Modelling Business Information Using XBRL

A resource for accountants, internal auditors, external auditors, financial analysts, and other business professionals when creating, reviewing, auditing, using, or extracting information from model-based digital business reports

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About the author:

Charles Hoffman, CPA, is credited as being the *Father of XBRL*. He started his public accounting career as an auditor with 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, and contributed to a number of XBRL related technical specification and best practices documents. Currently, Charlie works with Edgar Online, Inc. who among other things provides services to SEC XBRL filers.

Charlie was co-editor of the first US GAAP 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, and a number of other XBRL taxonomies.

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Introduction

This document describes how to leverage XBRL for a model-based approach to digital business reporting within a simple, succinct logical model which is easy for business users to understand. This logical model, sometimes referred to as a conceptual model or reference model, is based on over ten years of working with XBRL and is grounded in practical and robust use cases as empirical evidence that the model works appropriately to meet the needs of business users and which shows how the model achieves that goal.

In addition, this document helps you jumpstart your XBRL expertise by packing the result of thousands of hours of testing and experimentation of XBRL into a concise package of knowledge useful to technical experts implementing XBRL within software applications for intended for business users, technical and business teams tasked with defining an architecture to implement a system for digital business reporting using a modelling-based approach, or those trying to make use of XBRL based information.

The model articulated within this document is based on the model/architecture employed by the US GAAP Taxonomy and utilized for SEC XBRL financial reporting. This model calls for additional restrictions on that architecture in order to provide a blueprint for achieving consistency, robustness, reliability, repeatability, ease of use, error free digital business reports or otherwise improve quality. SEC XBRL financial statements created using this model can be created which are 100% compliant with SEC Edgar Filing Manual (EFM) rules and guidelines.

Finally, while this document tends to be focused on financial reporting due to both the robust nature of that use case and currently that use case is making the greatest use of XBRL for digital reporting of information; this model is also appropriate for the more general use case of model-based digital business reporting.

1.1. Understanding Model Based Digital Business Reporting

Model based reporting is an approach to business reporting which employs technology to both improve the functionality of the business report while at the same time reduce the costs of creating and maintaining business reports. Further, model based digital business reporting reduces the costs and increases the functionality of analysis of business information.

Understanding what a model based digital business report is can best be seen by looking at the evolution of a business report.

- **Paper and pencil**. When business information is communicated on paper, the nature of the paper medium means that the report can be used by one person at a time, it cannot be changed in any way as it exists in one form, and the nature of the information on the report determines who needs to create that report in order to maintain quality of the information communicated. Photostatic copies of paper can be made to improve information distribution.
- **Computer**. Computers and the electronic spreadsheet improve business reports created using paper and pencil in a number of ways. Information is unstructured, or more correctly structured only for presentation of information within an computer spreadsheet or word processing document. The formats are not standard and therefore cannot be

exchanged with others unless they have the same software application as the creator of the information.

- **Electronic**. Taking computer generated business reports a step further, the output formats can be standardized to say HTML or PDF and, leveraging the internet, distribute that information to anyone on the planet for pennies. While there is significant benefit to electronic distribution of business information, because the information is still unstructured, it cannot be reliably reused or analyzed without a human's involvement.
- **Digital**. By digital we mean that the unstructured information is structured, many times using a global standard format, in some format which gives the information meaning. Because the information has meaning associated with it three things are possible. First, when the information is created software applications can assist in the process because the computer can read the structure. Second, when the information is analyzed humans are not needed to move the information from its creation form into the form used for analysis, computers can use the structure to do that also. Third, rather than locking the created information into one form like paper, computer or electronic formats do, the information can be rendered in any number of forms. Further, within a software application using the information the information becomes more interactive, much like a pivot table of an electronic spreadsheet.

Model based digital business reporting is leveraging the structured and semantic nature of the form of the information in order to help business users create, reuse, and/or analyze business information. Order of magnitude improvements in quality and functionality are achieved and significant reductions in cost are experienced. These improvements in quality and functionality and reductions in cost are even greater if all those in the "chain" or creation, use, and reuse each have tools which leverages the digital characteristics described.

More details will be provided throughout this document and how this works will likewise be explained further.

1.2. Business System to Business System Information Exchange

When we think of business reporting on usually thinks of word processor documents or electronic spreadsheets exchanged between business users. But business reporting is actually much broader in scope than these work processor documents and electronic spreadsheets.

Many times the word processor documents or electronic spreadsheets end up being "cut and pasted" into other documents, spreadsheets, or systems. One case in point is how information from a financial statement is many times put into the system of a bank, regulator, or analyst to reuse that financial information in some manner many times over many years.

For contrast, look at the other end of the spectrum and what many people refer to as transactions. Be these accounting transactions or operating system transactions, transactions tend to be smaller in nature, while the information within the transaction may change, the form of the transaction generally does not change. While transactions are not considered model based digital business reports, the difference between these two offer an opportunity to understand the difference between the two.

Model based business reporting allows for formal agreement and therefore the opportunity to automate business information exchanges of many types. While this approach is not generally appropriate for high volume, small, unchanging transactions; it does offer an opportunity to automate a number of information exchanges used within business. The "sweet spot" of model based digital business reporting can be articulated as:

- **Larger transactions** which tend to change (i.e. such as a 50 or 100 page regulatory report with perhaps thousands of facts exchanged, as opposed to a small transaction with 10 data points)
- **Ad hoc exchanges** which seem to appear, all one needs to do is look at the electronic spreadsheets which you exchange today.
- **Business people changing the metadata**, no IT involvement required (i.e. XBRL has a good balance between power and ease of use)
- **Information which needs to be reconfigured** (i.e. not a form, although XBRL can be used to expressed what amounts to a form, it excels when that "form" needs some flexibility)
- **Zero tolerance for errors** in the information (i.e. everything must tick and tie and if things don't add up, bad things happen)

When trying to establish a formal system for exchanging business information of any type, one needs to understand that there are three aspects to business system interoperability (per this HL7 video, see http://www.hl7.org/documentcenter/public/training/IntroToHL7/player.html):

- **Technical interoperability**: Physically moving information from business system "A" to business system "B".
- **Semantic interoperability**: Insuring that business system "A" and business system "B" understand the information in the same way.
- **Workflow interoperability**: Enabling business processes at the organization housing business system "A" to effectively work with business processes at the organization housing business system "B".

There are many industries or domains attempting to solve the business system to business system interoperability issues. This is being done in many different ways with different levels of success.

The point here is that there are many business information exchange opportunities beyond the many word processing documents and spreadsheets which are exchanged today. While not every exchange is a candidate for formalization, many cases are candidates and significant increases in functionality and quality can occur, as well as reductions in cost. Undertaking such an exchange involves very specific aspects which must be dealt with. Doing so will result in an inexpensive, easy to use, robust, reliable, repeatable, scalable, secure, auditable, business information exchange.

1.3. Understanding the Characteristics of a Quality Digital Business Report

The best place to begin is with the end goal. The following is a summary of the characteristics or objectives/goals one might desire to achieve when creating a digital business report. Here we will use the example of a financial statement which most business users understand. What would you need from a digital financial report?

- **All formats convey the same message**: Financial reports are submitted to, say, the SEC in HTML and XBRL. Both formats have the same information and both formats should obviously communicate the same message. While the format may change, the meaning of the information must not change.
- **Integrity**: A financial statement rendered on paper foots, cross casts, and otherwise "ticks and ties". The same will be true of a digital financial statement. An interesting aspect of a model-based digital financial statement is that because of its structured nature, computer software can help the process of making sure everything "ticks and ties". This type of automated quality checking is impossible with an unstructured format such as PDF or HTML formats as computer software cannot read these formats and understand what it is looking at. Further, while each component of your financial report must "tick and tie" all the pieces need to properly fit together.
- **Rendering**: One benefit of a standard model-based digital financial report is that many different software applications can read that standard format. As such, you will want each presenting that information to users of the information in a consistent form. If certain applications unintentionally render information inconsistently, information may be obfuscated in some way and your information may be misinterpreted.
- **Justifiable extension concepts**: Extension concepts and other metadata added to a digital financial statement should be justifiable. You determine the uniqueness of your company, which needs to be balanced with using standard metadata appropriately.
- **Consistency with peer group**: Extension concepts and other metadata added to a digital financial statement should be as similar to your peer groups as you desire. Again, you determine the uniqueness of your company, which needs to be balanced with using standard metadata appropriately.
- **Consistency between periods**: Your digital financial statement should be consistent between periods.
- **Clear business meaning**: The business meaning of your digital financial statement should be clear to you and clear to users of your financial information, preferably the same as your meaning. Another way to say this is that it is far better to be explicit than to leave readers to imply meaning which they may imply incorrectly.
- **Usable for analysis**: The ultimate goal of communicating financial information is for banks, regulators, investors, or others to analyze that information. Your model-based digital financial report, as such, should be useful in this way.

Again, the example of the considerations which need to be met for a financial statement can help understand issues when creating any model-based digital business report. These goals are important to understand because the goals is what drives the principles and ultimately the practices employed to model your business information.

This document helps you meet that goal. The first step is to understand the important principles which drive the practices you will choose to employ to that end.

1.4. Mastering the XBRL Medium

Paper is a medium. XBRL is a medium. Each medium has different characteristics. When you create an XBRL-based financial report you basically take all the information you want to report and you put it in what amounts to little boxes many people call "tags", you structure the information for meaning. You have to either use a tag which exists or create your own tag, but you have to put everything in a tag. These tags provide business meaning. If not done correctly, the flow of the information can be lost.

When a human reads a paper financial report, there is a tremendous amount of implied message which gets communicated which straddles these tags so to speak. So, structuring information can have both positive and negative impacts. By explicitly structuring the content of a financial report, by having to put everything into a tag, and by articulating how those tags are related to each other, that financial statement presents become more crystallized. In other words, the financial concepts disclosed in the financial statement become more explicit and the relationships between the financial concepts are made explicit. This results in greater precision in the story that is being told by the financial statement. Explicit information is more ridged.

On the other hand by having to put all the information of a financial report into tags, if not done correctly the desired flow of the report can be lost. Further, humans are quite good at implying important meaning which can be gleaned from a financial report. No computer will ever be able to imply what humans can imply.

Implicit context changes as culture changes. We as CPAs need to both understand and become masters of the "dance of implicit and explicit" as David Weinberger calls it in his book *Everything is Miscellaneous*. Computers can do a lot for us in terms of rearranging things, providing flexibility, changing the way we relate to a financial statement. Computers also only deal with exactly what they have been told. Computers are not as adept at all at dealing with what has been left unsaid.

