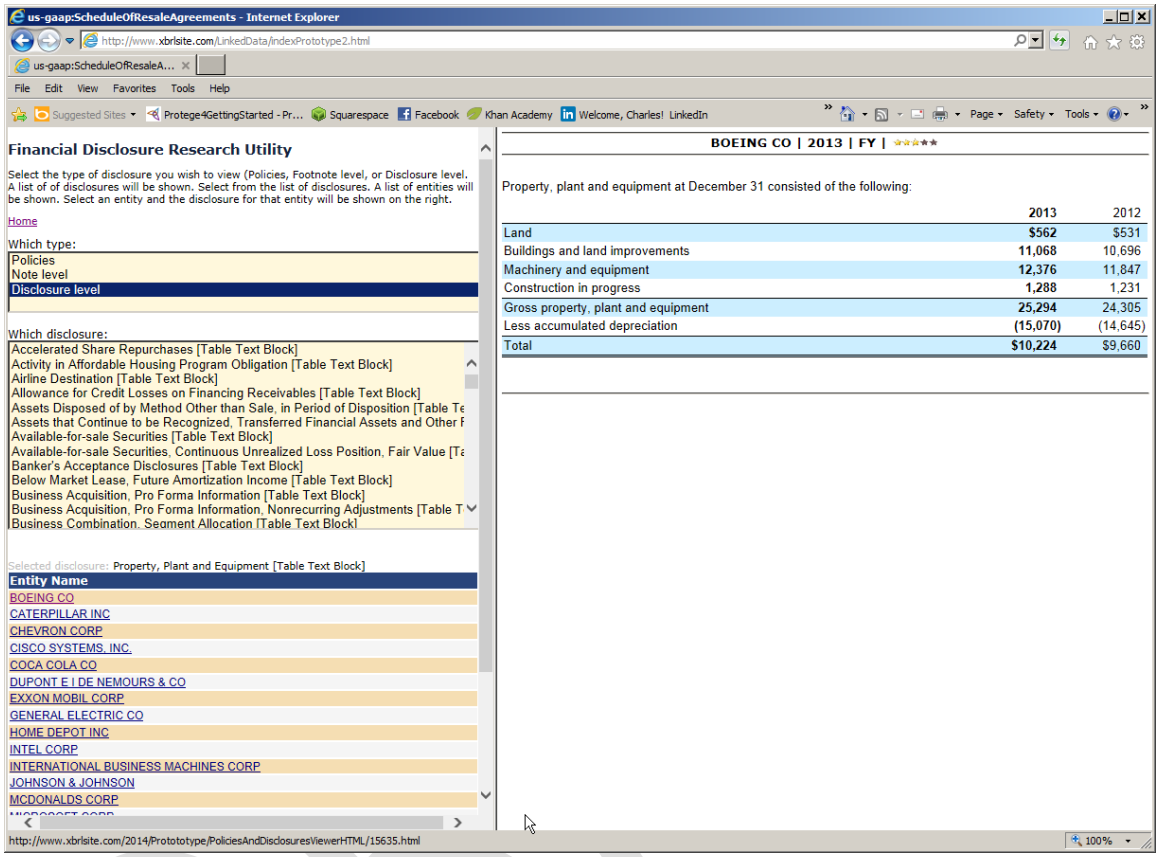
For example, Axis are related to Tables, not to concepts. Your XBRL-based financial filing should comply with these relations. What would it mean if you found an Axis within a set of LineItems?

2.11. Recognize that financial reports contain a discrete set of financial report component which can be categorized.

A financial report may be broken down into a discrete set of report components which are organized together for some purpose. These report components can be grouped in to similar components. For example, a balance sheet is a discrete report component. Every public company reports a balance sheet in their financial report.

[14] *Report level model structure*, http://xbrl.squarespace.com/journal/2014/3/16/report-level-model-structure-update-insights-obtained.html

To make this notion clear, consider the fact that the US GAAP XBRL Taxonomy provides a set of [Text Block]s. Each of those [Text Block]s have a name. The screen shot below is an application[15] which allows its user to look at the disclosure made for reporting entities for each of these different [Text Block]s.



2.12. Recognize and respect relations between SEC Level 3 [Text Block]s and SEC Level 4 Detail disclosures.

Recognize that relations exist between the SEC Level 3 [Text Block]s and SEC Level 4 detailed disclosures within an XBRL-based financial filing. The two disclose the same information, just at different levels of detail.

Consider this example which will explain what is meant. The example provided below comes from this XBRL-based financial filing by Microsoft:

http://www.sec.gov/Archives/edgar/data/789019/000119312513310206/0001193125-13-310206-index.htm

This is Microsoft's disclosure of the items which make up property, plant and equipment provided as an SEC Level 3 [Text block] *us-gaap:PropertyPlantAndEquipmentTextBlock*.

[15] You can use the application to view the report components at this URL: http://www.xbrlsite.com/LinkedData/indexPrototype2.html

Component: (Network and Table)	
Network	1040 - Disclosure - Property and Equipment (Tables) (http://www.microsoft.com/taxonomy/role/NotesToFinancialStatementsPropertyPlantAndEquipmentDisclosureTextBlockTables)
Table	Statement [Table]

Slicers (applies to each fact value in each table cell)

Reporting Entity [Axis]	0000789019 (http://www.sec.gov/CIK)
Legal Entity [Axis]	Entity [Domain]

Statement [Line Items]	Period [Axis] 2012-07-01 - 2013-06-30
Components of Property and Equipment	The components of property and equipment were as follows: (In millions)

June 30,	2013	2012
Land	$ 525	$ 528
Buildings and improvements	7,326	6,768
Leasehold improvements	2,946	2,550
Computer equipment and software	9,242	7,298
Furniture and equipment	2,465	2,087
Total, at cost	22,504	19,231
Accumulated depreciation	(12,513)	(10,962)
Total, net	$ 9,991	$ 8,269

Here is the same information provided as an SEC Level 4 disclosure with the bottom line value (i.e. Total, net) of this disclosure being the concept *us-gaap:PropertyPlantAndEquipmentNet*.

Component: (Network and Table)	
Network	1071 - Disclosure - Components of Property and Equipment (Detail) (http://www.microsoft.com/taxonomy/role/DisclosureComponentsOfPropertyAndEquipment)
Table	Property, Plant and Equipment [Table]

Slicers (applies to each fact value in each table cell)

Reporting Entity [Axis]	0000789019 (http://www.sec.gov/CIK)
Legal Entity [Axis]	Entity [Domain]

Property, Plant and Equipment [Line Items]	Period [Axis] 2013-06-30	2012-06-30
Land	525,000,000	528,000,000
Buildings and improvements	7,326,000,000	6,768,000,000
Leasehold improvements	2,946,000,000	2,550,000,000
Computer equipment and software	9,242,000,000	7,298,000,000
Furniture and equipment	2,465,000,000	2,087,000,000
Total, at cost	22,504,000,000	19,231,000,000
Accumulated depreciation	(12,513,000,000)	(10,962,000,000)
Total, net	9,991,000,000	8,269,000,000

This relationship is not a coincidence and is not unique to the property, plant, and equipment details disclosure. The PDF below points to an analysis of the property, plant and equipment details disclosure for numerous XBRL-based financial filings:

http://www.xbrlsite.com/2014/Library/PropertyPlantAndEquipmentNetByTypeRollUp.pdf

As the analysis shows, the SEC Level 3 and SEC Level 4 disclosure are synchronized in the vast majority of property, plant, and equipment details disclosure.

This blog post shows similar analysis for a hand full of other disclosures:

http://xbrl.squarespace.com/journal/2014/6/24/mind-boggling-diversity-of-sec-xbrl-financial-filings.html

For example, here another disclosure: Property, plant and equipment estimated useful lives. Here is the SEC Level 3 text block disclosure, the filers concept for this SEC Level 3 text block was *ncs:ScheduleOfUsefulLivesPropertyPlantAndEquipmentTableTextBlock*, an extension.

Estimated useful lives for depreciation are:

Buildings and improvements	10 – 39 years
Machinery, equipment and furniture	3 – 15 years
Transportation equipment	4 – 10 years
Computer software and equipment	3 – 7 years

And here is the SEC Level 4 detailed disclosure of the same information, the concept used by the filer was *us-gaap:PropertyPlantAndEquipmentUsefulLife*.

Component: (Network and Table)	
Network	159 - Disclosure - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Details 4) (http://www.ncilp.com/role/SummaryOfSignificantAccountingPoliciesDetails4)
Table	Schedule Of Summary Of Significant Accounting Policies [Table]

Slicers (applies to each fact value in each table cell)

Reporting Entity [Axis]	0000883902 (http://www.sec.gov/CIK)
Period [Axis]	2012-10-29 - 2013-11-03

	Property, Plant and Equipment, Type [Axis]							
	Building and Building Improvements [Member]		Machinery and Equipment [Member]		Transportation Equipment [Member]		Computer Software and Equipment [Member]	
	Range [Axis]		Range [Axis]		Range [Axis]		Range [Axis]	
Summary Of Significant Accounting Policies [Line Items]	Maximum [Member]	Minimum [Member]	Maximum [Member]	Minimum [Member]	Maximum [Member]	Minimum [Member]	Maximum [Member]	Minimum [Member]
Property, Plant and Equipment, Useful Life	P39Y	P10Y	P15Y	P3Y	P10Y	P4Y	P7Y	P3Y

http://www.sec.gov/Archives/edgar/data/883902/000114420413068730/0001144204-13-068730-index.htm

The point is that a similar relation exists for this disclosure and other disclosures. Further, while it is beyond the scope of this document; comparing and contrasting disclosures raises many, many questions which accountants expressing this information should be aware of.

For example with regard to the property, plant and equipment estimated useful lives disclosure: the fact that so many filers created an extension concept for the SEC Level 3 text block or used an obviously incorrect concept to express this disclosure, it is clear that this SEC Level 3 text block is missing from the US GAAP XBRL Taxonomy. Also, if you consider the property, plant and equipment estimated useful lives disclosure and then look at the finite-lived intangible assets estimated useful lives disclosure; you realize that that SEC Level 3 text block is likewise missing from the taxonomy.

HINT: The US GAAP XBRL Taxonomy has many missing SEC Level 3 [Text Block]s. As such, it may seem hard to match the Level 3 [Text Block] and SEC Level 4 detail disclosures. What many filers do is try to find "some text block which is close". This causes two problems. First, it causes your text block to not match the disclosures of others who are using this text block properly. Basically, you will be inconsistent with other SEC filings. Second, it makes it harder to discover text blocks which are missing from the US GAAP XBRL Taxonomy. It is better to create an extension concept than use an inappropriate concept.

HINT: In XBRL-based financial filings, some filers provide the property, plant, and equipment details disclosure using the text block used by most others, the concept *us-gaap:PropertyPlantAndEquipmentTextBlock*. However, rather than the SEC Level 4 detail disclosure having the most commonly used concept *us-gaap:PropertyPlantAndEquipmentNet*, the filers use the concept *us-gaap:PropertyPlantAndEquipmentGross*. What does this mean? Is this intended by the US GAAP XBRL Taxonomy, or is this a mistake? Another similar situation is where some filers use the same SEC Level 3 [Text Block] to express information which is current with other SEC filers using that same SEC Level 3 [Text Block] to disclose information which is noncurrent in the Level 4 detailed representation. Is this intended or is it an oversight? It seems rather odd that the same SEC Level 3 [Text Block] would be used to express different SEC Level 4 detail disclosures.

Another thing to consider is that the US GAAP XBRL Taxonomy provides two different approaches to expressing detailed information in many cases. One way is to differentiate reported facts using concepts. Another way is to express information using one concept, but than an [Axis] and [Member] to differentiate reported facts. Here is an example of the concept based approach:

Component: (Network and Table)	
Network	1071 - Disclosure - Components of Property and Equipment (Detail) (http://www.microsoft.com/taxonomy/role/DisclosureComponentsOfPropertyAndEquipment)
Table	Property, Plant and Equipment [Table]

Slicers (applies to each fact value in each table cell)

Reporting Entity [Axis]	0000789019 (http://www.sec.gov/CIK)
Legal Entity [Axis]	Entity [Domain]

Property, Plant and Equipment [Line Items]	Period [Axis]	
	2013-06-30	2012-06-30
Land	525,000,000	528,000,000
Buildings and improvements	7,326,000,000	6,768,000,000
Leasehold improvements	2,946,000,000	2,550,000,000
Computer equipment and software	9,242,000,000	7,298,000,000
Furniture and equipment	2,465,000,000	2,087,000,000
Total, at cost	22,504,000,000	19,231,000,000
Accumulated depreciation	(12,513,000,000)	(10,962,000,000)
Total, net	9,991,000,000	8,269,000,000

And here is an example of the single concept differentiated using an [Axis] and [Member]s:

Component: (Network and Table)	
Network	4090 - Disclosure - Property and Equipment (Details) (http://www.ascentmediacorporation.com/role/DisclosurePropertyAndEquipmentDetails)
Table	Schedule of Property, Plant and Equipment [Table]

Slicers (applies to each fact value in each table cell)

Reporting Entity [Axis]	0001437106 (http://www.sec.gov/CIK)

Property and Equipment	Period [Axis]							
	2012-01-01 - 2012-12-31				2011-01-01 - 2011-12-31			
	Property, Plant and Equipment, Type [Axis]				Property, Plant and Equipment, Type [Axis]			
	Land [Member]	Building and Leasehold Improvements [Member]	Machinery and Equipment and Software [Member]	Property, Plant and Equipment, Type [Domain]	Land [Member]	Building and Leasehold Improvements [Member]	Machinery and Equipment and Software [Member]	Property, Plant and Equipment, Type [Domain]
Property and equipment, gross	23,170,000	35,206,000	28,685,000	87,061,000	34,896,000	54,575,000	22,763,000	112,234,000
Accumulated depreciation				(30,570,000)				(37,537,000)
Property and equipment, net				56,491,000				74,697,000

Both approaches articulate the same meaning or information. Each approach has its pros and cons. But these two approaches raise the question of whether the US GAAP XBRL Taxonomy should have one text block or two text blocks, one for each detailed approach.