Making complex, meaningful financial information explicit can lead to oversimplification and result in incomplete, inappropriate, and misleading financial information. CPAs should be conscious of this possibility, rather than unconscious. The optimal equilibrium in the implicit/explicit trade-off needs to be fleshed out by the accounting profession.

1.5. Domain Specific Integrity

Again, using the financial reporting domain as an example, we want to point out the notion of domain specific integrity.

CPAs and other accountants have an innate understanding of financial reporting which disappears into the background and they take for granted. Of course the balance sheet balances, net income ties between the income statement, the statement of changes in equity, the cash flow statement, the balance sheet foots, the income statement foots, the cash flow statement reconciles and cash ties to the balance sheet, the details in the disclosures tie between the face of the financial statements and the disclosures, you reported the correct policies and you provided the appropriate disclosures in the notes. The knowledge of the domain of financial reporting which accountants have ensures that.

Two things change with the use of a structured, semantic format such as XBRL. First, the medium changes and that "financial integrity" must be expressed using the XBRL medium. Second, computers can read the XBRL and check much of this financial integrity using automated processes. That is right, they can help you

create your financial report correctly and check to be sure it is correct in many cases using automated processes.

The art and science of creating your model-based digital financial report or other business report is to get the medium employed to communicate the same information in the same way but using this new medium.

Many of those creating these model-based digital business reports such as financial reports believe use the same processes as is used to create a word processing document and therefore believe the XBRL will be as "sound" or have the financial integrity as the word processing document. This view is misguided and leads to incorrect, incomplete, or even misleading financial information. Ultimately, being able to use the financial information from the XBRL-based filing is the determining factor as to its correctness, completeness, consistency, and accuracy.

CPAs have to become masters of the art and science of the XBRL medium. We already master the paper medium, understanding how to make a financial statement foot, cross cast, and otherwise tick and tie. We take pride in that ability in fact. Performing these tasks can be a lot of this is really mindless work which a computer can perform. Besides, CPAs have better things to do than verify that the numbers add up.

To create an SEC XBRL filing and properly communicate financial information and the relations between the pieces of financial information, one needs to be a master of the XBRL medium. To audit an XBRL-based financial filing, one needs to likewise be a master of the medium. With the SEC legal liability on XBRL filings phasing out in the near future, the need for CPAs to master XBRL is critical.

All CPAs understand the inappropriateness of changing an accounting policy as a result of changing a company's independent auditor. Yet, there is an issue today relating to changes in financial statement tagging when an SEC filer changes the service provider which provides tagging services. Companies should not be able to, in essence, shop for the right set of XBRL tags.

The internal audit process is a fundamental part of creating an XBRL based financial statement. External auditing XBRL filings is still something which is up in the air, something that the accounting community is going to need to address. To do that, external auditors likewise need to understand how the XBRL system works. Regardless of whether an XBRL based financial is subject to external audit, internal process must be sure any financial report expressed using the XBRL medium has financial integrity.

The significance of this responsibility for appropriate financial integrity will increase over time as the limited liability period for XBRL expires, as more and more XBRL based filings are available and publically scrutinized, and as more and more filings are used by analysts.

1.6. Files and Additional Information

Throughout this document sample files, examples, and other information is referenced. Each section will refer you to this additional information which is useful. All of this information is also summarized in one location which you can find here:

http://xbrl.squarespace.com/digital-financial-reporting/

1.7. Acknowledgements

There has been a lot of learning about how to best make XBRL work since its inception in 1998. There is not necessarily general consensus as to how to best build an XBRL taxonomy or XBRL instances at this juncture in XBRL's evolution. However, there are many examples of XBRL. Some of these examples work well, others work with less effectiveness, all have side effects which one might not fully realize exist or fully grasp. All the issues relating to XBRL will expose themselves as XBRL evolves and is put into to use solving more and more business information exchange problems.

This document takes information which I have gleaned from the many XBRL taxonomies I have worked to create over the years, the knowledge which I have gained from many different sources, vets the information as best as I can and summarized it into what I consider best practices. XBRL taxonomy creation projects such as IFRS and US GAAP for financial reporting, COREP for solvency and liquidity reporting by financial institutions, FINREP for financial reporting for financial institutions, FDIC, CRAS, and other funny sounding names have all contributed to this process. During this 10 year journey of trying to tame the XBRL beast, solve the XBRL puzzle; I have learned a lot from a lot of different people each with different, unique skills which they brought to the table in different ways.

While I did physically create these XBRL taxonomies, XBRL instances, and the related documentation; I could have not done so without the gracious help of a number of people, directly and indirectly, over the years. I see myself as merely a custodian of this important information, nurturing it along for the benefit of all, condensing countless discussions into something hopefully useful for the common good.

I would like to specifically thank these contributors: Walter Hamscher, Geoff Shuetrim, David vun Kannon, Rene van Egmond, Thomas Egan, Josef Macdonald, Jim Richards, Roger Debreceny, Jeff Naumann, David Prather, Alan Teixeira, Hugh Wallis, Allyson Ugarte, Colm O hAonghusa, Giancarlo Pellizzari, Yossef Newman, Rob Blake, Mark Creemers, Marc van Hilvoorde, Herman Fischer, Ignacio Hernandez-Ros, Dean Ritz, Timothy Randle, Cliff Binstock, David Scott Stokes, Masatomo Goto, Paul Warren, Mark Goodhand, Campbell Pryde, Michele Romanelli, Maciej Piechocki, Victor Morilla.

There are others which I probably left off and for this I apologize. I acknowledge and appreciate the thinking others contributed to this endeavor.

2. Getting Started

The following is helpful background material which will help you during your process of getting up to speed with model-based digital business reporting including its core component XBRL. None of this material is required in order to fully use the material in this document. However, in order to understand the reasoning behind many decisions, to understand the XBRL technical syntax which lies behind this model, this information can be helpful.

The point of this document is to keep XBRL behind the scenes as much as possible. Most of this will be achieved by implementing software applications which absorbed the complexity of the XBRL technical syntax, allowing the business user to achieve what they need to achieve safely, robustly, reliably, and consistently; never having to understand the details of XBRL.

That said, many people like to "dink" around with their cars in their garage. If you don't know what you are doing, this can be dangerous. But, with good training, resources, or other help it can be useful to "get under the hood" so to speak. This is likewise true of XBRL.

2.1. XBRL, the Big Picture

A good source for background information about XBRL, what it is, what it does, what it means, problem it is trying to solve, how it is being used by others and other such background information read *XBRL for Dummies*. This is not a required step, but this step can be helpful if you want to get a complete picture of the landscape surrounding model-based digital financial reporting. The following URL points you to information on where to obtain this resource, details of what it contains, and other helpful information:

http://xbrl.squarespace.com/xbrl-for-dummies/

2.2. Hello World! Example

If you don't know what a hello world example is, you probably should not even bother with this. If you do know, here is a hello world example of XBRL:

http://xbrl.squarespace.com/journal/2008/12/18/hello-world-xbrl-example.html

Again, this level of understanding can be helpful, but it is optional.

2.3. An XBRL Technical Syntax Primer

Again, while not necessary, an understanding of the basics of the XBRL technical syntax can be helpful. Chapter 4 of *XBRL for Dummies* (see above) has a concise, but more importantly correct, primer of the XBRL technical syntax. Weighing in at a mere 28 pages, for those who desire or need this level of detail this is a great place to start. The XBRL technical specification is like reading the owner's manual. Even if you want to wade through that 158 page document, the primer will help you grasp the bigger picture framework into which to fit the details you will collect about XBRL.

2.4. Putting the Pieces Together

Trying to understand calculus without knowing algebra is pointless. Often when you need to learn something it is important to breakdown what you want to learn into steps. You learn what you need to in step one, then you go to step two. You

learn step two, then go to step three. And so on. Trying to skip steps causes frustration and other problems.

Learning about XBRL requires you to progress through a series of steps. There are no short cuts. Master of model based digital business reporting will take an investment in time and effort, particularly today when software is not at the maturity level that it needs to be. If you don't want to put in this time and effort, wait for software to mature.

If you do want to make this investment, this material is laid out the way it is precisely to help you through these necessary steps. They will not turn you into a master, but they will set you on the path to mastery. Mastery takes even more time and effort.

As such, progress through this material in the order provided, at least for the first time you work through it. After that, the material can be used as a reference.

3. Understanding Important Key Ideas, Concepts and Terminology

The following is a summary of foundational ideas, concepts, and terminology you will need to understand in order to undertake the important journey of understanding model-based digital business reporting. The reason these ideas, concepts, and terms are important is that other steps later build on this information. Not understanding this information will leave gaps in your understanding.

3.1. Interactive Data

The SEC coined the term "interactive data". Most business users have used or at least seen a Microsoft Excel pivot table. A pivot table is interactive or dynamic in that it can be pivoted to display information in different configurations.

Imagine a business report, such as a financial statement, which is interactive or has the dynamic characteristics of an Excel pivot table. That is what a model-based digital business report will be like. Digital business reports can be made interactive, or dynamic, because of the nature of XBRL. You can jump from one place in a report to another. You can reorganize the information to suit your preferences, desires, goals, and information needs.

How does this ability to reorganize a financial statement impact how a financial statement is, or should be, created and how does it impact how the reader of the financial statement interacts with the report? There is a connection between creation and use.

A model-based digital business report or financial filing is much more like an Excel pivot table than a piece of paper or an electronic piece of paper such as PDF or HTML. As such, accountants creating such financial statements may need to look at what they are creating differently, adjusting for the characteristics of this new medium. With the positive characteristics offered by XBRL, potentially negative characteristics also show their face and if not properly managed can have undesired affects.

> HINT: Take a look at the video on this web page titled "The Basics of Quantrix Modeler": http://goo.gl/qQ4Hx This video will help you understand the difference between logical models and semantic models.

3.2. Unstructured Versus Structured Information

Simply put, digital information comes in two forms:

- **Unstructured** which means the information contains no identifiable structure and therefore it is unrecognizable and therefore not usable by computer software. Further, no controlled navigation within the pieces of the unstructured information is possible due it its lack of structure.
- **Structured** which means the information has identifiable structure which can be recognized and utilized by computer software. Further, because of the structure navigation within the pieces of structured information is possible because of the structure.

Structuring information enables computer software applications to leverage that structure and work with the information.

Some people believe that there is another category "semi-structured" information. For more information this white paper is helpful:

http://goo.gl/TwUbs

Truth be known, everything that a computer works with has to be structured at some level and the level of structure determines what a computer can do with that digital information. The type of structure determines what you can, and cannot, do with that information.

3.3. Structured for Presentation Versus Structured for Meaning

There are basically two manners or methods or protocols to structuring information digitally:

- **Structured for presentation**. An example of that is a Word processor document which is structured using headings, sub headings, paragraphs, tables and lists. An Excel spreadsheet is also an example of structuring for presentation, it uses worksheets, columns, rows, and cells. Or an HTML document is structured for presentation.
- **Structured for meaning**. An example of that is database or a taxonomy or other type of classification system. A database structures the presentation into rows and columns, but the rows and columns are associated with defined names which are contained in the database schema which have specific meaning.

XBRL structures information for meaning. That structured meaning can be used to help a business user make use of that information.

3.4. Differentiating Syntax and Semantics

Often confused are the two parts of structured information. Both parts are important, but for different reasons:

- **Syntax** describes the form of the information and is generally not relevant to a business person. This is syntax: `<Name>John Doe</Name>`. Syntax is important to technical people.
- **Semantics** communicates the meaning of the information. For example, "the director's name is John Doe" communicates meaning as does "the balance sheet balances". Both are semantics of the information. Business meaning is key to the digital world.

Business meaning is a key component of model-based digital business reporting. Technical syntax is necessary but it can take many forms. A global standard technical syntax, like XBRL, which is supported by many, many software applications is preferred to a proprietary syntax which only certain specific software understands and therefore can make use of.

Software applications can be built to work at the technical syntax level or at the semantic level of some business domain, such as financial reporting. To use tools which work at the technical syntax level you need to understand the technical syntax used. To work at the semantic level of some business domain, you only need to understand that business domain.

A logical model, which will be discussed later, can bridge the gap between a business domain and using a technical syntax.

3.5. Metadata

How you divide up your information does matter. Providing the proper "handles" or ways of accessing the components within a set of information is important.

In the digital world, metadata is important. You probably don't understand what metadata is but metadata is going to change your life, it already has. Metadata is simply data about data, it is used when computers communicate with one another. Metadata is one of the things which makes XBRL work. You need to understand how to make use of this metadata to express and control financial information.

Many people like to have debates about what is data and what is metadata but the debate is pointless. Just think of metadata as data at another level.

Another way to think about metadata is this: Metadata is good; more metadata is better; standard metadata is even better! Basically, the more that a computer understands something the more that the computer can do for you. Metadata helps computers understand how you want to work with your data.

The bottom line is this. Metadata is data and metadata is important.

3.6. Notion of Logical Model

We have all worked with electronic spreadsheets. They are easy to use because the software interface which you work with exposes you to familiar terms similar to paper spreadsheets. Things like workbooks, spreadsheets, rows, columns, and cells are recognizable and organized into a logical model which we understand.

XBRL is a technical syntax. The XBRL technical syntax is implemented by the US GAAP taxonomy using a specific architecture or application profile. This application profile is laid out in the US GAAP Taxonomy Architecture. That architecture exposes a logical model. You may not be able to see that logical model because the US GAAP taxonomy actually hides the model by being inconsistent. But the logical model is there.

3.7. Notion of Semantic Model

While logical models have their benefits, they still leave something missing: business meaning. Semantics is meaning as we pointed out above. Working with digital business reports which relate do some specific business domain such as financial reporting and an SEC XBRL financial filings at the semantic level you deal with terms such as: balance sheet, income statement, assets, liabilities, equity, subsequent events, nonmonetary transactions, etc.

A semantic model provides an order of magnitude jump in usability over using a logical model. Eventually, this is how you will be working with XBRL; via a semantic model.

> HINT: Take a look at the video on this web page titled "The Basics of Quantrix Modeler": http://goo.gl/qQ4Hx This video will help you understand the difference between logical models and semantic models.

3.8. Business Information is Inherently Dimensional

Business information, and particularly financial information, is inherently multidimensional. To understand what dimensional means and to understand why this is important, consider the following brief explanation which we will expand on later:

- A **value** such as the numeric value for *pi* is a **scalar**. The value of *pi* which is 3.14 is the same, no matter where it is used. Scalars have no dimensions or other characteristics, they stand alone.

- A **list** can be thought of as having one dimension. For example, the name of a company and its state of incorporation can be thought of as a list.
- A **table** can be thought of as having two dimensions, one dimension represented by the columns of the table, the other by the rows of a table. Other terms used for table are matrix and array.
- A **cube** can be thought of as a three dimensional matrix/array. For example, think of the "x", the "y" and the "z" axis of a three dimensional chart you may have worked with.
- A **hypercube** is an "*n*-dimensional" matrix/array, meaning that it can have from one to any number of dimensions. Hypercubes can be hard to articulate in two dimensions, such as paper. But computers are good at working with hypercubes.

The fundamental building block of the multidimensional model is the hypercube. A hypercube is a collection of dimensions used to represent information. The members of one dimension of a hypercube are the primary items, or concepts, which are being reported.

Consider the number 1,000. What does that number mean? What if we told you that the number related to Cash and Cash Equivalents for the current fiscal period of December 31, 2010, reported by the consolidated entity which has the SEC CIK number 0123456789 whose value is $1,000,000 reported in thousands of US Dollars. Each of those descriptive characteristics of the number 1,000 is a different dimension of that number.

Creators of information and consumers that information might disagree on how to best present the information which must be expressed within a business report.

The multidimensional model is a logical model for organizing information. The multidimensional model is flexible in that it does not specify presentation information related to the information expressed by the model. Users of the model are free to present the information as they deem appropriate, leveraging the dimensional information or other helpful information. What the multidimensional model does provide is enough agreement to express information so that it can be understood by a computer software application, including applications which can render the financial information in a format appropriate for human consumption.

3.9. Role of Software

Complexity can never be removed from a process but it can be moved. Software can assume the complexity of things like the XBRL technical syntax by leveraging things like a logical model or a semantic model. Software can leverage ideas such as the multidimensional model in pursuit of that task.

Software can turn the complex physical implementation of technology into a significantly easier to use logical model and/or semantic model; hiding and taking care of the complexity of the technology for the user in the background. Most software today which tries to help business users make us of XBRL is still maturing and does not leverage a logical model or semantic model, therefore they have to work at the level of the XBRL technical syntax.

3.10. Semantic, Structured Authoring

The benefits of a model-based, digital, semantic, structured authoring approach over the unstructured approach used today to create business reports such as financial statements (i.e. packing information into Microsoft Word which

understands nothing about financial reporting) seem quite clear and obvious; if you understand the technologies employed to achieve the goal.

Even if you are not required to create your business reports or financial reports using this type of an approach by a regulator or someone else, a semantic, structure authoring is beneficial. Model-based digital business reporting is a semantic, structured authoring approach.

Structured authoring of documents has been around for quite a long time. Pharmaceutical companies and airplane manufactures have used the structured general mark up language (SGML) for quite some time. The appearance of XML based authoring tools made structured authoring even more used.

There are others taking a structured authoring approach to creating financial statements. SAP, Oracle, and IBM to name three. All of these companies are working to change the "last mile of finance" as are others. Many of these companies started down this path long before XBRL even existed.

There are lots of different terms for structured authoring: model based reporting, digital financial reporting, 21st Century financial reporting.

Semantic, structured authoring is defined:

> "to compose information content semantically structured according to some ontology"

The paper Semantic *Authoring and Learning Thereof* by Kôiti Hasida talks about semantic structured authoring in more detail. It points out how this approach can be more productive and improve quality.

Semantic structured authoring is a marriage between ideas of structured authoring and ideas of the semantic web. Add to this business intelligence, then you see business reports such as financial statements and financial reporting practiced in new ways.

4. Understanding the Multidimensional Model

The multidimensional model is a model used to represent information. Other popular models for representing information include the relational model and hierarchical model. There are other models. Each models has its strengths and weaknesses, it pros and cons.

Multidimensional views of information provide what many people refer to as the ability to "slice and dice" information. Another way of stating this is that the multidimensional model provides flexible access to information.

People often confuse the multidimensional model with OLAP (online analytical processing), BI (business intelligence) and other such implementations of the multidimensional model.

Transaction processing systems such as accounting systems tend to use the relational model or a relational database management system (RDBMS).

Data warehouses or sometimes called data marts is an approach to creating an enterprise wide data store. A data warehouse basically helps tie transaction processing systems together so the data can be access as if it were one set. Business intelligence systems are used to report information to those who use that information. But data warehouses and business intelligence software tends to be focused on the internal use of information within one organization. Much information which one might use can be external to an organization.

As we said, each of these models has its pros (strengths) and cons (weaknesses); each has different needs. Business information comes from these different systems and goes into these different systems.

Yet there is no one standard multidimensional model used by all systems which use that model. The relational model has SQL (structured query language) and ODBC (open database connectivity). Connecting systems which use the multidimensional model can be more challenging. A white paper which discusses these issues can be found here:

http://www.symcorp.com/downloads/ADAPT_white_paper.pdf

This section helps sheds light on why the multidimensional model is used, it separates the multidimensional model, OLAP, BI, and XBRL Dimensions

4.1. Strength of the Multidimensional Model

The greatest strength of the multidimensional model is the flexibility it provides to slice and dice and otherwise reformat information to fit the preference of the consumer of the information. Relational databases can be made to express information using a multidimensional type of an approach using fact tables, star schemas to mimic the multidimensional model, but a multidimensional database is optimized for the multidimensional model.

4.2. Strength of the OLAP

OLAP (On-Line Analytical Processing) is an approach to swiftly answer a query.

OLAP and the multidimensional model are two different things. OLAP uses the multidimensional model to achieve its goals. OLAP tends to focus on numbers only, is optimized to enable the aggregation of information. Also, OLAP sometimes even pre-aggregates numbers to make queries faster. Further, OLAP

is for providing information, it is not generally "read-write". OLAP tends to be less useful with reporting textual type information and in situations where you do not want aggregation.

OLAP tends to be internally focused within an entity and not that adept at working with information which is external to an entity.

You can think of OLAP as if it were a three dimensional spreadsheet (or more precisely an "*N*" dimensional spreadsheet meaning any number of dimensions). This is called an OLAP cube. An Excel pivot table is a very basic example of an OLAP cube.

For more information on OLAP see:

http://www.ischool.drexel.edu/faculty/song/courses/info607/tutorial_OLAP/index.htm

4.3. Business Intelligence Systems

Business intelligence (BI) is a type of decision support system which transforms and organized raw information and transforms that information so that it can be used to make business decisions. BI systems are organized to present information in such a way as to guide a business toward some desired goal.