HINT: The two approaches of representing property, plant, and equipment information (the first using [Line Items], the second using [Member]s of an

[Axis]) are semantically equivalent even though they use different XBRL technical syntax approaches.

Another issue which is raised relates to the following example. Suppose a filer decides to provide the property, plant and equipment details on the balance sheet. Does this mean that the SEC Level 3 text block is or is not required?

Property and equipment		
Land	6,234,000,000	6,206,000,000
Buildings and improvements	30,356,000,000	28,653,000,000
Fixtures and equipment	5,583,000,000	5,362,000,000
Computer hardware and software	2,764,000,000	2,567,000,000
Construction-in-progress	843,000,000	1,176,000,000
Accumulated depreciation	(14,402,000,000)	(13,311,000,000)
Property and equipment, net	31,378,000,000	30,653,000,000
Other noncurrent assets	1,602,000,000	1,122,000,000
Total assets	44,553,000,000	48,163,000,000

Again, keep in mind that while the discussion focused on specific disclosures here, property, plant and equipment; these situations exist for virtually every disclosure and there are about a thousand different disclosures.

2.13. Recognize the existence of and properly respect and represent intersections between financial report components.

Financial report components which make up a financial report can be intersected with one or more other report components. For example, "Inventories" summarized in the balance sheet might be detailed within a disclosure contained within a note to the financial report. The "Total inventories" concept is the intersection between the summary and detail report components.

For example, below you see a summary (the balance sheet) and detail (the property, plant and equipment details breakdown).

Balance sheet:

Reporting Entity [Axis]	0000000001 (http://www.sec.gov/CIK)	
Legal Entity [Axis]	Consolidated Entity [Domain]	
	Period [Axis]	
Balance Sheet [Line Items]	2012-12-31	2011-12-31
Assets [Roll Up]		
Current assets [Roll Up]		
Cash, cash equivalents, and marketable securities [Roll Up]		
Cash and cash equivalents	11,000,000	10,000,000
Marketable securities	9,000,000	10,000,000
Cash, cash equivalents, and marketable securities	20,000,000	20,000,000
Accounts receivable, net of allowance for doubtful accounts of $1,000 and $1,000	29,000,000	29,000,000
Inventories	4,000,000	4,000,000
Prepaid expenses	3,000,000	3,000,000
Total current assets	56,000,000	56,000,000
Noncurrent assets [Roll Up]		
Property, plant and equipment, net	82,000,000	82,000,000
Deferred costs	9,000,000	9,000,000
Total noncurrent assets	91,000,000	91,000,000
Total assets	147,000,000	147,000,000
Liabilities and Equity [Roll Up]		
Current liabilities [Roll Up]		
Accounts payable	3,000,000	3,000,000
Accrued liabilities	4,000,000	4,000,000
Current portion of long-term debt	22,000,000	22,000,000
Product warranty accrual, current portion	26,000,000	26,000,000

Property, plant, and equipment breakdown:

Reporting Entity [Axis]		0000000001 (http://www.sec.gov/CIK)	
Legal Entity [Axis]		Consolidated Entity [Domain]	
		Period [Axis]	
Property, Plant and Equipment [Line Items]	Property, Plant and Equipment, Type [Axis]	2012-12-31	2011-12-31
Property, Plant and Equipment, Net, by Type [Roll Up]			
Property, plant and equipment, gross	Land [Member]	40,000,000	40,000,000
	Machinery and equipment [Member]	50,000,000	50,000,000
	Furniture and fixtures [Member]	7,000,000	7,000,000
	Property, Plant and Equipment, All Types [Domain]	97,000,000	97,000,000
Accumulated depreciation	Property, Plant and Equipment, All Types [Domain]	(15,000,000)	(15,000,000)
Property, plant, and equipment, net	Property, Plant and Equipment, All	82,000,000	82,000,000

It is challenging to show the notion of an intersection and how useful it is in software applications. This video walks you through what an intersection is and how to view them using the XBRL Cloud Viewer: http://www.youtube.com/watch?v=INPjwKy2Obs

> HINT: A good way to view intersections is using the free Firefox XBRL plug-in[16] or the XBRL Cloud Viewer.

2.14. Recognize and respect fundamental accounting concepts and unchangeable relations between those accounting concepts

Financial reports contain a "skeleton" which forms a frame for a financial report. For example, financial reports always contain balance sheets; balance sheets always contain the concepts "Assets" and "Liabilities and Equity"; and a balance sheet always balances. There are some exceptions to this general rule; for example when a statement of net assets is used but this case is simply another reporting option which would be handled by a different rule specific to that reporting circumstance. Exceptions such as this does not mean that there are no rules, it just means that there are different rules. See the section relating to report frames.

In addition, this skeleton or fundamental accounting concepts[17] have relations with other fundamental accounting concepts which never change. For example, "Assets" = "Liabilities and Equity" is a relationship which never changes. Assets = Current Assets + Noncurrent Assets is a relationship which never changes.

The fact that a relation exists has nothing to do with whether a reporting entity reported a concept or not. For example, if a reporting entity reported "Assets" and "Current Assets", the relation "Assets = Current Assets + Noncurrent Assets" still holds. In fact, one can leverage that relationship to impute the value of "Noncurrent Assets" using basic mathematics: "Noncurrent Assets = Assets – Current Assets". So while the concept Noncurrent assets might not be reported, that does not mean that the value does not exist.

The verification of the existence of these fundamental accounting concepts and adherence to the specified relations can be automated and enforces using software.

Proof that these fundamental accounting concepts and relations between these concepts exist is XBRL-based financial filings themselves. When one examines public company XBRL-based financial filings provided to the SEC, one sees that 98% of all financial reports have these concepts and relations. This can be observed within the 6,644 XBRL-based financial filings analyzed, all 10-K filings[18], follow this rule. Further, when you look at the XBRL-based reports which do not conform to these rules, the reason for nonconformance can tracked to precisely identifiable reasons for each and every issue and each issue can be attributed to a specific party:

- Concepts missing from or ambiguity in US GAAP XBRL Taxonomy (i.e. FASB error)

[16] To get the Firefox plug-in See http://xbrl.squarespace.com/journal/2010/10/29/game-changer-xbrl-viewer-add-on-for-firefox.html
[17] *Fundamental Accounting Concepts*, http://fundamentalaccountingconcepts.wikispaces.com/
[18] For details of the analysis see http://xbrl.squarespace.com/journal/2014/3/16/fundamental-accounting-concepts-update-insights-obtained.html

- Ambiguity in SEC EFM rules (i.e. SEC error)
- Misinterpretation by filer caused by ambiguity in US GAAP XBRL Taxonomy or EFM rules (i.e. FASB/SEC error)
- Quality control issues on part of reporting entity creating XBRL-based digital financial report (i.e. filer error)
- Misinterpretation of US GAAP XBRL Taxonomy and/or SEC EFM rules by my software (i.e. FASB/SEC error)
- Errors in my mappings and impute rules used by software when reading and then using digital financial report information (i.e. my error)

Here is a screen shot of the balance sheet section of one XBRL-based financial filing[19] which shows how that filing has each of these fundamental accounting concepts and satisfies the relations between each of those fundamental accounting concepts. Visit the link to see the entire set of fundamental accounting concepts for this filing.

▼ Balance Sheet Unclassified

Label	Value	Origin
Current Assets	101,466,000,000	
Noncurrent Assets	40,965,000,000	fac:NoncurrentAssets[40,965,000,000 USD] = fac:Assets[142,431,000,000 USD] - fac:CurrentAssets[101,466,000,000 USD]
Assets	142,431,000,000	
Current Liabilities	37,417,000,000	
Noncurrent Liabilities	26,070,000,000	fac:NoncurrentLiabilities[26,070,000,000 USD] = fac:Liabilities[63,487,000,000 USD] - fac:CurrentLiabilities[37,417,000,000 USD]
Liabilities	63,487,000,000	
Commitments and Contingencies	0	
Temporary Equity	0	fac:TemporaryEquity[0] := 0
Redeemable Noncontrolling Interest	0	fac:RedeemableNoncontrollingInterest[0] := 0
Equity Attributable to Parent	78,944,000,000	
Equity Attributable to Noncontrolling Interest	0	fac:EquityAttributableToNoncontrollingInterest[0] := 0
Equity	78,944,000,000	
Liabilities and Equity	142,431,000,000	

The fact that 98% of all concepts and relations are conformed to is interesting. What is more interesting is to look at the conformance to individual relations. Below you can see the relation code, the most current result of testing of these relations on the complete set of public company XBRL-based financial filings, a description of the relation, and comments about the specific relation:

Code	% Conforms	Relation description	Comments
BS1	98.5	Equity = Equity Attributable to Parent + Equity Attributable to Noncontrolling Interest	
BS2	99.7	Assets = Liabilities and Equity	
BS3	96.5	Assets = Current Assets + Noncurrent Assets (classified balance sheet)	
BS4	98.3	Liabilities = Current Liabilities + Noncurrent Liabilities (classified balance sheet)	

[19] Microsoft financial report, see http://app.secxbrl.info/entity/0000789019/information/2013/FY

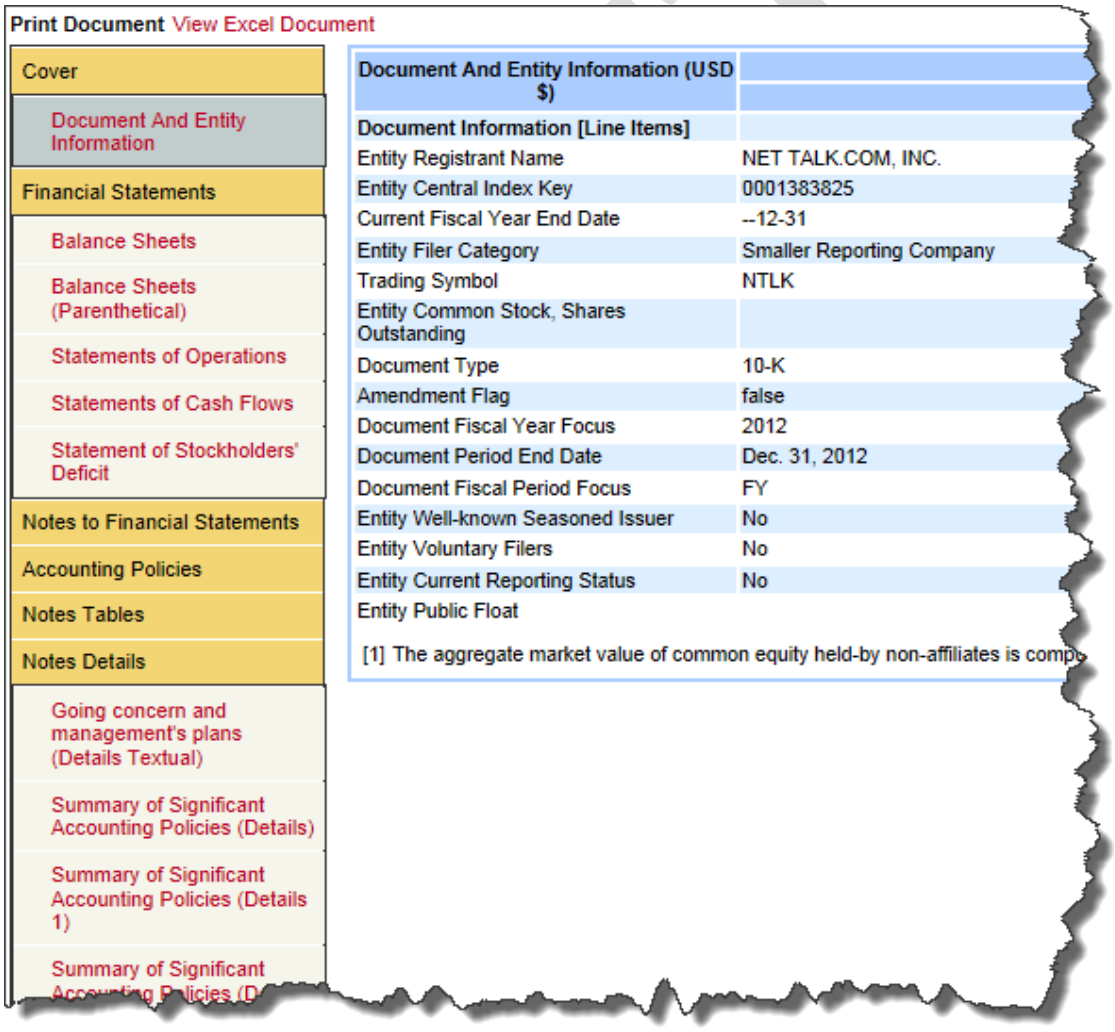
BS5	96.0	Liabilities and Equity = Liabilities + Commitments and Contingencies + Temporary Equity + Redeemable Noncontrolling Interest + Equity	
IS1	93.3	Gross Profit = Revenues - Cost Of Revenue (Multi-step approach)	Not applicable to all entities. Alternatively, entities can report using single step approach.
IS2	95.8	Operating Income (Loss) = Gross Profit - Operating Expenses + Other Operating Income (Expenses) (Multi-step approach)	Not applicable to all entities. Alternatively, entities can report using single step approach.
IS3	92.2	Income (Loss) from Continuing Operations Before Equity Method Investments = Operating Income (Loss) + Nonoperating Income (Loss) - Interest And Debt Expense	Not applicable to all entities. Alternatively, entities may not report Operating Income (Loss).
IS4	99.3	Income (Loss) from Continuing Operations Before Tax = Income (Loss) from Continuing Operations Before Equity Method Investments + Income (Loss) from Equity Method Investments	Not applicable to all entities. Alternatively, entities put Income (Loss) from Equity Method Investments after tax, within revenues, and a handful of other locations.
IS5	91.9	Income (Loss) from Continuing Operations after Tax = Income (Loss) from Continuing Operations Before Tax - Income Tax Expense (Benefit)	
IS6	92.2	Net Income (Loss) = Income (Loss) from Continuing Operations After Tax + Income (Loss) from Discontinued Operations, Net of Tax + Extraordinary Items, Gain (Loss)	
IS7	94.7	Net Income (Loss) = Net Income (Loss) Attributable to Parent + Net Income (Loss) Attributable to Noncontrolling Interest	
IS8	99.6	Net Income (Loss) Available to Common Stockholders, Basic = Net Income (Loss) Attributable to Parent - Preferred Stock Dividends and Other Adjustments	
IS9	98.1	Comprehensive Income (Loss) = Comprehensive Income (Loss) Attributable to Parent + Comprehensive Income (Loss) Attributable to Noncontrolling Interest	
IS10	96.4	Comprehensive Income (Loss) = Net Income (Loss) + Other Comprehensive Income (Loss)	
CF1	96.0	Net Cash Flow = Net Cash Flows, Operating + Net Cash Flows, Investing + Net Cash Flows, Financing + Exchange Gains (Losses)	Alternately, approximately 126 entities do not include Exchange Gains (Losses) within Net Cash Flow.
CF2	97.0	Net Cash Flows, Continuing = Net Cash Flows, Operating, Continuing + Net Cash Flows, Investing, Continuing + Net Cash Flows, Financing, Continuing	
CF3	99.6	Net Cash Flows, Discontinued = Net Cash Flows, Operating, Discontinued + Net Cash Flows, Investing, Discontinued + Net Cash Flows, Financing, Discontinued	
CF4	99.6	Net Cash Flows, Operating = Net Cash Flows, Operating, Continuing + Net Cash Flows, Operating, Discontinued	
CF5	99.9	Net Cash Flows, Investing = Net Cash Flows, Investing, Continuing + Net Cash Flows, Investing, Discontinued	
CF6	99.9	Net Cash Flows, Financing = Net Cash Flows, Financing, Continuing + Net Cash Flows, Financing, Discontinued	

HINT: You don't want to turn discovering the fundamental information into a guessing game. You want to make it safe for software applications to gather information. If software cannot sort out this fundamental information, it is unlikely that software will be able to sort out the details. Also, these fundamental concepts are just that, fundamental. There are more of these sorts of relations. These relations are simply a starting point.

2.15. Recognize and respect common financial report component arrangement patterns.

Financial report components are related to other financial report components. The discrete set of components which make up a financial report can have a "sequence" or "ordering" or some arrangement. Further, groups of report components exist such as "statement", "disclosure", etc., and are that way are also related.

The SEC interactive data viewer leverages these relations. The SEC viewer also leverages the numbers provided for each network to organize the components of the report. The SEC interactive data viewer separates Level 1 (note level) [Text Block]s, Level 2 accounting policy [Text Block]s, Level 3 (disclosure level) [Text Block]s, and Level 4 detailed disclosures. You can see this leverage in the contents page of the left side of the SEC interactive data viewer. Other viewers likewise leverage this information for sequencing and ordering a digital financial report.



2.16. Recognize and respect common concept arrangement patterns which indicate how a set of concepts are organized within a [Line Items].

The set of accounting concepts which make up [Line Items] are not random; rather they can be grouped into a set of patterns referred to as concept arrangement patterns. A set of [Line Items] might have one or more sets of concept arrangement patterns. If more than one concept arrangement pattern exists, you can think of each set as a component block. Identified and commonly used concept arrangement patterns include:

- **Roll up**: A concept arrangement pattern with the following form: Fact A + Fact B + Fact C + Fact *N* = Fact D (a total)
- **Roll forward**: A concept arrangement pattern with the following form: Beginning balance + one or more changes = Ending balance
- **Adjustment**: A concept arrangement pattern with the following form: Originally stated balance + one or more adjustments = restated balance
- **Variance**: A concept arrangement pattern with the following form: Actual amount – Budgeted amount = Variance. A variance is a change across a reporting scenario.
- **Complex computation**: A complex computation is a type of concept arrangement pattern where facts are related by some computation other than a roll up, roll forward, adjustment, or variance. For example, Net income / Weighted average shares = Earnings per share.
- **Hierarchy**: A hierarchy is a type of concept arrangement pattern where facts are related in some way, but not mathematically. For example, a set of accounting policies is related in that they are accounting policies, but they have no mathematical relation.
- **Text block**: A [Text Block] is a type of concept arrangement pattern where there is only one fact reported in the form of a [Text Block].

For example, roll up:

Maturities of Long-term Debt [Line Items]	Period [Axis] 2010-12-31
Maturities of Long-term Debt [Roll Up]	
Current	22,000,000
2012	1,000,000
2013	1,000,000
2014	1,000,000
2015	1,000,000
Thereafter	15,000,000
Total	41,000,000

HINT: Some rendering engines understand more concept arrangement patterns better than others. Some rendering engines separate component blocks better than others.

2.17. Recognize and respect common member arrangement patterns.

The set of [Member]s which make up the domain of an [Axis] are not random; they can be grouped into a set of common member arrangement patterns. The [Member]s of an [Axis] tend to be used to differentiate different types of whole-part type relations. While we will only provide summary information about whole-part relations here, the document *A Taxonomy of Part-Whole Relations*[20] is an excellent reference for understanding these sorts of breakdowns. The presentation *Knowledge Representation for the Semantic Web*[21] provides additional details:

- **Component-integralObject**: Indicates that a component contains some integral object. For example, the component handle is part of the integral object cup; wheels are a component part of a car; a refrigerator is a component of a kitchen.
- **Member-collection**: Indicates that some member is part of some collection. For example a ship is part of a fleet. Or, a subsidiary is part of an economic entity.
- **Portion-mass**: Indicates that some portion is part of some mass. For example a slice is part of a pie.
- **Stuff-object**: Indicates that some "stuff" is part of some object. For example steel is part of a car. (This may not be appropriate or necessary for financial reporting.)
- **Feature-activity**: Indicates that some feature is part of some activity. For example the feature "paying" is part of the activity "shopping".
- **Place-area**: Indicates that some physical place is part of some area. For example the place "Everglades" is part of the area "Florida".

[CSH: It is highly probable that not all these types of relations are important to financial reporting and that financial reporting has specific classes of these sorts of breakdowns. More work is necessary to investigate this.]

These whole-part type relations may, or may not, aggregate across the set of [Member]s within a domain. Some do, some do not. Identified and commonly used aggregation of member arrangement patterns includes:

- **Partial set**: A partial sets are [Member]s of an [Axis] which do not comprise the full spectrum or universe of possible options. For example, "United States" and "Spain" is a partial set of countries. [CSH: I don't think this is a pattern because all sets are complete with respect to a specific financial report.]

[20] *A Taxonomy of Part-Whole Relations*, http://csjarchive.cogsci.rpi.edu/1987v11/i04/p0417p0444/MAIN.PDF
[21] *Knowledge Representation for the Semantic Web*, http://www.semantic-web-book.org/w/images/3/35/W2012-07-partonomies.pdf

- **Complete flat set**: A complete flat set is a "flat" (meaning no sub-relations) and complete list of [Member]s of an [Axis]. For example, a listing of all the business segments could be a complete flat set if it is (a) complete and (b) it is one flat list with no sub relations.
- **Complete hierarchical set**: A complete hierarchical set is like a complete flat set in that it is complete; however a complete hierarchical set does have sub relations making it hierarchical as compared to flat. For example, a list of the countries which make up the geographic areas of a reporting entity which is further grouped by regions into which each country fits is a complete hierarchical set.
- **Complete complex set**: A complete complex set is like a complete flat and complete hierarchical set in that it is complete; however the hierarchy of relations is not flat nor a simple one-level hierarchy but rather the hierarchy has multiple levels and is therefore considered complex.

Only "flat sets" should be used as XBRL has no way of articulating the meaning of relations between [Member]s within a set of [Member]s.

> HINT: Only flat sets of [Member]s should be used because XBRL has now specific way, other than XBRL Formula, to articulate a hierarchy of [Member]s. So, rather than creating one [Axis] with a hierarchy, create two [Axis] to express the different hierarchies.

Recognize that there are different types of relationships between [Member]s. One big issue with XBRL presentation relations in general and the US GAAP Taxonomy in particular is the vagueness of the "parent-child" relationship which is used to express relationships.

Basically, the arcrole "http://www.xbrl.org/2003/arcrole/parent-child" used to communicate that there is in fact some sort of relationship leaves open to interpretation exactly what that relation is and what the relation means. While what is expressed might be clear to those who use the "parent-child" relationship to express something; the intent tends to not come through, be misinterpreted, be inconsistent because of different people working on different areas of a taxonomy, and in general leads to confusion.

2.18. Avoid mixing or run-together concept arrangement patterns.

Mixing more than one concept arrangement pattern together increases the difficulty of reading disclosure information. While running different patterns together is not illegal per SEC XBRL filing rules, doing this can cause challenges to rendering engines trying to present the information in human readable form and cause information to be hard to comprehend.

For example, mixing a "roll up" and a "roll forward" should be avoided as information appears to run together and is hard to understand. For example, representing a roll up which then runs into a roll forward or two distinct roll ups together without differentiating them should be avoided.

Avoid doing this:

http://www.sec.gov/Archives/edgar/data/47217/000104746912011417/0001047469-12-011417-index.htm

Commitments (Details) (USD $) In Millions, unless otherwise specified	12 Months Ended		
	Oct. 31, 2012	Oct. 31, 2011	Oct. 31, 2010
Commitments			
Rent expense	$ 1,012	$ 1,042	$ 1,062
Sublease rental income	37	38	46
Property under capital lease	882	577	
Accumulated depreciation on property under capital lease	453	454	
Minimum lease payments, sublease rental income			
Minimum lease payments, 2013	780		
Minimum lease payments, 2014	665		
Minimum lease payments, 2015	517		
Minimum lease payments, 2016	351		
Minimum lease payments, 2017	218		
Minimum lease payments, thereafter	805		
Minimum lease payments, total	3,336		
Less: Sublease rental income, 2013	(28)		
Less: Sublease rental income, 2014	(23)		
Less: Sublease rental income, 2015	(18)		
Less: Sublease rental income, 2016	(9)		
Less: Sublease rental income, 2017	(4)		
Less: Sublease rental income, thereafter	(12)		
Sublease rental income, total	(94)		
Minimum lease payments net of sublease rental income, 2013	752		
Minimum lease payments net of sublease rental income, 2014	642		
Minimum lease payments net of sublease rental income, 2015	499		
Minimum lease payments net of sublease rental income, 2016	342		
Minimum lease payments net of sublease rental income, 2017	214		
Minimum lease payments net of sublease rental income, thereafter	793		
Minimum lease payments net of sublease rental income, total	3,242		
Capital lease commitments			
Capital lease commitments, 2013	59		
Capital lease commitments, 2014	240		
Capital lease commitments, 2015	11		
Capital lease commitments, 2016	7		
Capital lease commitments, 2017	4		
Capital lease commitments, thereafter	33		
Capital lease commitments, total	354		
Less: Interest payments, 2013	(8)		
Less: Interest payments, 2014	(6)		
Less: Interest payments, 2015	(3)		
Less: Interest payments, 2016	(2)		
Less: Interest payments, 2017	(2)		
Less Interest payments, thereafter	(12)		
Interest payments, total	(33)		

Instead, try this:

http://www.sec.gov/Archives/edgar/data/1285785/000119312512323518/0001193125-12-323518-index.htm

Concept	Period [Axis]		
	2011-06-01 - 2012-05-31	2010-06-01 - 2011-05-31	2009-06-01 - 2010-05-31
Unrecorded Unconditional Purchase Obligation [Abstract]			
2012	1,874,000,000		
2013	315,800,000		
2014	176,600,000		
2015	117,700,000		
2016	107,400,000		
Subsequent years	2,099,900,000		
Total	4,691,400,000		
A schedule of future minimum lease payments under non-cancelable operating leases follows:			
2012	41,100,000		
2013	24,600,000		
2014	16,300,000		
2015	10,200,000		
2016	6,300,000		
Subsequent years	13,900,000		
Total	112,400,000		
Rental expense and purchases made for the fiscal period were as follows:			
Rental expense for the fiscal period			
Purchases made under long-term commitments during the reporting period	3,100,000,000	2,200,000,000	1,300,000,000
Contracts Revenue	158,200,000	186,800,000	66,100,000
Surety Bonds Outstanding [Abstract]			
Surety bonds outstanding for mining reclamation obligations	171,300,000		
Surety bonds outstanding for other than mining reclamation obligations	13,900,000		
Total amount of surety bonds outstanding	185,200,000		

2.19. Avoid mixing distinct characteristics and concepts.

Representing what should be two distinct and unrelated disclosures within one report component should be avoided. For example, many filers represent preferred and common stock together within one report components when two distinct and separate report components are called for.