BI systems tend to use OLAP and therefore likewise tend to use the multidimensional model. BI systems are implemented within software. The following link provides information about BI systems implemented by software vendors:

http://biscorecard.com/

BI systems have pros and cons:

- There is no one global standard BI system or one standard multidimensional model used by BI systems. As such, BI systems are not generally interoperable. They can be made to interoperate, but they are not inherently interoperable. BI systems tend to work well with the internal information of an enterprise, but less well with information external to an enterprise.
- BI systems generally use OLAP. And as such they have the strengths and limitations of OLAP. As such, BI systems tend to work best with numbers and tend to force you to aggregate numbers.
- BI systems tend to be read only, you can use information from a BI system but you cannot put information into a BI system. Generally, BI information is put into a transaction processing system which then goes into a data warehouse which the BI system then uses.
- BI systems focus on numbers and work with numbers extremely well; however they work less well with textual type information or narratives.
- BI systems don't tend to allow you to import schemas or other metadata which is used to work with the information, the tools tend to provide you mechanisms within the tools to create this metadata.

Two of these imitations are critically important when it comes to XBRL. The first is that BI applications tend to focus more on numbers, rather than text and numbers and therefore BI systems are limited in working with XBRL information which can contain both numbers and text. The second is that BI systems tend to focus on numbers and like to help you aggregate those numbers because that is what OLAP does and in XBRL reports you don't want aggregation many times.

For example, if you ever tried to use an Excel pivot table which is basically a simple BI-type tool, you can see how a pivot table cannot quite do what you want to do in terms of rendering business reporting information which has been expressed in XBRL.

A third important thing to realize is that BI system don't tend to provide easy ways to import metadata such as the information which is contained within an XBRL taxonomy which provides the schema for information contained within an XBRL instance.

BI systems are quite useful, but they need to go to the next level. Currently, BI systems seem to be focused on internal analytics within an organization or many times within a department of an organization which cannot work with the internal analytics of systems within the same organization. BI needs to be more externally oriented, brining in information from whatever source, from whatever entity, internal or external.

4.4. Model Based Reporting and the Multidimensional Model

Model-based reporting is catching on in the financial reporting space. Enterprise software vendors such as IBM (IBM Cognos Financial Statement Reporting (FSR) External Reporting), SAP (SAP BusinessObjects Disclosure Management), and Oracle (Oracle Hyperion Disclosure Management) have model-based reporting software applications which support the creation of financial statements. Financial reporting can be seen as leading the way in model-based reporting.

But many other software companies are jumping into the model-based business reporting arena.

Two companies which I will mention here are Quatrix and A3 Modeling because they have great videos which help understand what model-based business reporting looks like. Here are those videos:

Quantrix Modeler: http://www.quantrix.com/tour/Concepts2.htm

A3 Modeling: http://www.a3solutions.com/media/A3_SpreadsheetAutomation_preso.html

Although, many of these model-based business reporting solutions are tied too tightly to OLAP which means they are focused on numbers and not both numbers and textual information such as narratives found in financial reports.

4.5. Reconciling Multidimensional Terminology

The multidimensional model terminology associate with it. Unfortunately, there is not one standard, precise set of terms that everyone agrees on. But most models are fairly close. Symmetry Corp, a business intelligence consulting firm, has created a common model that it uses to reconcile all the different multidimensional model terminology used by the major software vendors they support. You can see this reconciliation here:

http://www.symcorp.com/downloads/ADAPT_white_paper.pdf

XBRL Dimensions terminology is yet another variation of multidimensional terminology. The US GAAP Taxonomy uses yet another set of terms in an attempt to make the multidimensional model easier for business users to make use of. The table below provides a reconciliation between this terminology:

Common BI or Multidimensional Model Term	XBRL Dimensions Term	US GAAP Term	Description
Scalar			Data that has no dimensions. For example, the value for pi (3.14) has no dimensions.

Common BI or Multidimensional Model Term	XBRL Dimensions Term	US GAAP Term	Description
Cube, data cube, hypercube, pivot table, array, matrix, info cube	Hypercube	[Table]	Connection between a set of dimensions.
Dimension, characteristic, measure, axis	Dimension	[Axis]	A characteristic of the information. For example, "Geographic Area" may be a characteristic of the information and therefore a dimension.
Domain	Domain	[Domain]	Set of members of a dimension.
Member	Member	[Member]	A possible values of a dimension. For example, "Asia", "Europe", "North America", "South America" might be members of the "Geographic Area" dimension.
Measure	Primary item	[Line Items], Concept	Generally, in XBRL terms, the XBRL taxonomy concept dimension of information. For example the taxonomy concept "Sales" may be a primary item. NOTE: In BI, concepts are simply another dimension.
	Network	[Network]	Hypercubes exist within XBRL networks. A network may have one or more hypercubes within it. Networks are a way of physically separating sets of relations.
Navigational attribute, Flow		Number and category of network	Order or sequence of hypercubes
Fact, key figure	Fact	Fact	A fact is reported piece of information which could be numeric, non-numeric (i.e. strings), or narrative (i.e. TextBlock).
Fact table			Set of facts associated with a hypercube
Slice			A portion of a hypercube, somewhat like a filter, which allows information with more than two dimensions to be presented on a two-dimensional surface.
Formatting information, display attributes		Presentation relations	Information related to formatting, presenting, and/or rendering information from a hypercube.

If you are confused as to what a term means, the table above can be helpful in figuring out the definition of the term. In this document we have standardized on the US GAAP Taxonomy terminology as the standard terminology which we will use.

5. Logical Model Report Elements

We have all worked with electronic spreadsheets. They are easy to use because the software interface which you work with exposes you to familiar terms similar to paper spreadsheets. Things like workbooks, spreadsheets, rows, columns, and cells are recognizable and organized into a logical model which we understand.

XBRL is a technical syntax. Working with XBRL at the technical syntax level can be challenging for business users, if not impossible for most users. Creating and using a logical model or sometimes called a conceptual model for digital business reports can make working with them as easy as working with an electronic spreadsheet.

The US GAAP Taxonomy Architecture created a logical model. That model is flexible as it allows for extension. An SEC XBRL financial filing can be summarized into a concise set of logical report elements. These logical report elements are related to each other. The US GAAP Taxonomy architecture and SEC XBRL financial filing logical model is explained here:

http://secxbrlglossary.wikispaces.com/

Rather than reinvent another logical model, we have chosen to follow the US GAAP Taxonomy and SEC XBRL financial filing logical model for a general digital financial reporting logical or conceptual model.

This section explains that logical model.

5.1. Differentiating XBRL Technical Syntax and Logical Model

In this section we will provide an overview of the key components of a digital financial report. We want to provide just the right amount of information to provide you with a sound grasp of the big picture, rather than overwhelm you with details at this juncture. Details are provided in subsequent sections.

This section outlines the *logical components* of a digital financial report. These components are likely familiar to you but you may not have associated formal names with these pieces in this manner before.

From a technical point of view, a digital financial report consists of two primary physical components using the XBRL technical syntax: an XBRL instance and an XBRL taxonomy.

An **XBRL instance** is a physical document just like your HTML document or Word document which contains the financial information you report. While the information is the same, the format of the information is different, XBRL. An XBRL instance contains things such as:

- The financial and nonfinancial **facts** which you report. An example of a fact is Cash and Cash Equivalents for the current fiscal period of December 31, 2010, reported by the consolidated entity which has the SEC CIK number 0123456789 whose value is $1,000,000 reported in thousands of US Dollars.
- The **values** of those financial and nonfinancial facts. The value $1,000,000 is an example of a value.
- **Characteristics** which describe those facts. The CIK number 0123456789, the consolidated entity, the period December 21, 2010 are examples of characteristics.

- **Other attributes** which help you understand values of facts which are numeric in nature. Stating that the value is in US Dollars and expressed in thousands are examples of other attributes.
- Any other **comments or footnotes** which help describe those facts. You may want to provide some kind of notation which appears as a footnote within your report.

Not that you would ever need to look at this XBRL instance, it is really meant for computers to understand and process for the user of the information; but if you are curious, this is what XBRL looks like this:

```
<us-gaap:CashAndCashEquivalentsAtCarryingValue contextRef="I-2010" unitRef="U-Monetary" decimals="-
  3">11000000</us-gaap:CashAndCashEquivalentsAtCarryingValue>
<us-gaap:RestrictedCashAndInvestmentsCurrent contextRef="I-2010" unitRef="U-Monetary" decimals="-3">1000000</us-
  gaap:RestrictedCashAndInvestmentsCurrent>
<us-gaap:ShortTermInvestments contextRef="I-2010" unitRef="U-Monetary" decimals="-3">1000000</us-
  gaap:ShortTermInvestments>
```

It may be odd to express all the details described above, but remember; computers are not very smart. Things that humans can generally figure out by reading a report have to be expressed explicitly so that a computer can understand what to do with them.

The second major piece of a digital financial report is the XBRL taxonomy. An **XBRL taxonomy** can be thought of as a dictionary. The taxonomy provides the definitions of the concepts used in your report, definitions of many of the characteristics which help explain your financial report, relations between the concepts and characteristics, and the business rules which exist between concepts. All this information is used by the XBRL instance.

Some of the concepts, characteristics, relations, and business rules are pre-defined for you by the FASB in the US GAAP Taxonomy. But each SEC filer can also create the concepts, characteristics, relations and business rules that uniquely define their organization.

Part of the art and science of using XBRL is to figure out when you use the predefined concepts and characteristics and when to define your own.

As pointed out previously, many times a logical or conceptual model is created to work with complex technical things. We have all worked with electronic spreadsheets. They are easy to use because the software interface which you work with exposes you to familiar terms similar to paper spreadsheets. Things like workbooks, spreadsheets, rows, columns, and cells are recognizable and organized into a logical model which we understand.

XBRL is a technical syntax. The XBRL technical syntax is implemented by the US GAAP taxonomy using a specific architecture or application profile. This application profile is laid out in the US GAAP Taxonomy Architecture. That architecture exposes a logical model.

An SEC XBRL financial filing can be summarized into a concise set of logical components, a logical model: networks, tables, axis, line items, facts, etc. These terms are easier to work with and understand than the XBRL technical syntax.

The US GAAP Taxonomy which is used for SEC XBRL financial filings is also used for this digital financial reporting model. Further, this same model can be applied to more general digital business reporting.