Avoid this:

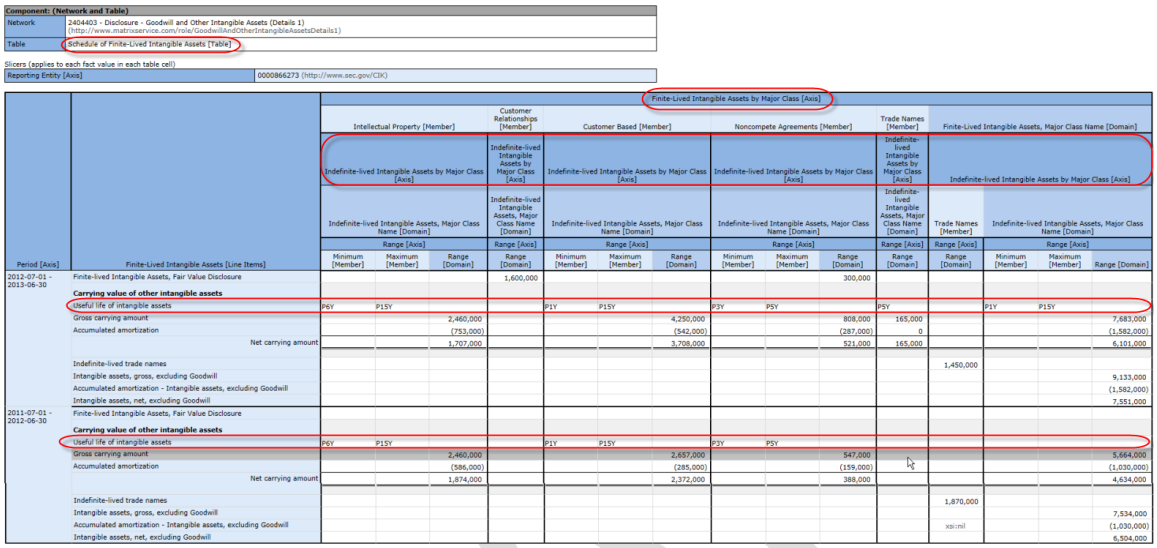
http://www.sec.gov/Archives/edgar/data/896878/000089687812000146/0000896878-12-000146-index.htm

Period [Axis]	Debt Instrument [Line Items]	Long-term Debt, Type [Axis]					
		Operating Lease Expense [Member]	Purchase Commitment [Member]	Long-term Debt, Type [Domain]			
		Debt Instrument [Axis]	Debt Instrument [Axis]	Debt Instrument [Axis]			
		Debt Instrument, Name [Domain]	Debt Instrument, Name [Domain]	5.40 percent fixed-rate notes due 2012 [Member]	5.75 percent fixed-rate notes due 2017 [Member]	Debt Instrument, Name [Domain]	
		Investment Type [Axis]	Investment Type [Axis]	Investment Type [Axis]	Investment Type [Axis]	Investment Type [Axis]	
		Investment Type Categorization [Domain]	Investment Type Categorization [Domain]	Investment Type Categorization [Domain]	Investment Type Categorization [Domain]	Senior Notes [Member]	Investment Type Categorization [Domain]
2011-08-01 - 2012-07-31	**Long Term Obligations And Commitments (Textuals)**						
	Senior notes			0	500,000,000		500,000,00
	Senior notes, rate						
	Interest paid					56,000,000	60,000,0
	Cash paid to license technology						10,000,00
	Period for contractual maturities of senior notes						
	Unamortized discounts on senior notes						(1,000,00
	Amount payable over next ten fiscal years for agreement to license technology						
	Present value of license technology agreement						
	Years lease term can be extended under lease option						
	Operating leases, rent expense						51,000,00
	Reported as:						
	Current portion of long-term debt						
	Long-term debt						499,000,00
	Total senior notes						499,000,00
	Other long-term obligations						
	Total license fee payable						54,000,00
	Total deferred rent						53,000,00
	Long-term deferred revenue						42,000,0
	Long-term income tax liabilities						41,000,0
	Other						5,000,0
	Total [illegible] obligations						5,000

The rendering of the rendering engine above is poor because the representation of the information is poor.

Consider this extreme example. Below, a filer uses both the "Finite-lived intangible asset Type [Axis]" and the "Indefinite-lived intangible assets Type [Axis]" on the same report component. A fact can never be both a finite-lived and an indefinite-lived intangible asset.

http://www.sec.gov/Archives/edgar/data/866273/000086627313000057/0000866273-13-000057-index.htm



Component: (Network and Table)
Network: 2404403 - Disclosure - Goodwill and Other Intangible Assets (Details 1) (http://www.matrixservice.com/role/GoodwillAndOtherIntangibleAssetsDetails1)
Table: Schedule of Finite-Lived Intangible Assets [Table]
Slicers (applies to each fact value in each table cell)
Reporting Entity [Axis]: 0000866273 (http://www.sec.gov/CIK)

Finite-Lived Intangible Assets by Major Class [Axis]

Period [Axis]	Finite-Lived Intangible Assets [Line Items]	Intellectual Property [Member]			Customer Relationships [Member]	Customer Based [Member]			Noncompete Agreements [Member]			Trade Names [Member]	Finite-Lived Intangible Assets, Major Class Name [Domain]			
		Indefinite-lived Intangible Assets by Major Class [Axis]			Indefinite-lived Intangible Assets by Major Class [Axis]	Indefinite-lived Intangible Assets by Major Class [Axis]			Indefinite-lived Intangible Assets by Major Class [Axis]			Indefinite-lived Intangible Assets by Major Class [Axis]	Indefinite-lived Intangible Assets by Major Class [Axis]			
		Indefinite-lived Intangible Assets, Major Class Name [Domain]			Indefinite-lived Intangible Assets, Major Class Name [Domain]	Indefinite-lived Intangible Assets, Major Class Name [Domain]			Indefinite-lived Intangible Assets, Major Class Name [Domain]			Indefinite-lived Intangible Assets, Major Class Name [Domain]	Trade Names [Member]	Indefinite-lived Intangible Assets, Major Class Name [Domain]		
		Range [Axis]			Range [Axis]	Range [Axis]			Range [Axis]			Range [Axis]	Range [Axis]	Range [Axis]		
		Minimum [Member]	Maximum [Member]	Range [Domain]	Range [Domain]	Minimum [Member]	Maximum [Member]	Range [Domain]	Minimum [Member]	Maximum [Member]	Range [Domain]	Range [Domain]	Range [Domain]	Minimum [Member]	Maximum [Member]	Range [Domain]
2012-07-01 - 2013-06-30	Finite-lived Intangible Assets, Fair Value Disclosure				1,600,000						300,000					
	Carrying value of other intangible assets															
	Useful life of intangible assets	P6Y	P15Y			P1Y	P15Y		P3Y	P5Y		P5Y		P1Y	P15Y	
	Gross carrying amount			2,460,000				4,250,000			808,000	165,000				7,683,000
	Accumulated amortization			(753,000)				(542,000)			(287,000)	0				(1,582,000)
	Net carrying amount			1,707,000				3,708,000			521,000	165,000				6,101,000
	Indefinite-lived trade names												1,450,000			
	Intangible assets, gross, excluding Goodwill															9,133,000
	Accumulated amortization - Intangible assets, excluding Goodwill															(1,582,000)
	Intangible assets, net, excluding Goodwill															7,551,000
2011-07-01 - 2012-06-30	Finite-lived Intangible Assets, Fair Value Disclosure															
	Carrying value of other intangible assets															
	Useful life of intangible assets	P6Y	P15Y			P1Y	P15Y		P3Y	P5Y						
	Gross carrying amount			2,460,000				2,657,000			547,000					5,664,000
	Accumulated amortization			(586,000)				(285,000)			(159,000)					(1,030,000)
	Net carrying amount			1,874,000				2,372,000			388,000					4,634,000
	Indefinite-lived trade names												1,870,000			
	Intangible assets, gross, excluding Goodwill															7,534,000
	Accumulated amortization - Intangible assets, excluding Goodwill												xsi:nil			(1,030,000)
	Intangible assets, net, excluding Goodwill															6,504,000

2.20. Recognize need for both automated and manual verification processes.

The processes used for verification of the "true and fair representation" of financial information can take two general forms: automated processes performed using machines and manual processes performed by humans.

Automated verification processes are preferable because they are more reliable and dependable, they take less time, and they cost less than manual processes. Verification can be automated only to the extent rules are provided to verify aspects of a digital financial report. No financial report can be verified 100% using automated processes and therefore manual verification is always necessary. The following is a summarized version of automated and manual verification tasks[22]:

#	Verification/validation task	Automatable	Manual
1	Valid XBRL technical syntax	X	
2	Edgar Filer Manual (EFM) valid	X	X
3	Fiscal period, balance sheet date, income statement date valid	X	
4	Root economic entity (entity of focus) discovered	X	
5	Fundamental accounting concepts and relations valid	X	
6	Industry specific accounting concepts and relations valid	X	X
7	Report level model structure valid	X	
8	Primary financial statements discovered	X	X

[22] For more information see, http://www.xbrlsite.com/2014/Library/DisclosureChecklist.pdf

#	Verification/validation task	Automatable	Manual
9	Primary financial statements foot and roll forward appropriately	X	
10	Required disclosures discovered	X	
11	Each SEC Level 3 [Text Block] and SEC Level 4 detail disclosure match	X	X
12	Each SEC Level 4 detail disclosure valid	X	X
13	Current report prior year facts match prior report current year reported facts	X	
14	Variance from prior periods analysis OK	X	X
15	Variance analysis from peers OK	X	X
16	Report-ability rules have been met	X	X
17	SEC Level 1 footnote disclosures appropriate		X
18	SEC Level 2 policy text block disclosures appropriate		X
19	Report element selection appropriate (justifiable/defensible)		X
20	Reported facts appropriate		X
21	Consistency with peers appropriate		X
22	Consistency with prior periods appropriate		X
23	True and fair representation of financial information of economic entity		X

The following is a more detailed explanation of verification tasks which must be performed and organized in a different manner:

- **Comply with US GAAP**: Clearly a financial report must comply with the rules of US GAAP including SEC rules, industry/activity practices, other common practices, and reporting entity choices where they have such choices.
- **Full inclusion/false inclusion**: Everything which should be disclosed has been disclosed as deemed appropriate by US GAAP, SEC, industry/activity practices, common practices, and reporting entity choices.
- **Foots, cross casts, ticks and ties**: A financial report foots, cross casts, and otherwise "ticks and ties". All mathematical relations must be intact. As accountants we understand this and many times this fact disappears into our unconsciousness because it is so ingrained into what we do and how we do it. Of course things foot and cross cast; of course the pieces tie together.
- **All financial report formats convey the same message**: A financial report can be articulated using paper and pencil, Microsoft Word, PDF, HTML, XBRL, RDF/OWL, or some other computer readable or computer readable formats. While the format may change, the message communicated, the story you tell, should not change. Each format should communicate the same message, regardless of the medium used to convey your message.
- **Justifiable/defensible report characteristics**: Facts reported and the characteristics which describe those reported facts should be both justifiable and defensible by the reporting entity.
- **Consistency between periods**: Financial information expressed within one reporting period should be consistent with the financial information expressed within subsequent reporting periods, where appropriate. Clearly new information will be added and information which becomes irrelevant will be removed from a financial report. Changes between report elements which existed in both periods should be justifiable and defensible as opposed to arbitrary and random.

- **Consistency with peer group**: If a reporting entity chooses one approach/report element and a peer chooses a different approach/report element; clearly some good, explainable reason should exist for such difference. The judgment of an accountant can determine if the difference is appropriate or not. Differences of opinion can also exist. However, some sort of rational will likely exist for differences or similarities. Because of ambiguity, different conclusions can be reached and each be reasonable and appropriate.
- **Logical representations indicated by understandable renderings**: Renderings of facts; characteristics describe facts; parenthetical explanations which further describe such facts; and other such model structures should make sense and be both consistent with other similar logical structures and logical from the perspective of the technical syntax used to articulate that information. While there may be differences of opinion as to how to format or present such information; there should be significantly less or no dispute about the logic. Disclosures are informational, they relate to information without regard to formatting or other presentational artifacts. Notes relate to organizing disclosures and are presentational in nature. Someone creating a financial report has far more latitude and discretion as to how to organize disclosures into notes than they do as to what must be disclosed.
- **Unambiguous business meaning**: A financial report should be unambiguous to an informed reader. The business meaning of a financial report should be clear/unambiguous to the creator of the financial report and likewise clear/unambiguous to the users of that financial report. Both the creator and users should walk away with the same message or story. A financial report should be usable by regulators, financial institutions, analysts, investors, economists, researchers, and others who desire to make use of the information the report contains.