5.2. Report Elements

The pieces of a digital business report consist of report elements. Those report elements can be broken down into a small number of categories which are:

- Networks
- Tables
- Axis
- Domains
- Members
- Line Items
- Concepts
- Facts
- Footnotes

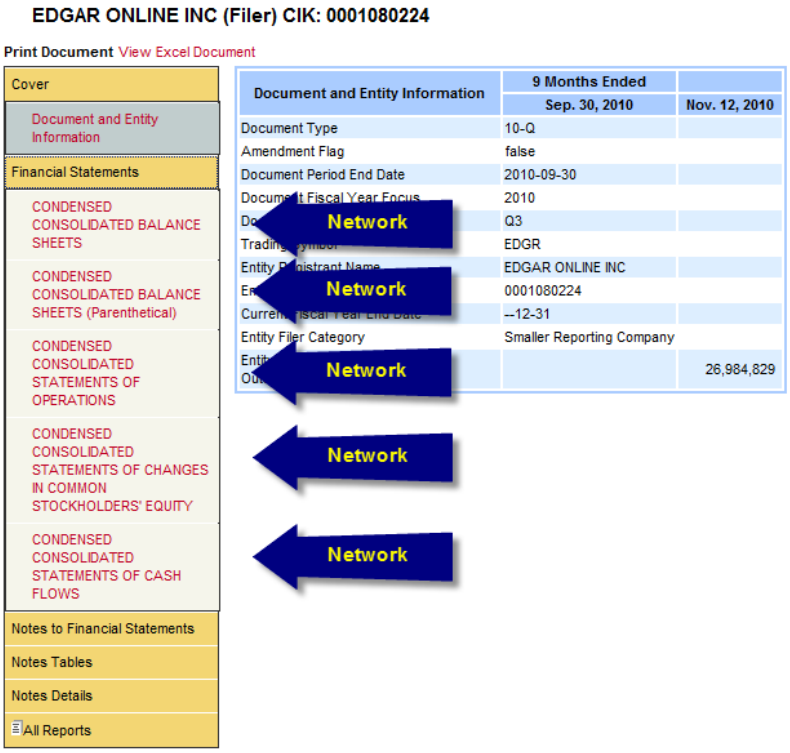
Information expressed by a digital business report are called **facts**. Facts are expressed within **tables** which connect a set of **axis** which express the characteristics of the facts and a set of **line items** which connect the facts to some business reporting **concept**. Tables can be organized within **networks**. The characteristics of the fact, expressed as an axis are organized into a **domain** of **members**. In addition, **footnotes** can be used to elaborate on facts.

For example, Net Income (Loss) [a concept] of $1000 [the value of a fact] for the period ended December 31, 2010 [a characteristic of the fact] for the consolidated entity [another characteristic of the fact] of the reporting entity with the CIK number 1080224 [yet another characteristic of the fact] may be a fact reported within an SEC XBRL filing.

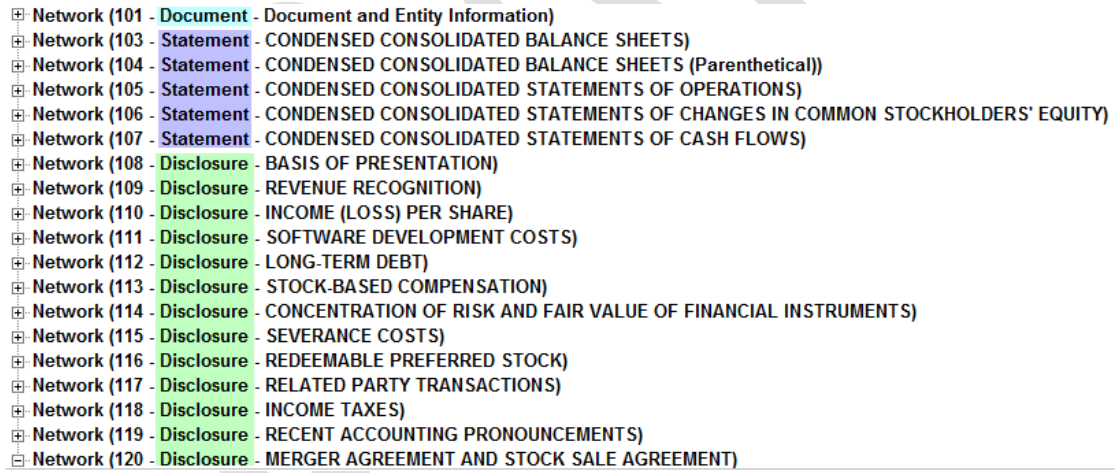
5.3. Network

A **network** is a one approach to break an SEC XBRL 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 you create have a direct impact on what is seen within the SEC XBRL Interactive Data Viewer and other SEC XBRL rendering software. Consider the following screen shot of the SEC Interactive Data Viewer:



And now consider this screen shot of the XBRL taxonomy which supports the XBRL instance being viewed within the SEC XBRL Interactive Data Viewer:



Creating a network causes a section to appear within the left had navigation pane of the SEC XBRL Interactive Data Viewer application. You can create these networks as you desire to organize how this information would appear within a software application.

These networks have a *number* and a *category*. The category determines which section the network appears in the SEC XBRL Interactive Data Viewer. The number determines the order within the section. The categories are: Document, Statement, and Disclosure.

The second reason you would create a network is because you have to. Suppose, for example, that you wanted to articulate the breakdown of trade receivables in multiple ways:

	2010	2009
TRADE AND OTHER RECEIVABLES		
Trade and Other Receivables, Net, by Component		
Trade Receivables, Net	8,790	6,431
Financing Lease Receivables, Net	2,498	1,263
Other Receivables, Net	1,305	1,096
Trade and Other Receivables, Net	12,593	8,790
Trade and Other Receivables, Net, by Net/Gross		
Trade and Other Receivables, Gross	18,280	13,472
Allowance for Doubtfull Accounts	-5,687	-4,682
Trade and Other Receivables, Net	12,593	8,790
Trade and Other Receivables, Net, by Current/Noncurrent		
Trade Receivables, Net, Current	6,340	5,701
Trade Receivables, Net, Noncurrent	6,253	3,089
Trade and Other Receivables, Net	12,593	8,790

A network separates things which would otherwise collide. To avoid these three breakdowns of the same concept "Trade and Other Receivables, Net" from colliding; a network can be created for each to separate them. As such, you may need to create networks sometimes when you would prefer not to.

> HINT: The term "network" may seem odd. But this is actually just like how different radio or television frequencies are separated, thus the term network.

5.3.1.Number

A network has a number. The number is used to order or provide a sequence for the networks.

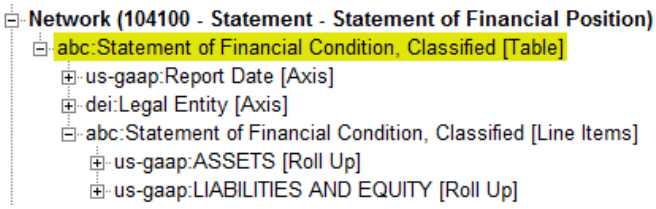
5.3.2.Category

A network has a category. The categories are: Document, Statement, and Disclosure. The category impacts which section of the SEC interactive viewer the network shows up.

5.4. 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.



Note the table above which has two **axis** "Report Date [Axis]" and "Legal Entity [Axis]" and one set of **line items** "Statement of Financial Condition, Classified [Line Items]".

> HINT: Defining unique, smaller, explicit tables is superior to using the implicit tables, repeating table names, and larger tables. Further, you get better control over the SEC Interactive Data Viewer and other rendering software with smaller explicit tables.

5.4.1.Explicit tables

You can use a table from the US GAAP taxonomy or you can define your own tables. For example, you might create the table "Debt Instruments [Table]" if you needed it but it did not exist within the US GAAP taxonomy.

5.4.2.Implicit tables

There is another way you can create a table which is to use what amounts to a default table. If you define concepts in your taxonomy and you do not explicitly put them into an existing US GAAP taxonomy table or a table which you define, you are putting that concept into an implicit table.

5.5. Axis

An **axis** is a means of providing information about the characteristics of the concepts for the line items within a table regardless of whether that table is explicitly or implicitly defined.

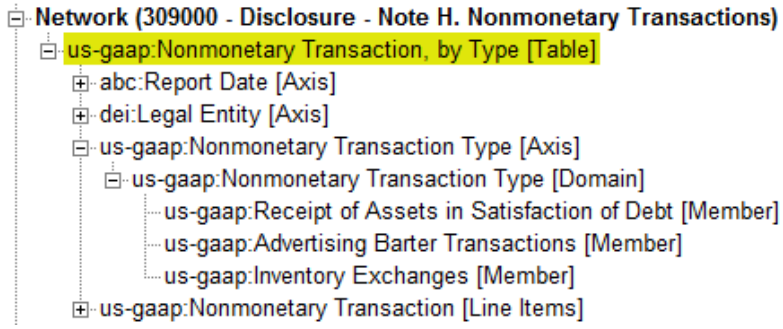
Explicitly defined [Table]s are the only tables to which you can add axes. All tables, be they explicitly defined or implicitly defined, have two axis which will always be there: entity and period.

- **Entity**: The entity, or "Reporting Entity" axis, always exists for an explicit or implicit table and the entity axis is always the SEC filer CIK number.
- **Period**: The period axis, or reporting period, always exists for an explicit or implicit table.

Using axis defined by the US GAAP taxonomy is preferred and would commonly be available; but if an axis which you need does not exist, you can create an axis to articulate the characteristics you need communicated. Other explicit axis which might be defined could include things such as:

- Class of common stock [Axis]
- Subsequent event type [Axis].

Here is an example of a [Table], its three [Axis], and its [Line Items]:



Note the **axis** "Nonmonetary Transaction Type [Axis]" above, its **domain** and its **members**.

5.6. Domain

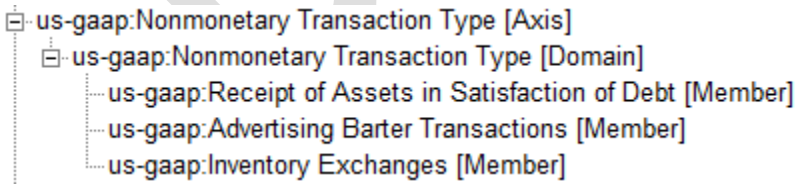
A **domain** is a set of members. Domains have partitions. A partition is collectively exhaustive and mutually exclusive set of members within a domain. Partitions do not overlap. Give a set X, a partition is a division of X into non-overlapping and non-empty "parts" or "blocks" or "cells" that cover all of X. More formally, these "cells" are both collectively exhaustive and mutually exclusive with respect to the set being partitioned. Domains always has at least one partition and may have many partitions.

For example, say you have the axis "Business Segments [Axis]". That axis might have the domain "Business Segments, All [Member]" which represents the total of all business segments, the sum of all the members. That is a usable domain. Whereas, suppose you had the axis "Subsequent Event Types [Axis]". Subsequent events are never aggregated, so you would never use that domain. But you would still need to provide a domain such as "Subsequent Event Types, all types [Member]", even though that domain would never actually be used within a report.

5.7. 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 member expresses the value of the axis or characteristic being described. For example, the "Consolidated Entity [Member]" might be the value of the characteristic "Legal Entity [Axis]".

Here is an example of an axis, its domain and its members:



5.8. Domain partition aggregation models

The **members** of a **domain** have relations to one another. These relations are referred to as **domain partition aggregation models**. There are two dynamics which impact domain aggregation. The first is whether you have a **partial set** or a **complete set** represented by the domain members. The second dynamic is whether the set aggregates or adds up. Axis which express partial sets and describe the characteristics of non-numeric concepts cannot aggregate.

5.9. Line items

Line items are a set of concepts which can be reported by an entity, they can contain values.

Line items is what amounts to a special type of axis or characteristic. Because the concepts within a set of line items can report fact values, they have data types such as string, monetary, etc. They may also have a balance type (debit or credit), a period type (as of a point in time, for some period, etc), and a few other attributes.

5.10. Component

A **component** is a sub set of line items which have the same information model and go together for some specific purpose. A component is an abstract report element in that it is more of an idea for convenience than a necessary report element.

For example, the balance sheet has two components: "Assets [Roll Up]" and "Liabilities and Equity [Roll Up]".

5.11. Concept

A **concept** refers to a financial reporting concept or a non-financial concept which can be reported as a fact within an SEC XBRL financial filing. A concept is sometimes referred to as a concrete concept, as compared to an abstract concept.

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).

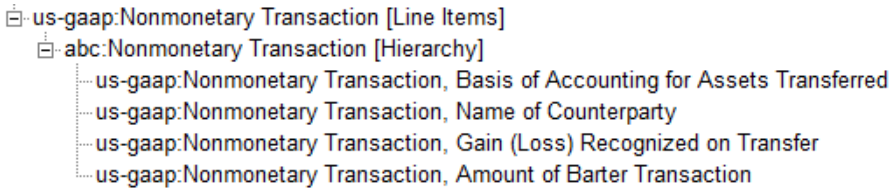
5.12. Information models

An **information model** describes the organization or relation between concepts within a component.

Concepts are not interspersed randomly within a table; they have patterns. Said another way, concepts are organized into different information models. A component is a set of concepts which have the same information model pattern or metapattern which are organized and used together for some specific purpose.

The common information models include: hierarchy, roll up, roll forward, compound fact, adjustment, variance, complex computation, text block, and grid (a pseudo information model).

Here is an example of line items which contain abstract and concrete concepts organized into an information model:



The above screen shot shows the [Line Items] of a nonmonetary transaction. These [Line Items] are organized within the component "Nonmonetary Transaction [Hierarchy]". The component has four concepts. The [Table] and [Axis] are not shown.

5.13. Business rules

A **business rule** is a relation between concepts. Business rules can be used to validate the values of facts contained within a report.

Taking the notion that concepts are not randomly placed within a set of line items further than just the information model; certain information models have financial integrity. A balance sheet always has "Assets" and "Liabilities and Equity". A balance sheet always balances. The line items of Assets will always foot. The line items of "Liabilities and Equity" will always foot. These characteristics, or the balance sheets financial integrity, are expressed using business rules.

HINT: Financial integrity exists within a table and also between tables.

5.14. Fact

A **fact** is a single, observable, reported piece of information which could be numeric, non-numeric (i.e. strings), or narrative (i.e. Text Block).

Facts are an intersection of **axis**, **line items** (remember that line items are a special type of axis which express a concepts), and a **value**. The value of a reported fact is referred to as a fact value. A fact value has fact attributes if it is numeric. A fact may also have a **footnote**.

The characteristics of a fact are described by the **axis** collection. The concept is one characteristic of the fact. So, facts have values, they have an axis which describes its characteristics, and they have fact attributes which further describe the value. Numeric facts have an amount and non-numeric facts are made up of textual information. Narratives are basically XHTML (technically narratives are escaped XHTML which is converted by software to HTML).

Facts exist within a **fact table**. A **fact table** is simply a set of one or more facts.

5.14.1. Intersection with line items (concepts)

A **fact** is associated with a concept, they reference a concept within the set of **line items**.

5.14.2. Intersection with axis

Facts are associated with axis which articulate characteristics, they reference a set of axis within an implicit or explicit table.

HINT: A fact will always have a "Reporting Entity [Axis]" and a "Period [Axis]" as they are required by the XBRL technical syntax. Because of this undesired calculation inconsistencies can exist in an SEC XBRL financial filing. See the appendix on the causes of calculation inconsistencies in the appendix.

5.14.3. Value

Facts have a value which can be numeric or non-numeric. An important non-numeric value type is a narrative or [Text Block] which is a fragment of escaped XHTML.

5.14.4. Fact attribute

If the **fact** is numeric, it has two attributes which describe additional information needed by numeric facts: **units** and **decimals** (rounding). **Units** provides information about this units of the numeric fact such as monetary, shares, or

some other units. The **decimals** (rounding) provides information as to the number of decimal places to which the number is accurate, such as to the thousands, millions, billions, hundredths, etc.

5.15. Footnote

Facts may also have **footnotes** (comments, don't confuse this with notes to the financial statements) which provide addition information about the fact.

5.16. Integrity Models

Relations exist within a [Table], for example a set of concepts can roll up into some total, information models describe these types of relationships within one [Table]. But relations can also exist between [Table]s.

Integrity models express the semantic relations between the components of on [Table] and the components of another [Table].

5.17. Flow Models

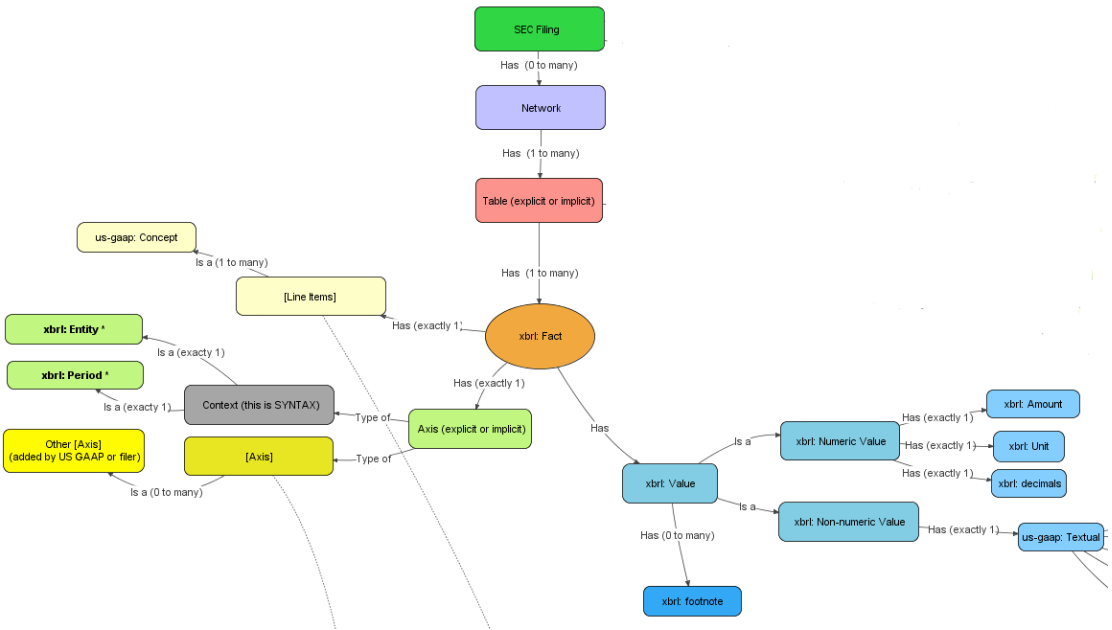
Flow is the notion of relations between networks/and or [Table]s for the purpose of ordering or sequencing information contained in a digital financial report.

5.18. Semantic Models

Semantic models add an additional layer of integrity to an integrity model specific to the domain for which information is expressed.

5.19. Summary Visualization of Logical Model

This graphic depicts what we will discussed thus far, showing the relationships between the components discussed expressed as a mind map. Each component is represented as a box. The lines show the relationships between the boxes. The text on the line provides information about the relationship:



[CSH: This model needs to be adjusted for the notion of a component.]

You can find a complete version of this mind map of the logical model at this URL:

http://www.xbrlsite.com/US-GAAP-2011/LogicalModel/SEC-LogicalModel-2011-06-04.pdf

HINT: There are many different ways to depict this information, the most formal being UML (Uniform Modeling Language). UML is a standard way of depicting this information. However, we are using a less formal approach to articulating this information to make it easier for business readers to understand the relations. UML provides additional details, but is harder for business readers to understand.

5.20. Summary Narrative of Logical Model

An **SEC XBRL filing**, or SEC XBRL-based financial **report**, can be logically broken down into sections or components. These sections are called **tables**. A **table** can be organized within a **network**. **Networks** organize where **tables** show up in software applications such as the SEC Interactive Data viewer application. **Networks** have numbers and a category. There are three categories of **networks**: Document, Statement, and Disclosure. The numbers within the **network** names determine the ordering of the **networks** within software applications.

Tables are groupings of **facts** which appear in a financial report for some specific purpose. **Facts** within a **table** have similar characteristics. **Axes** articulate these characteristics. **Line items** are a special type of **axis**. **Line items** contain **concepts**. These **concepts** can describe **fact values** in an **report**.

The value of an **axis** is a **member**. **Axis** always has a **domain** which is its set of members. A **domain** may be broken down into one or more partitions. There are two axis which must always exist: **entity** and **period**.

Numeric values have two additional **attributes**: **units** and **decimals**. **Units** explain the units of a numeric value and **decimals** explain the rounding of a numeric value. **Values** may also have **footnotes** which provide additional information about a specific value or a set of values. **Attributes** play no role in processing axis, they are attributes and not axis.

Facts reported do not have random relationships, the relationships between **facts** have patterns, this is referred to as an **information model**. A **table** may contain numeric **concepts** within **components** with have **information models** such as **roll up**, **roll forward**, **adjustment**, **complex computations**, etc. Or if the numeric information has no relationship or textual information is reported, the information model is simply a **hierarchy**. The **text block** information model is that of a narrative or prose reported as a block of HTML.

Likewise the **members** which make up the **domain** do not have random relations, the relations of an **axis** have patterns referred to as the **domain partition aggregation model**. Complete flat sets of describe characteristic of numeric concepts which can aggregate. Partial sets or domains whose members describe non-numeric concepts can never aggregate. Complete hierarchical sets are nested complete flat sets. Complex sets are other more complicated axis aggregation models.