The following is a set of criteria which is verified using 100% automated processes and the results obtained from the 6,644 XBRL-based financial filings verified by the processes[23]:

[23] *Understanding the Minimum Processing Tests*, http://www.xbrlsite.com/2014/Library/UnderstandingMinimumProcessSteps-2014-02-14.pdf

#	Goal or Desired State	Process tests	Current State
1	Consistent XBRL technical syntax	Automated XBRL technical syntax error checks	99.9% meet the criteria of consistent XBRL technical syntax rules and are therefore fundamentally readable documents
2	Consistent EDGAR Filer Manual (EFM) syntax/semantics	Automated EFM syntax and semantics error checks	97.9% meet the criteria of specified automatable SEC EDGAR Filer Manual (EFM) rules
3	Consistent report level structure	Automated model structure error checks	99.9% meet the criteria of consistent and unambiguous report level model structure relations
4	Detectable exonomic entity or accounting entity or "root reporting entity" or "entity of focus"	Successful and unambiguous identification of the "entity of focus"	99.2% provide a detectable "root of reporting entity" so that information can be properly discovered using automated processes
5	Detectable and unambigous current period balance sheet and income statement period dates	Successful and unambiguous identification of the current balance sheet date and income statement period	99.3% provide a detectable and unambiguous current balance sheet date
6	Detectable and unambigous set of fundamental reported facts and intact relations between those fundamental facts which prove trustworthy nature of information	Automated verification checks to be sure fundamental accounting concepts are distinguishable/decipherable and the relations between those fundamental concepts are intact/sound	97.8% consistently report or provide enough information to impute 51 fundamental accounting concepts and those concepts consistently adhere to 21 basic accounting relationships
7	Detectable basic primary financial statement roll up computations are intact which prove trustworthy nature of information	Automated verification checks for existence of business rules which articulate these basic primary financial statement relations and successful passing of these business rules	90.1% provide detectable roll up rules for balance sheet, income statement, cash flow statement

2.21. Recognize that concepts cannot be moved between fundamental accounting concept categories or classes.

Concepts defined as one class of financial reporting concept by the US GAAP XBRL Taxonomy cannot be redefined to be within some other class of financial reporting concept. For example, a "nonoperating income (expense)" concept cannot be used as an "operating income (expense) concept."

While the US GAAP XBRL Taxonomy does not explicitly or formally "map" each taxonomy concept to a fundamental concept (i.e. define class-subclass relations), the relations are implicit. Both the presentation relations, but more likely the calculation relations which exist in the taxonomy implicitly articulate this information.

> HINT: Generally when a reporting entity moves the concept *Interest and Debt Expense* to be included within *Nonoperating Income (Loss)* the reason is because there is a concept missing from the US GAAP XBRL Taxonomy. The missing concept is essentially *Nonoperating Income (Loss) Including Interest and Debt Expense* which combines the two concepts.

Each concept created within a reporting entity taxonomy should be associated with some fundamental accounting concept. For example, all concepts defined which are an asset should be specifically defined as such using perhaps a "class-subclass" type relation or the existing "general-special" relation defined by XBRL.

This can be achieved using the XBRL definition linkbase.

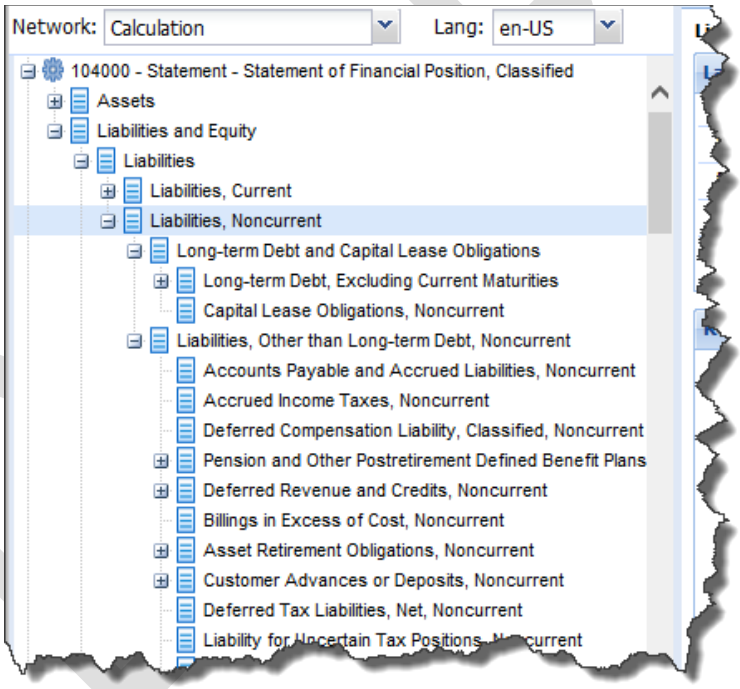
[CSH: This needs to be reworked, but I don't want to lose this idea.]

Here is an example of a violation of the use of a fundamental accounting concept. The summary of the situation is that Procter & Gamble uses the concept "us-gaap:LiabilitiesNoncurrent" to express not the total of noncurrent liabilities like 99.9% of SEC filers do who provide that balance sheet line item and not like the US GAAP XBRL Taxonomy clearly specifies that item; rather Procter & Gamble uses that concept to express what they have labeled in their filing "Other Non-Current Liabilities". They do provide "Total Liabilities, Noncurrent" using the concept "us-gaap:OtherLiabilitiesNoncurrent"; however, that concept also uses an incorrect concept. This line item also is not on the balance sheet.

This is the Procter & Gamble XBRL submission: http://goo.gl/zMYDo6

This will let you look at the submission using the XBRL Cloud Viewer: http://goo.gl/A9fo9u

US GAAP XBRL Taxonomy shows relations for "us-gaap:LiabilitiesNoncurrent" as being part of "us-gaap:Liabilities" (i.e. Current liabilities + Noncurrent liabilities = Total liabilities) http://goo.gl/stJYn4



Liabilities, Noncurrent

Labels

Type	Lang	Label
Standard Label	en-US	Liabilities, Noncurrent
Documentation	en-US	Amount of obligation due after one year or beyond the normal operating cycle, if longe
Total Label	en-US	Liabilities, Noncurrent, Total
Change Label 2013	en-US	[2012-05] {Modified Documentation Label. Originally read as follows: Total obligations following twelve months or one business cycle.}

References

Properties

Property	Value
Name	LiabilitiesNoncurrent
Namespace	http://fasb.org/us-gaap/2013-01-31
Data Type	xbrli:monetaryItemType
XBRL Type	monetaryItemType
Substitution Group	xbrli:item
Period Type	instant
Abstract	false
Nillable	true
Ba	

SEC Interactive Data Viewer:

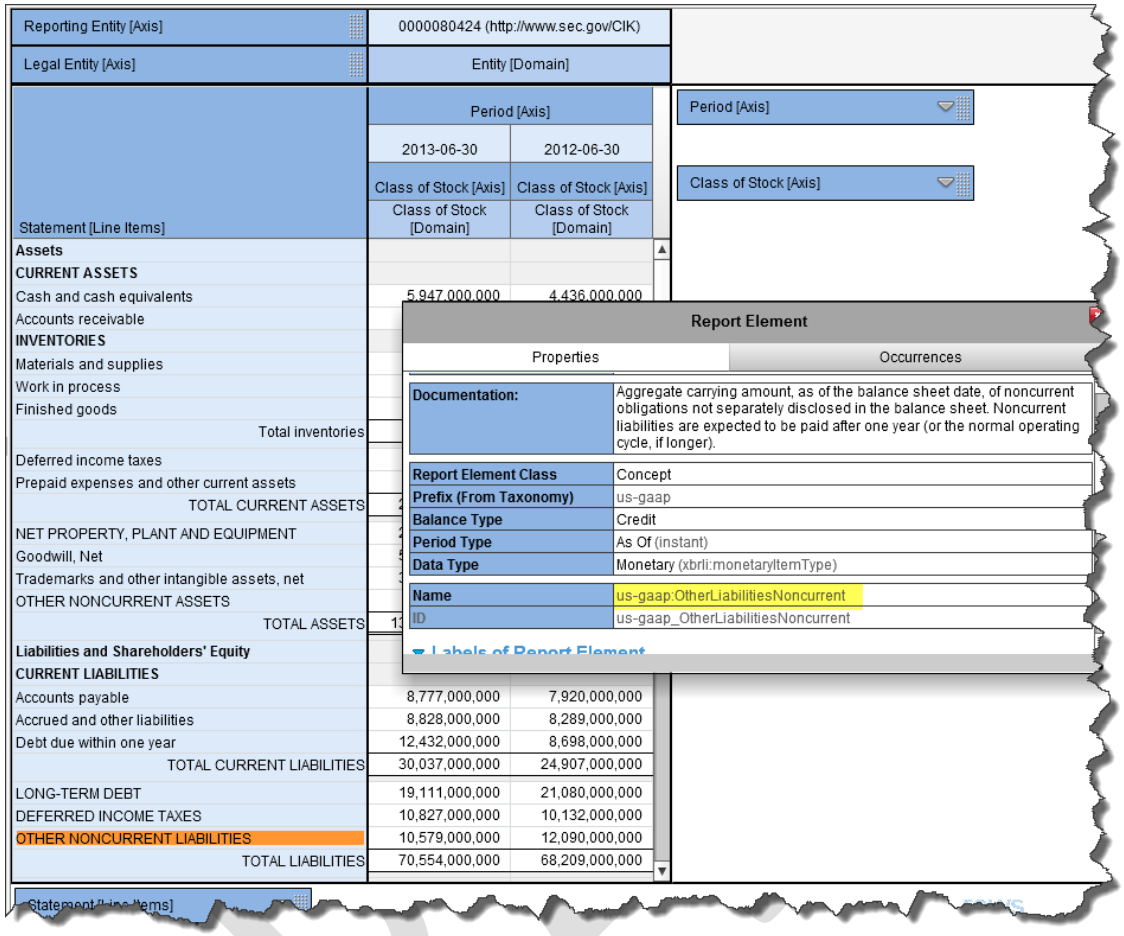
SUPPLEMENTAL FINANCIAL INFORMATION Other Liabilities (Details) (USD $) In Millions, unless otherwise specified	Jun. 30, 2013	Jun. 30, 2012
OTHER NONCURRENT LIABILITIES		
Pension benefits	$ 6,027	$ 5,684
Other postretirement benefits	1,713	3,270
Uncertain tax positions	2,002	2,245
Other Non-Current Liabilities	837	891

x

- Definition
Total obligations incurred as part of normal operations that is expected to be repaid beyond the following twelve months or one business cycle.

+ References
- Details
Name: us-gaap_LiabilitiesNoncurrent
Namespace Prefix: us-gaap_
Data Type: xbrli:monetaryItemType
Balance Type: credit
Period Type: instant

XBRL Cloud Viewer showing balance sheet:



Reporting Entity [Axis]	0000080424 (http://www.sec.gov/CIK)	
Legal Entity [Axis]	Entity [Domain]	
Statement [Line Items]	Period [Axis] 2013-06-30 / Class of Stock [Axis] Class of Stock [Domain]	Period [Axis] 2012-06-30 / Class of Stock [Axis] Class of Stock [Domain]
Assets		
CURRENT ASSETS		
Cash and cash equivalents	5,947,000,000	4,436,000,000
Accounts receivable		
INVENTORIES		
Materials and supplies		
Work in process		
Finished goods		
Total inventories		
Deferred income taxes		
Prepaid expenses and other current assets		
TOTAL CURRENT ASSETS		
NET PROPERTY, PLANT AND EQUIPMENT		
Goodwill, Net		
Trademarks and other intangible assets, net		
OTHER NONCURRENT ASSETS		
TOTAL ASSETS	1	
Liabilities and Shareholders' Equity		
CURRENT LIABILITIES		
Accounts payable	8,777,000,000	7,920,000,000
Accrued and other liabilities	8,828,000,000	8,289,000,000
Debt due within one year	12,432,000,000	8,698,000,000
TOTAL CURRENT LIABILITIES	30,037,000,000	24,907,000,000
LONG-TERM DEBT	19,111,000,000	21,080,000,000
DEFERRED INCOME TAXES	10,827,000,000	10,132,000,000
OTHER NONCURRENT LIABILITIES	10,579,000,000	12,090,000,000
TOTAL LIABILITIES	70,554,000,000	68,209,000,000

Period [Axis]

Class of Stock [Axis]

Statement [Line Items]