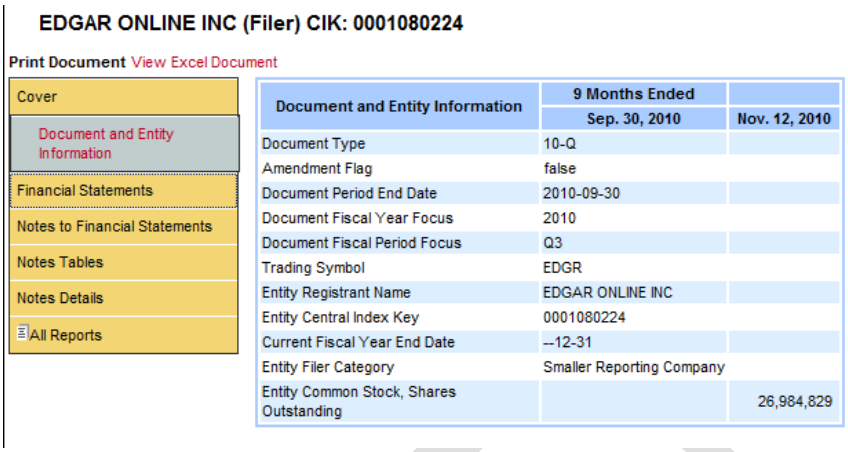
Integrity models describe how the components of one **table** and the components of another **table** relate. **Semantic models** add domain specific integrity beyond a general integrity model. **Flow models** articulate an ordering or sequencing of the networks/tables within a digital business report.

5.21. Digital Business Report Examples

The following are a number of examples which will provide additional explanation of how the report elements work together.

5.21.1. Simple example

Consider this example below which shows the "Document and Entity Information" network which contains the "Document and Entity Information" table, its axis, and its line items within the SEC XBRL Interactive Data viewer:



EDGAR ONLINE INC (Filer) CIK: 0001080224

Print Document View Excel Document

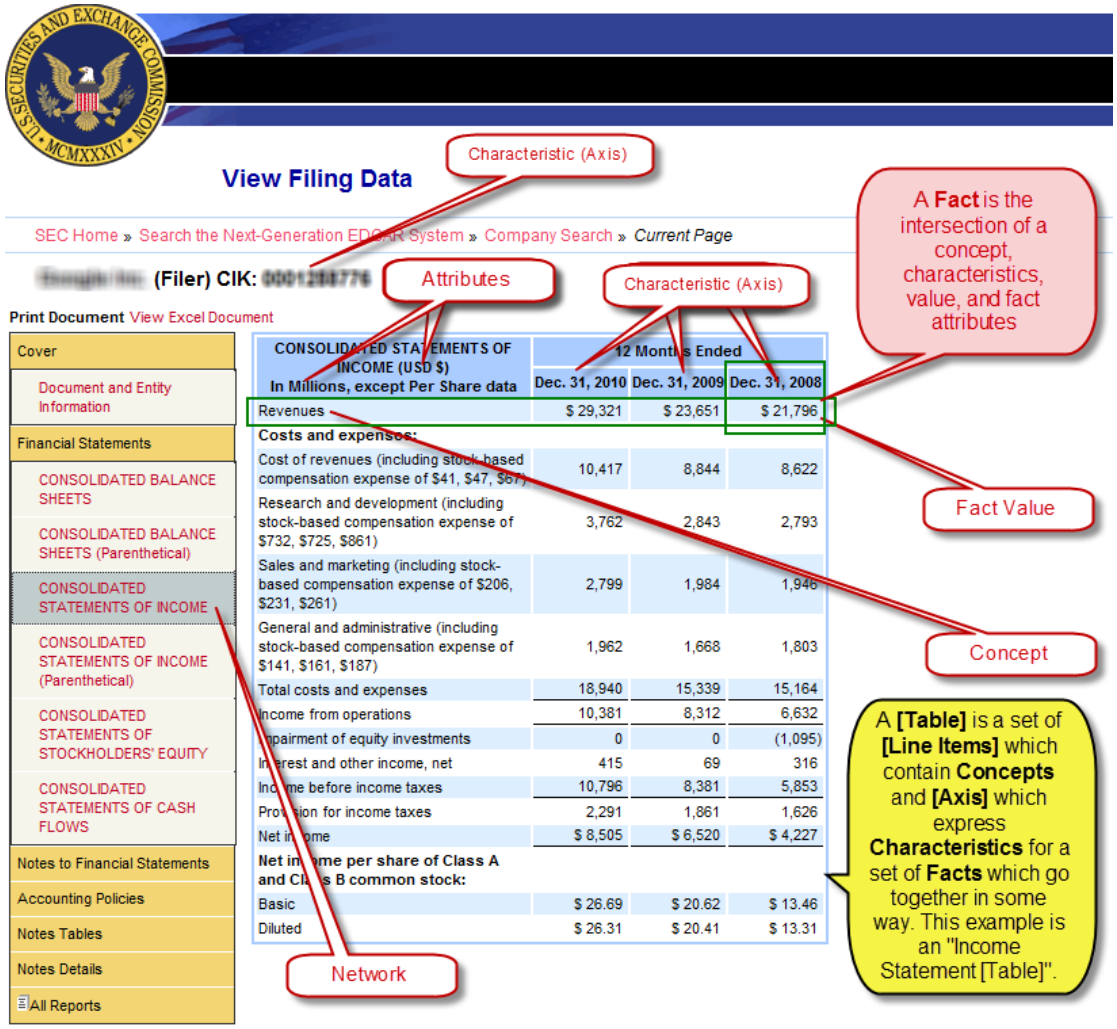
- Cover
- Document and Entity Information
- Financial Statements
- Notes to Financial Statements
- Notes Tables
- Notes Details
- All Reports

Document and Entity Information	9 Months Ended	
	Sep. 30, 2010	Nov. 12, 2010
Document Type	10-Q	
Amendment Flag	false	
Document Period End Date	2010-09-30	
Document Fiscal Year Focus	2010	
Document Fiscal Period Focus	Q3	
Trading Symbol	EDGR	
Entity Registrant Name	EDGAR ONLINE INC	
Entity Central Index Key	0001080224	
Current Fiscal Year End Date	--12-31	
Entity Filer Category	Smaller Reporting Company	
Entity Common Stock, Shares Outstanding		26,984,829

Note the last line of the report screenshot above, the right most column. The fact values "26,984,829" is associated with the concept which has the label "Entity Common Stock, Shares Outstanding" which is part of the line items of the Document and Entity Information [Table] which is contained in the "Document and entity information" network. The fact is also associated with the axis period which has the value "Sep. 30, 2010" and the axis entity which has the value of 0001080224. The fact value is rounded to the nearest share and has the units of shares.

5.21.2. More complex example

This is another example with more complexity.



The more complex example shows most of the major terms used. Other terms are left out here as not to overwhelm you. The visualization of the logical model which is next shows how every piece of the model is related to other pieces within the model.

Compare that to the HTML rendering of that table:

CONSOLIDATED STATEMENTS OF INCOME
(In millions, except per share amounts)

	Year Ended December 31,		
	2008	2009	2010
Revenues	$21,796	$23,651	$29,321
Costs and expenses:			
Cost of revenues (including stock-based compensation expense of $41, $47, $67)	8,622	8,844	10,417
Research and development (including stock-based compensation expense of $732, $725, $861)	2,793	2,843	3,762
Sales and marketing (including stock-based compensation expense of $206, $231, $261)	1,946	1,984	2,799
General and administrative (including stock-based compensation expense of $141, $161, $187)	1,803	1,668	1,962
Total costs and expenses	15,164	15,339	18,940
Income from operations	6,632	8,312	10,381
Impairment of equity investments	(1,095)	0	0
Interest and other income, net	316	69	415
Income before income taxes	5,853	8,381	10,796
Provision for income taxes	1,626	1,861	2,291
Net income	$ 4,227	$ 6,520	$ 8,505
Net income per share of Class A and Class B common stock:			
Basic	$ 13.46	$ 20.62	$ 26.69
Diluted	$ 13.31	$ 20.41	$ 26.31

And here is another view of the same information in a third party rendering tool, the a Firefox browser add in for viewing XBRL based information:

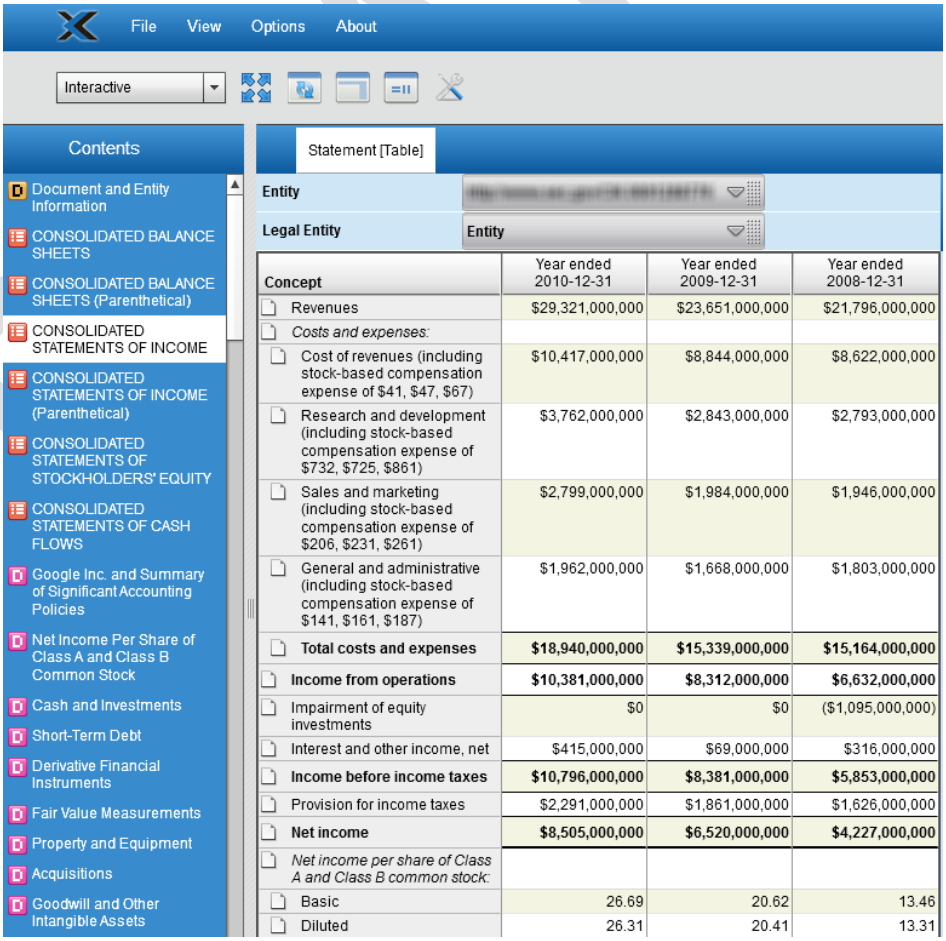
105 - Statement - CONSOLIDATED STATEMENTS OF INCOME