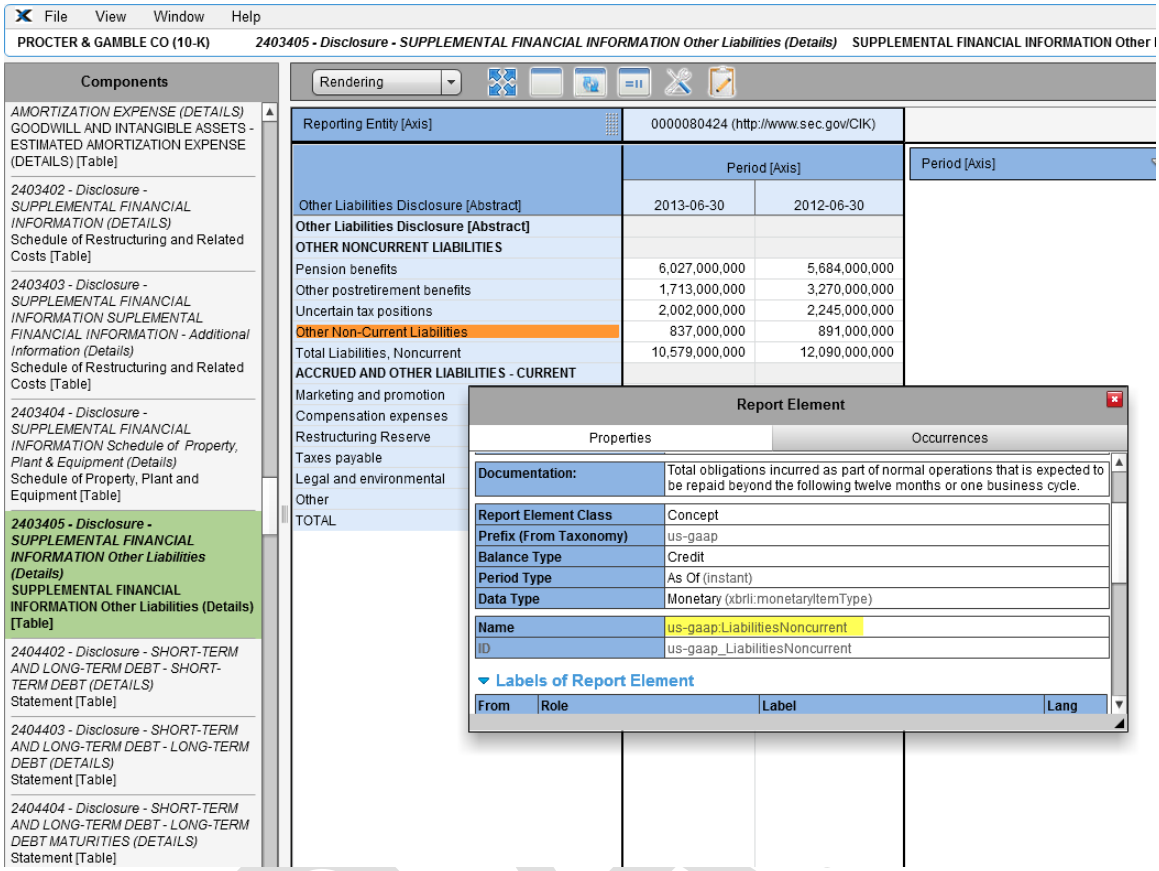
Report Element

Properties | Occurrences

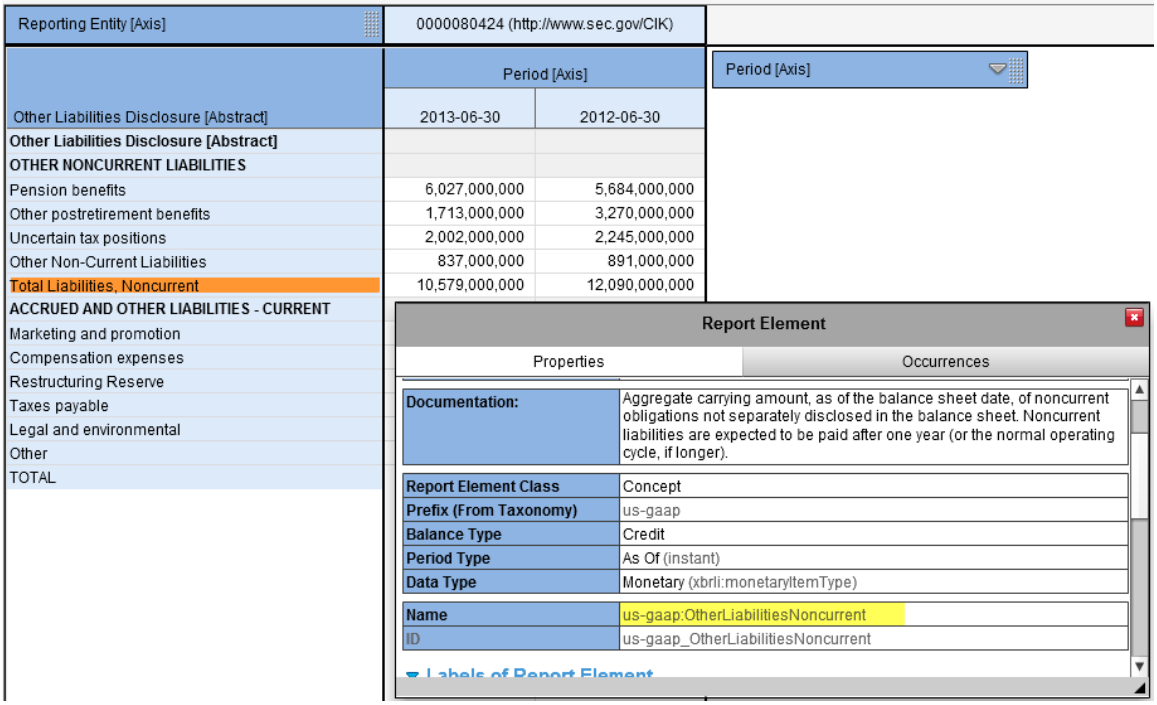
Documentation:	Aggregate carrying amount, as of the balance sheet date, of noncurrent obligations not separately disclosed in the balance sheet. Noncurrent liabilities are expected to be paid after one year (or the normal operating cycle, if longer).
Report Element Class	Concept
Prefix (From Taxonomy)	us-gaap
Balance Type	Credit
Period Type	As Of (instant)
Data Type	Monetary (xbrli:monetaryItemType)
Name	us-gaap:OtherLiabilitiesNoncurrent
ID	us-gaap_OtherLiabilitiesNoncurrent

▼ Labels of Report Element

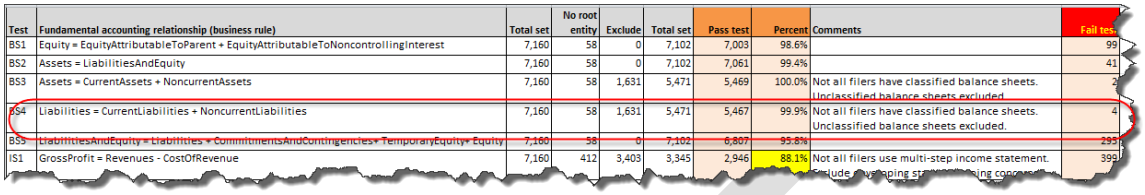
Disclosure of "Other Liabilities" using XBRL Cloud Viewer:



Total Liabilities, Noncurrent:



Fundamental accounting concept validation shows that 99.9% of SEC XBRL filers use the concept "us-gaap:LiabilitiesNoncurrent" to represent "Total noncurrent liabilities", not a detailed component within total noncurrent liabilities (as Procter & Gamble did):



Test	Fundamental accounting relationship (business rule)	Total set	No root entity	Exclude	Total set	Pass test	Percent	Comments	Fail test
BS1	Equity = EquityAttributableToParent + EquityAttributableToNoncontrollingInterest	7,160	58	0	7,102	7,003	98.6%		99
BS2	Assets = LiabilitiesAndEquity	7,160	58	0	7,102	7,061	99.4%		41
BS3	Assets = CurrentAssets + NoncurrentAssets	7,160	58	1,631	5,471	5,469	100.0%	Not all filers have classified balance sheets. Unclassified balance sheets excluded.	2
BS4	Liabilities = CurrentLiabilities + NoncurrentLiabilities	7,160	58	1,631	5,471	5,467	99.9%	Not all filers have classified balance sheets. Unclassified balance sheets excluded.	4
BS5	LiabilitiesAndEquity = Liabilities + CommitmentsAndContingencies + TemporaryEquity + Equity	7,160	58	0	7,102	6,807	95.8%		295
IS1	GrossProfit = Revenues - CostOfRevenue	7,160	412	3,403	3,345	2,946	88.1%	Not all filers use multi-step income statement. Exclude overlapping statements/missing concepts	399

2.22. Recognize that concepts reported within a financial report can be grouped into useful sets or classes.

SFAC 6 breaks a financial statement into groups of 10 elements: assets, liabilities, equity, investments by owners, distributions to owners, comprehensive income, revenues, expenses, gains, losses. These elements are 'the building blocks' with which financial statements are constructed - the classes of items that financial statements comprise. (Elements of Financial Statements. Statement of Financial Accounting Concepts No. 6 (Stamford, Conn.: FASB, 1985, par. 5.)

A classification scheme is an arrangement of types or sets of things into useful groups[24]. SFAC 6 elements are an example of such groups. 'Assets' is one group. 'Revenues' is another group. Something cannot be both an asset and revenue. While these 10 elements defined by the FASB are not the appropriate set of elements for defining an entire digital financial report, they do serve as a very useful starting point. Consider the fundamental accounting concepts as a useful expansion of the 10 elements defined by the FASB. So, rather than just *assets*, we now have *current assets* and *noncurrent assets*. The point is, I am not trying to articulate the list of classes; I am simply pointing out the notion of class by providing a list of things that certainly appear to be useful classes.

In observing the concepts you start to see some important differences between the sets of concepts[25]. The sets seem to have four important properties and different sets have different properties:

- Concept is required to be reported
- Concept may redefine or replace
- New concept may be created
- New subclasses may be created for concept

For example, consider the concept *Operating Income (Loss)*. Is that concept required to be reported? NO, reporting operating income (loss) is not required; proof of that is that many filers do NOT report operating income (loss). May a filer redefine or replace the concept operating income (loss)? NO; observing public company financial reports shows this to be true. May a filer create a new concept to

[24] For more information see, http://www.xbrlsite.com/2014/Prototype/Classes/
[25] For more information see, http://xbrl.squarespace.com/journal/2014/12/31/understanding-the-benefits-of-classification.html

replace the existing concept? NO; why would they do that? Can a filer add a subclass? NO; there is no real subclass of that concept.

Financial statement location	Concept	Required to report	May redefine or replace	May create new	May add new subclass
Balance sheet	Assets	YES	NO	NO	YES
Balance sheet	Commitments And Contingencies	NO	NO	NO	NO
Balance sheet	Current Assets	YES	NO	NO	YES
Balance sheet	Current Liabilities	YES	NO	NO	YES
Balance sheet	Equity	YES	NO	NO	NO
Balance sheet	Equity Attributable To Noncontrolling Interest	NO	NO	NO	YES
Balance sheet	Equity Attributable To Parent	NO	NO	NO	YES
Balance sheet	Liabilities	NO	NO	NO	NO
Balance sheet	Liabilities And Equity	YES	NO	NO	NO
Balance sheet	Noncurrent Assets	NO	NO	NO	YES
Balance sheet	Noncurrent Liabilities	NO	NO	NO	YES
Balance sheet	Redeemable Noncontrolling Interest	NO	NO	NO	NO
Balance sheet	Temporary Equity	NO	NO	NO	NO
Cash flow statement	Exchange Gains (Losses)	NO	NO	NO	YES
Cash flow statement	Net Cash Flow	YES	NO	NO	NO
Cash flow statement	Net Cash Flow From Financing Activities	YES	NO	NO	NO
Cash flow statement	Net Cash Flow From Financing Activities, Continuing	NO	NO	NO	YES
Cash flow statement	Net Cash Flow From Financing Activities, Discontinued	NO	NO	NO	YES
Cash flow statement	Net Cash Flow From Investing Activities	YES	NO	NO	NO
Cash flow statement	Net Cash Flow From Investing Activities, Continuing	NO	NO	NO	YES
Cash flow statement	Net Cash Flow From Investing Activities, Discontinued	NO	NO	NO	YES
Cash flow statement	Net Cash Flow From Operating Activities	YES	NO	NO	NO
Cash flow statement	Net Cash Flow From Operating Activities, Continuing	NO	NO	NO	YES
Cash flow statement	Net Cash Flow From Operating Activities, Discontinued	NO	NO	NO	YES
Cash flow statement	Net Cash Flow, Continuing	NO	NO	NO	NO
Cash flow statement	Net Cash Flow, Discontinued	NO	NO	NO	NO
Comprehensive income	Comprehensive Income (Loss)	NO	NO	NO	NO
Comprehensive income	Comprehensive Income (Loss) Attributable To Noncontrolling Interest	NO	NO	NO	NO
Comprehensive income	Comprehensive Income (Loss) Attributable to Parent	NO	NO	NO	NO
Comprehensive income	Other Comprehensive Income (Loss)	NO	NO	NO	YES
Income statement	Benefits Costs and Expenses	NO	NO	NO	YES
Income statement	Cost Of Revenue	NO	NO	NO	YES
Income statement	Costs And Expenses	NO	NO	NO	YES
Income statement	Extraordinary Items Of Income (Expense), Net Of Tax	NO	NO	NO	YES
Income statement	Gain (Loss) On Sale of Properties, Net of Tax	NO	NO	NO	YES
Income statement	Gross Profit	NO	NO	NO	NO
Income statement	Income (Loss) Before Equity Method Investments	NO	NO	NO	NO
Income statement	Income (Loss) From Continuing Operations After Tax	YES	NO	NO	NO
Income statement	Income (Loss) From Continuing Operations Before Tax	YES	NO	NO	NO
Income statement	Income (Loss) From Discontinued Operations, Net Of Tax	NO	NO	NO	NO
Income statement	Income (Loss) From Equity Method Investments	NO	NO	NO	NO
Income statement	Income Tax Expense (Benefit)	YES	NO	NO	YES
Income statement	Interest And Debt Expense	YES	NO	NO	YES
Income statement	Interest And Dividend Income, Operating	NO	NO	NO	YES

Financial statement location	Concept	Required to report	May redefine or replace	May create new	May add new subclass
Income statement	Interest Expense, Operating	NO	NO	NO	YES
Income statement	Interest Income (Expense) After Provision For Losses	NO	NO	NO	NO
Income statement	Interest Income (Expense) Operating, Net	NO	NO	NO	NO
Income statement	Net Income (Loss)	YES	NO	NO	NO
Income statement	Net Income (Loss) Attributable To Noncontrolling Interest	NO	NO	NO	NO
Income statement	Net Income (Loss) Attributable To Parent	NO	NO	NO	NO
Income statement	Net Income (Loss) Available To Common Stockholders, Basic	NO	NO	NO	NO
Income statement	Noninterest Expense	NO	NO	NO	YES
Income statement	Noninterest Income	NO	NO	NO	YES
Income statement	Nonoperating Income (Expense)	NO	NO	NO	YES
Income statement	Operating Expenses	YES	NO	NO	YES
Income statement	Operating Income (Loss)	NO	NO	NO	NO
Income statement	Other Operating Income (Expenses)	NO	NO	NO	YES
Income statement	Preferred Stock Dividends And Other Adjustments	NO	NO	NO	YES
Income statement	Provision For Loan, Lease, And Other Losses	NO	NO	NO	NO
Income statement	Revenues	YES	NO	NO	YES
Income statement	Revenues, Excluding Interest and Dividends	NO	NO	NO	YES
Income statement	Revenues, Net of Interest Expense	NO	NO	NO	YES

In addition, concepts and classes of concepts are related to other concepts or classes of concepts in specific, identifiable ways. This is not a new idea. This is basic set theory. Further, these ideas are used by other tools used to express relations between things. The following is a summary of these ways:

- **Element-class**: Equivalent to owl:Class, rdfs:Class and rdfs:type. The element A is a defined to be class B. (Example, the taxonomy element us-gaap:Assets (which is an individual) is defined as being the class fro:Assets)
- **Class-subClassOf**: Equivalent to rdfs:subClassOf. Class A is a specializetion of Class P. Ability to organize classes into a hierarchy of general-special terms. Similar to SKOS notion of broader terms versus narrower terms.
- **Class-equivalentClass**: Equivalent to owl:equivalentClass. Class A and class B have the exact same members. (Example, class LiabitiesAndPartnerCapital and the class LiabilitiesAndStockHolderEquity are both equivalent to LiabilitiesAndEquity.)
- **Class-sameAs**: Equivalent to owl:sameAs. Class A and class B are the exact same real world thing. (Example, the class Equity and the class NetAssets are exactly the same thing.)
- **Class-differentFrom**: Equivalent to owl:differentFrom. Class A and class B are the NOT the same real world thing. (Example, the class Assets and the class NetAssets are NOT the same thing.)
- **Class-disjointWith**: Equivalent to owl:disjointWith. Things belonging to one class A cannot also belong to some other class B. (Example, a member of the Person class set of things can never be a member of the Country class set of things.)
- **Class-complementOf**: Equivalent to owl:complementOf. Things that are members of one class A are all the things that do not belong to the other class B (Example, a member of the class of LivingThings set of things is the entire set of things that do not belong to the DeadThings set of things.)
- **Class-inverseOf**: Equivalent to owl:inverseOf. A relationship of type X between A and B implies a relationship of type Y between B and A. (Example,

IF starsIn inverseOf hasStar; AND IF MenInBlack hasStar WillSmith; THEN WillSmith starsIn MenInBlack)

- **Class-unionOf**: Equivalent to owl:unionOf. The members of set C include all the members of set A and all the members of set B.
- **Class-intersectionOf**: Equivalent to owl:intersectionOf. The members of set C include all the members of set A that are also members of set B.
- **Whole-hasPart**: Neither OWL nor RDFS has equivalent. The whole A has part B. (Example, the whole BalanceSheet has part Assets.)
- **IsPartOf-whole**: Neither OWL nor RDFS has equivalent. The part A is part of the whole B. (Example, the part Assets is part of the whole BalanceSheet.)

This is both an extremely powerful tool and extremely advanced topic of discussion. What professional accountants need to understand is the notion of classes and relations between classes. Other professionals such as those that develop models or ontologies can help professional accountants express this information in machine readable form. Why? Because the more a machine can understand, the more a machine can do.

2.23. Avoid unknowingly changing information representation approach midstream.

Avoid changing from a [Line Items]-based representation approach to a [Member]/[Axis]-based representation approach within a report component. Consistently apply one approach for the entire report component.

For example, a significant number of XBRL-based financial filings represent every balance sheet items using Concepts within a set of [Line Items]. And then the representation approach is changed in order to represent common stock. This change causes an inability to express roll up computations consistently with all other roll up business rules and indicates a flawed representation approach.

This screen shot below shows changing the representation approach used on the balance sheet where Concepts are used to represent balance sheet items and then the creator switches to using [Member]s to express common stock information. This results in a representation which is unnecessarily harder to use, inferior to an approach where items were used consistently to represent all information, and XBRL calculation errors.

Balance Sheet [Line Items]	Period [Axis]					
	2010-12-31			2009-12-31		
	Class of Stock [Axis]			Class of Stock [Axis]		
	Class A Common Stock [Member]	Class B Common Stock [Member]	Class of Stock [Domain]	Class A Common Stock [Member]	Class B Common Stock [Member]	Class of Stock [Domain]
ASSETS [Roll Up]						
CURRENT ASSETS [Roll Up]						
Cash and cash equivalents			11,000,000			10,000,000
Restricted cash			1,000,000			1,000,000
Short term investments			1,000,000			2,000,000
Accounts receivable, net of allowance for doubtful accounts of $1,000 and $1,000			29,000,000			29,000,000
Inventories			4,000,000			4,000,000
Prepaid expenses			8,000,000			8,000,000
Other current assets			2,000,000			2,000,000
Total current assets			56,000,000			56,000,000
NONCURRENT ASSETS [Roll Up]						
Property, plant and equipment, net			9,000,000			9,000,000
Other noncurrent assets			82,000,000 [1]			82,000,000
Total noncurrent assets			91,000,000			91,000,000
Total assets			147,000,000			147,000,000
LIABILITIES AND EQUITY [Roll Up]						
LIABILITIES [Roll Up]						
CURRENT LIABILITIES [Roll Up]						
Accounts payable and accrued expenses			7,000,000			7,000,000
Current potion of long-term debt			22,000,000			22,000,000
Other current liabilities			26,000,000			26,000,000
Total current liabilities			55,000,000			55,000,000
NONCURRENT LIABILITIES [Roll Up]						
Accounts payable and accrued expenses			1,000,000			1,000,000
Long-term debt			19,000,000			19,000,000
Other noncurrent liabilities			32,000,000 [1]			33,000,000
Total noncurrent liabilities			52,000,000			53,000,000
Total liabilities			107,000,000			108,000,000
Commitments and contingencies						
STOCKHOLDERS' EQUITY [Roll Up]						
Preferred stock, Class A, $1 par, 10,000 shares authorized, issued and outstanding; redemption abount $5,000, liquidation preference $10,000, conversion basis Tincidunt cursus est			10,000,000			10,000,000
Common stock, Class A and Class B, $1 par, 110,000 shares authorized (Class A 60,000, Class B 50,000), 90,000 shares issued and outstanding (Class A 50,000, Class B 40,000)	10,000,000	10,000,000		10,000,000	10,000,000	
Additional paid in capital			1,000,000			1,000,000
Treasury stock, share value $1, 10,000 shares, restrictions are Cursus est ullamcorper vel sollicitudin lacus			2,000,000			2,000,000
Retained earnings			6,000,000			6,000,000
Accumulated other comprehensive income, net of tax			5,000,000			4,000,000
Stockholders' equity			40,000,000			39,000,000
Total liabilities and stockholders' equity			147,000,000			147,000,000

2.24. Avoid inconsistencies in network identification.

When a report component is represented, the XBRL presentation relations, XBRL calculation relations, and XBRL definition relations related to that report component should have the same network naming (i.e. identifier, number, sort category, and title). There is no reason to name report component pieces with differently/inconsistently (i.e. using different networks).

Saying this another way; if you use the network identifier *http://www.myCompany.com/role/BalanceSheet* on the presentation relations, *http://www.myCompany.com/role/BalanceSheet2* on the calculation relations, and *http://www.myCompany.com/role/BalanceSheet3* on the definition relations; software will not understand that those pieces go together and work together because it has no way of understanding that they go together. Whereas if the presentation relations, calculation relations, and definition relations all use the same network identifier *http://www.myCompany.com/role/BalanceSheet* software will understand that the pieces go together.

Bottom line: use the same network identifier and network name for all relations expressed and business rules expressed for a report component.

2.25. Recognize that characteristics apply to all reported facts within a report component.

Recognize that a characteristic expressed via an [Axis] within a report component applies to every concept within that report component. And so if a "Class of Stock [Axis]" exists on a balance sheet, you are saying that "Cash and Cash Equivalents", "Inventories", and all the other balance sheet items have a characteristic related to a class of stock.

Avoid doing this:
http://www.sec.gov/Archives/edgar/data/1487685/000138713112000988/0001387131-12-000988-index.htm

	Period [Axis]												
	2011-12-31							2010-12-31					
	Class of Stock [Axis]							Class of Stock [Axis]					
Statement [Line Items]	Series A-1 Preferred Stock	Series A-2 Preferred Stock	Series A-1 Preferred Warrant	Series A-2 Preferred Warrant	Series A-1 Common Stock	Series A-2 Common Stock	Class of Stock [Domain]	Series A-1 Preferred Stock	Series A-2 Preferred Stock	Series A-1 Preferred Warrant	Series A-2 Preferred Warrant	Series A-1 Common Stock	Series A-2 Common Stock	Class of Stock [Domain]
Allowance for doubtful accounts - accounts receivable gaming							282,000							1,931,000
Allowance for doubtful accounts - accounts receivable other							101,000							151,000
Accumulated amortizations - financing fees							5,086,000							1,680,000
Accumulated amortizations - rated player relationships							20,700,000							6,900,000
Preferred stock par value	0.01	0.01						0.01	0.01					
Preferred stock shares authorized	1,688,268	645,065						1,688,268	645,065					
Preferred stock shares issued	1,463,535	162,255						1,463,535	162,255					
Preferred stock shares outstanding	1,463,535	162,255						1,463,535	162,255					
Preferred warrants par value			0.01	0.01						0.01	0.01			
Preferred warrants shares issued			202,511	460,587						202,511	460,587			
Preferred warrants shares outstanding			202,511	460,587						202,511	460,587			
Common stock par value					0.01	0.01						0.01	0.01	
Common stock shares authorized					4,354,935	645,065						4,354,935	645,065	
Common stock shares issued					142,423	xsi:nil						140,291	xsi:nil	
Common stock shares outstanding					142,423	xsi:nil						140,291	xsi:nil	

There are two things inappropriate about the above example. First, three discrete pieces are all run together which makes the information harder to read. Second, information about the allowance for doubtful accounts has a "Class of Stock [Axis]" and is associated with the "Class of Stock [Domain]" which makes no sense. A good clue that this representation is a mistake is all the empty cells that you see. Notice the four distinct groups of information for each period. Those groups are things which do go together.

Better practice is this: http://goo.gl/4Q0cQh

Balance Sheet Parenthetical [Line Items]	Period [Axis]	
	2010-12-31	2009-12-31
Balance Sheet Parenthetical [Hierarchy]		
Accounts receivable, allowance	7,000,000	6,000,000

Preferred Stock Information, by Class [Line Items]	Period [Axis]					
	2010-12-31			2009-12-31		
	Class of Stock [Axis]			Class of Stock [Axis]		
	Class A Preferred Stock [Member]	Class B Preferred Stock [Member]	Class of Stock [Domain]	Class A Preferred Stock [Member]	Class B Preferred Stock [Member]	Class of Stock [Domain]
Class of Preferred Stock [Hierarchy]						
Preferred stock, par value per share	1	1		1	1	
Preferred stock, shares authorized	20,000	20,000		20,000	20,000	
Preferred stock, shares issued	20,000	20,000		20,000	20,000	
Preferred stock, shares outstanding	20,000	20,000		20,000	20,000	
Preferred stock, value outstanding	10,000,000	10,000,000	20,000,000	10,000,000	10,000,000	20,000,000

Common Stock Information, by Class [Line Items]	Period [Axis]					
	2010-12-31			2009-12-31		
	Class of Stock [Axis]			Class of Stock [Axis]		
	Class A Common Stock [Member]	Class B Common Stock [Member]	Class of Stock [Domain]	Class A Common Stock [Member]	Class B Common Stock [Member]	Class of Stock [Domain]
Class of Common Stock [Hierarchy]						
Common stock, par value per share	1	1		1	1	
Common stock, shares authorized	60,000	50,000		60,000	50,000	
Common stock, shares issued	50,000	40,000		50,000	40,000	
Common stock, shares outstanding	50,000	40,000		50,000	40,000	
Common stock, value outstanding	10,000,000	10,000,000	20,000,000	10,000,000	10,000,000	20,000,000

Notice how if the accounts receivables allowance, the preferred stock information, and the common stock information are separated it makes all the information easier to read each of those representations. There are not a lot of empty cells.

2.26. Recognize that rendering engines render presentation differently but the meaning is the same across all rendering engines.

Rendering engines render information from a digital financial report differently, however the meaning of the information is the same across all rendering engines. Why? The meaning of the information is specified within the XBRL technical specification and is not open to interpretation to the extent that that meaning is specified.

Why should you care about this? Well, SEC filers should be less concerned about how their information is presented within the SEC interactive data viewer because that is not how most people will be using that information. If investors and analyst want to read the information they will use the HTML version of the report. Information will most likely be used in iPhone applications, iPad applications, analysis tools, Excel or other digital representation. That information will generally come from web service APIs. Information will then be rendered by individual applications in many, many different ways.

This is why the representation of the information is more critical to watch over than the presentation of the information.

Also, the SEC interactive data viewer is not a very good rendering engine. It does not make a lot of information available. For example, you cannot see roll up computations.

Consider the rendering below which shows calculations by cleverly putting a green check in the lower right hand corner of each roll up to show if the roll up is valid or invalid. (This rendering is provided by SECXBRL.info.)

Component: (Network and Table)	
Network	1001000 - Statement - CONDENSED CONSOLIDATED STATEMENTS OF INCOME (http://www.thecocacolacompany.com/role/CondensedConsolidatedStatementsOfIncome)
Table	Statement [Table]
Reporting Entity	http://www.sec.gov/CIK 0000021344
Statement, Scenario [Axis]	Scenario, Unspecified [Domain]

Statement	Period [Axis]			
	2014-06-28/2014-09-26	2014-01-01/2014-09-26	2013-06-29/2013-09-27	2013-01-01/2013-09-27
NET OPERATING REVENUES	11,976,000,000	35,126,000,000	12,030,000,000	35,814,000,000
Cost of goods sold	4,630,000,000	13,532,000,000	4,793,000,000	14,106,000,000
GROSS PROFIT	7,346,000,000	21,594,000,000	7,237,000,000	21,708,000,000
Selling, general and administrative expenses	4,507,000,000	12,880,000,000	4,424,000,000	12,991,000,000
Other operating charges	128,000,000	457,000,000	341,000,000	594,000,000
OPERATING INCOME	2,711,000,000	8,257,000,000	2,472,000,000	8,123,000,000
Interest income	169,000,000	436,000,000	136,000,000	381,000,000
Interest expense	113,000,000	344,000,000	90,000,000	314,000,000
Equity income (loss) - net	205,000,000	530,000,000	204,000,000	537,000,000
Other income (loss) - net	-312,000,000	-630,000,000	658,000,000	522,000,000
INCOME BEFORE INCOME TAXES	2,660,000,000	8,249,000,000	3,380,000,000	9,249,000,000
Income taxes	538,000,000	1,896,000,000	925,000,000	2,331,000,000
CONSOLIDATED NET INCOME	2,122,000,000	6,353,000,000	2,455,000,000	6,918,000,000
Less: Net income attributable to noncontrolling interests	8,000,000	25,000,000	8,000,000	44,000,000
NET INCOME ATTRIBUTABLE TO SHAREOWNERS OF THE COCA-COLA COMPANY	2,114,000,000	6,328,000,000	2,447,000,000	6,874,000,000
BASIC NET INCOME PER SHARE (in dollars per share)	0.48	1.44	0.55	1.55
DILUTED NET INCOME PER SHARE (in dollars per share)	0.48	1.42	0.54	1.52
DIVIDENDS PER SHARE (in dollars per share)	0.305	0.915	0.280	0.840
AVERAGE SHARES OUTSTANDING (in shares)	4,383,000,000	4,392,000,000	4,426,000,000	4,442,000,000
Effect of dilutive securities (in shares)	62,000,000	62,000,000	72,000,000	76,000,000
AVERAGE SHARES OUTSTANDING ASSUMING DILUTION (in shares)	4,445,000,000	4,454,000,000	4,498,000,000	4,518,000,000

2.27. Recognize that the number of members in reported set does not change the characteristics of a reported fact.

When information is represented, the number of [Member]s of a characteristic does not change the representation approach. Whether that set of [Member]s has 5 members, or 3, or only 1; the representation approach does not change.

For example, characteristic information which describes classes of common stock does not change if there is one, two, three, or many other classes of stock. The number of [Member]s may change; but the characteristics of the class of stock information does not change.

Avoid doing this: http://goo.gl/T2bisK

Common Stock Information, by Class [Line Items]	Period [Axis]	
	2010-12-31	2009-12-31
Class of Common Stock [Hierarchy]		
Common stock, par value per share	1	1
Common stock, shares authorized	60,000	60,000
Common stock, shares issued	50,000	50,000
Common stock, shares outstanding	50,000	50,000
Common stock, value outstanding	10,000,000	10,000,000

Note that there is no "Class of Stock [Axis]" and therefore no "Class A Common Stock [Member]" to explicitly identify.

Better practice is this (even with only one member): http://goo.gl/qhRzF7

Common Stock Information, by Class [Line Items]	Period [Axis]			
	2010-12-31		2009-12-31	
	Class of Stock [Axis]		Class of Stock [Axis]	
	Class A Common Stock [Member]	Class of Stock [Domain]	Class A Common Stock [Member]	Class of Stock [Domain]
Class of Common Stock [Hierarchy]				
Common stock, par value per share	1		1	
Common stock, shares authorized	60,000		60,000	
Common stock, shares issued	50,000		50,000	
Common stock, shares outstanding	50,000		50,000	
Common stock, value outstanding	10,000,000	10,000,000	10,000,000	10,000,000

Notice how in the rendering above that (a) there is one class of stock, (b) that information is explicit and not implied, (c) there is a total for ALL classes of stock which so happens to be the same as the one class because there is only one class of stock.

Contrast the above to this (when you have two members this is the proper representation; why would you not provide the [Axis] if there is only one [Member]?

See: http://goo.gl/po3UtR

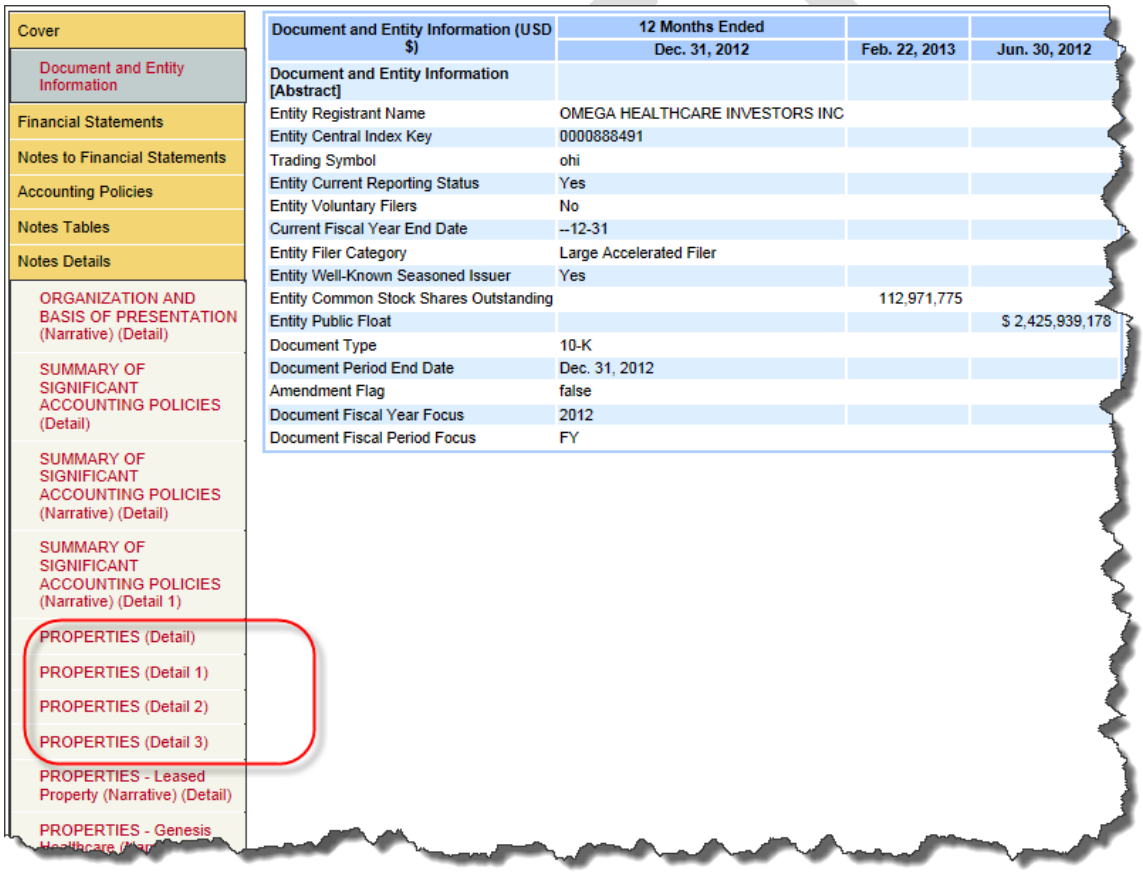
Common Stock Information, by Class [Line Items]	Period [Axis]					
	2010-12-31			2009-12-31		
	Class of Stock [Axis]			Class of Stock [Axis]		
	Class A Common Stock [Member]	Class B Common Stock [Member]	Class of Stock [Domain]	Class A Common Stock [Member]	Class B Common Stock [Member]	Class of Stock [Domain]
Class of Common Stock [Hierarchy]						
Common stock, par value per share	1	1		1	1	
Common stock, shares authorized	60,000	50,000		60,000	50,000	
Common stock, shares issued	50,000	40,000		50,000	40,000	
Common stock, shares outstanding	50,000	40,000		50,000	40,000	
Common stock, value outstanding	10,000,000	10,000,000	20,000,000	10,000,000	10,000,000	20,000,000

Now a second class of stock is added. Compare this with both the "Avoid doing this" and the "Better practice is this" examples and you begin to see why the better practice is better. Further, if you look at the XBRL Formulas which support the representation, the formula does not change at all between 1 class of stock, 2 classes, and would not change if there were 50 classes of stock. That is additional evidence that this is a better representation approach.

2.28. Label networks with meaningful information.

When describing what is contained in your digital financial report, avoid terms which don't allow a user of the information to understand what that section of the report contains. For example, avoid the use of "Detail", "Detail 1", "Detail 2", "Detail 3" as is shown below:

http://www.sec.gov/cgi-bin/viewer?action=view&cik=888491&accession_number=0001188112-13-000515&xbrl_type=v#



Rather, use descriptive titles which accurately describe information contained in that section and help the user of the information understand what the section contains.

2.29. Understand that every financial report has one report frame or report pallet.

A report frame[26] is simply the notion that every financial report has a high-level pattern. If you recognize what that pattern is, report frame patterns can be leveraged.

The financial reports of reporting entities can be grouped into high level patterns of variability[27]. Comprehensive testing of all XBRL-based financial filings at this very high level revealed a very limited amount of variability most of which occurs on the income statement. This variability is not random. The following is a summary of and a complete inventory of this variability at this high-level of a financial report:

- Entities report using some accounting industry or activity
  - Commercial and industrial (standard approach)
  - Interest based revenues
  - Insurance based revenues
  - Securities based revenues
  - REIT (real estate investment trust)
  - Utility
- Balance sheets can be
  - Classified and report current and noncurrent assets and liabilities
  - Unclassified
  - Report using liquidity based reporting
- Income statements can be
  - Multi-step and report gross profit
  - Single-step and do not report gross profit
- Income statements can
  - Report operating income (loss)
  - Do not report operating income (loss)
- Income (loss) from equity method investments can be reported on the income statement
  - As part of revenues
  - As part of nonoperating income (loss)
  - Before taxes as a separate line item
  - After taxes as a separate line item
  - Between income (loss) from continuing operations before and after taxes
- Cash flow statements can report net cash flow as
  - Including exchange gains (losses)
  - Not including exchange gains (losses)

This is a comprehensive and complete inventory of the high level variability in public company financial filings. This information is not a statistical analysis or speculation. This is observable empirical evidence provided by the XBRL-based public company financial filings submitted to the SEC.

A coding scheme was developed to articulate this information in both human readable and machine readable form. Below is a brief description of that coding

[26] See, http://www.xbrlsite.com/2014/Prototype/ReportFrames/ReportFrames.html
[27] For a detailed analysis of how report frames were derived, please see this resource, http://www.xbrlsite.com/2014/Library/SummaryInformationAboutConformanceWithFundamentalAccountingConceptRelations.pdf

scheme. Each code has six parts: "COMID-BSC-CF1-ISS-IEMIB-OILY". This explains each part and the codes used for each part and shows the number of entities which have that characteristic (note that the totals add up to 6,943 and not 6,947; this relates to an issue with CIK numbers):

- **Part 1: Industry codes: (Total 6,943)**
  - COMID=Commercial and Industrial (5,985)
  - INTBX=Interest based revenues (632)
  - INSBX=Insurance based revenues (50)
  - SECBX=Securities based revenues (93)
  - REITX=Real estate investment trust (158)
  - UTILX=Utility (25)
- **Part 2: Balance sheet form codes: (Total 6,943)**
  - BSC=Classified balance sheet (5,527)
  - BSU=Unclassified balance sheet (1,412)
  - BSL=Liquidity based balance sheet (4)
- **Part 3: Cash flow statement exchange gains codes: (Total 6,943)**
  - CF1=Exchange gains (losses) part of net cash flow or does not report line item (6,845)
  - CF2=Exchange gains (losses) part of cash roll forward (98)
- **Part 4: Income statement form codes: (Total 6,943)**
  - ISS=Single step income statement (4,255)
  - ISM=Multi step income statement (2,688)
- **Part 5: Income (loss) from equity method investments location codes: (Total 6,943)**
  - IEMIX=Income (loss) from equity method investments not reported (5,290)
  - IEMIB=Income (loss) from equity method investments reported BEFORE tax (1,402)
  - IEBIA=Income (loss) from equity method investments reported AFTER tax (113)
  - IEMIN=Income (loss) from equity method investments reported within nonoperating income (loss) (122)
  - IEMIR=Income (loss) from equity method investments reported within revenues (16)
  - IEMIT=Income (loss) from equity method investments reported between income (loss) from continuing operations before and after taxes (0, not working yet)
- **Part 6: Operating income (loss) codes: (Total 6,943)**
  - OILY=Operating income (loss) reported (5,120)
  - OILN=Operating income (loss) not reported (1,823)

While the complete set of codes and report frames cannot be known until the process of breaking public company filings into these sets and testing each filing and set as to their conformance to the fundamental accounting concepts and relations within the set and the success of this process is verified by 100% conformance by each reporting entity to 100% of the fundamental accounting concepts and relations between those concepts within each set; this is achievable.

In fact, testing shows that this objective has already been achieved for 98.7% of relations and 60.0% of all public company financial reports submitted to the SEC using the XBRL format. Further, which reporting entities do not conform to these concepts and relations and why they do not conform is easy to observe.

Another possibility which exists in order to manage this process is simply to remove sets of reporting entities from scope. For example, I have already removed entities which are funds and trusts from scope because I personally have no interest in such entities. Also, there are five entities which I classify as "hybrids" because they report using significantly more complex reporting schemes. Basically, certain report frames can be simply removed from scope.