IDENTIFIER: 0001288776 - HTTP://WWW.SEC.GOV/C

LEGAL ENTITY [AXIS]: ENTITY [DOMAIN]

(IN THOUSANDS)			DATE	12 MONTHS ENDED 2008-12-31	12 MONTHS ENDED 2009-12-31	12 MONTHS ENDED 2010-12-31
UNIT	ITEM	NOTES				
USD	REVENUES			21,796,000	23,651,000	29,321,000
	COST OF REVENUES (INCLUDING STOCK-BASED COMPENSATION EXPENSE OF $41, $47, $67)			8,622,000	8,844,000	10,417,000
	RESEARCH AND DEVELOPMENT (INCLUDING STOCK-BASED COMPENSATION EXPENSE OF $732, $725, $861)			2,793,000	2,843,000	3,762,000
	SALES AND MARKETING (INCLUDING STOCK-BASED COMPENSATION EXPENSE OF $206, $231, $261)			1,946,000	1,984,000	2,799,000
	GENERAL AND ADMINISTRATIVE (INCLUDING STOCK-BASED COMPENSATION EXPENSE OF $141, $161, $187)			1,803,000	1,668,000	1,962,000
	TOTAL COSTS AND EXPENSES			15,164,000	15,339,000	18,940,000
	INCOME FROM OPERATIONS			6,632,000	8,312,000	10,381,000
	IMPAIRMENT OF EQUITY INVESTMENTS			(1,095,000)	0	0
	INTEREST AND OTHER INCOME, NET			316,000	69,000	415,000
	INCOME BEFORE INCOME TAXES			5,853,000	8,381,000	10,796,000
	PROVISION FOR INCOME TAXES			1,626,000	1,861,000	2,291,000
	NET INCOME			4,227,000	6,520,000	8,505,000
USD/SHARES	BASIC			0.01346	0.02062	0.02669
	DILUTED			0.01331	0.02041	0.02631

Here is another rendering of the same information using the XBRL Cloud free XBRL viewer browser application which likewise lets you pivot the information:



Here is a rendering of the same information using Edgar Online I-Metrix which uses Microsoft Excel as its rendering output format:

	A	B	C	D
1	I-Metrix by EDGAR Online			
2	**Name**			
3	**Symbol**			
4	**Form**			
5	Period Dates	1/1/2010 - 12/31/2010	1/1/2009 - 12/31/2009	1/1/2008 - 12/31/2008
6	CONSOLIDATED STATEMENTS OF INCOME			
7	Revenues	$29,321,000,000	$23,651,000,000	$21,796,000,000
8	*Costs and expenses:*			
9	Cost of revenues (including stock-based compensation expense of $41, $47, $67)	$10,417,000,000	$8,844,000,000	$8,622,000,000
10	Research and development (including stock-based compensation expense of $732, $725, $861)	$3,762,000,000	$2,843,000,000	$2,793,000,000
11	Sales and marketing (including stock-based compensation expense of $206, $231, $261)	$2,799,000,000	$1,984,000,000	$1,946,000,000
12	General and administrative (including stock-based compensation expense of $141, $161, $187)	$1,962,000,000	$1,668,000,000	$1,803,000,000
13	Total costs and expenses	$18,940,000,000	$15,339,000,000	$15,164,000,000
14	Income from operations	$10,381,000,000	$8,312,000,000	$6,632,000,000
15	Impairment of equity investments	$0	$0	-$1,095,000,000
16	Interest and other income, net	$415,000,000	$69,000,000	$316,000,000
17	Income before income taxes	$10,796,000,000	$8,381,000,000	$5,853,000,000
18	Provision for income taxes	$2,291,000,000	$1,861,000,000	$1,626,000,000
19	Net income	$8,505,000,000	$6,520,000,000	$4,227,000,000
20	*Net income per share of Class A and Class B common stock:*			
21	Basic	$26.69	$20.62	$13.46
22	Diluted	$26.31	$20.41	$13.31

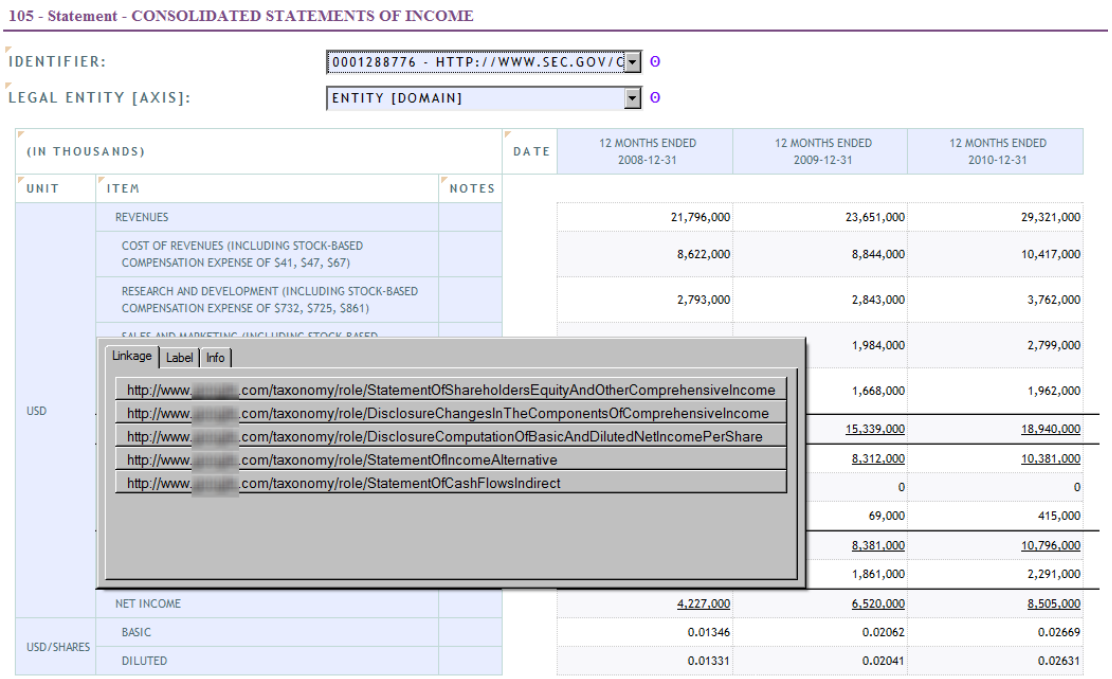
Notice the similarities and differences between the SEC, Firefox, and XBRL Cloud XBRL viewer and Edgar Online I-Metrix applications.

5.21.3. Interactive information

We can't show it here because our paper is only two dimensional, but the tool above allows you to "pivot" the [Table] to reorganize the information much like a spreadsheet pivot table.

One final important thing to understand is that software tools can leverage the information which is expressed and move from one place in an SEC XBRL financial filing to another place. Considering out example above again, if you "right click" on the concept "NET INCOME" a dialog box appears showing other Networks which the concept "NET INCOME" also exists. The application will then take you to that section of the document.

In our case, you could quickly navigate to the "Statement of Shareholders' Equity and Other Comprehensive Income", "Components of Other Comprehensive Income", "Components of Basic and Diluted Earnings per Share", or the "Cash Flow Statement" all of which have the concept "NET INCOME".



105 - Statement - CONSOLIDATED STATEMENTS OF INCOME

IDENTIFIER: 0001288776 - HTTP://WWW.SEC.GOV/C

LEGAL ENTITY [AXIS]: ENTITY [DOMAIN]

(IN THOUSANDS)			DATE	12 MONTHS ENDED 2008-12-31	12 MONTHS ENDED 2009-12-31	12 MONTHS ENDED 2010-12-31
UNIT	ITEM	NOTES				
USD	REVENUES			21,796,000	23,651,000	29,321,000
	COST OF REVENUES (INCLUDING STOCK-BASED COMPENSATION EXPENSE OF $41, $47, $67)			8,622,000	8,844,000	10,417,000
	RESEARCH AND DEVELOPMENT (INCLUDING STOCK-BASED COMPENSATION EXPENSE OF $732, $725, $861)			2,793,000	2,843,000	3,762,000
	SALES AND MARKETING (INCLUDING STOCK-BASED				1,984,000	2,799,000
					1,668,000	1,962,000
					15,339,000	18,940,000
					8,312,000	10,381,000
					0	0
					69,000	415,000
					8,381,000	10,796,000
					1,861,000	2,291,000
	NET INCOME			4,227,000	6,520,000	8,505,000
USD/SHARES	BASIC			0.01346	0.02062	0.02669
	DILUTED			0.01331	0.02041	0.02631

Linkage | Label | Info

http://www.[redacted].com/taxonomy/role/StatementOfShareholdersEquityAndOtherComprehensiveIncome
http://www.[redacted].com/taxonomy/role/DisclosureChangesInTheComponentsOfComprehensiveIncome
http://www.[redacted].com/taxonomy/role/DisclosureComputationOfBasicAndDilutedNetIncomePerShare
http://www.[redacted].com/taxonomy/role/StatementOfIncomeAlternative
http://www.[redacted].com/taxonomy/role/StatementOfCashFlowsIndirect

5.22. Detailed Information

The appendix contains a section which provides additional details relating to report elements including their properties.

6. Information Models (Metapatterns)

The world is full of patterns and information technology engineers and architects leverage these patterns when trying to get a computer to do something effectively and efficiently for humans. Understanding the patterns which exist can help make both building and using software easier.

Business reports, including financial reports, have patterns. Another way of saying this is that business reports are not random. There are not an infinite number of patterns in business reporting.

The next section, *Business Reporting Use Cases*, introduces a set of approximately 30 business reporting use cases collected over a number of years. That set of 30 business use cases was condensed from many, many different business reporting use cases examined in order to understand how to model financial information using XBRL. These business use cases were also used within the USFRTF Patterns Guide which was created in order to help understand how to construct the US GAAP Taxonomy.

These 30 business use cases were distilled down further, basically to their essence. This distilled version is referred to here as a metapattern. Basically, every business reporting use case follows one or a combination of these metapatterns. While it is hard to say if these metapatterns will cover 100% of all business reporting use cases, it is hard to dispute that any of these 9 metapatterns.

The US GAAP Taxonomy Architecture refers to these metapatterns as *compact pattern definitions* and documents a number of these metapatterns in what it refers to as style guides. These style guides were never released publicly but they are referred to in the US GAAP Taxonomy Architecture. Everything within the US GAAP Taxonomy fits into one or a combination of these metapatterns.

Metapatterns explain the business semantics within a modelling of information expressed as an XBRL taxonomy. As such, these metapatterns can be said to express information models.

The following is a summary of the identified business reporting metapatterns.

- **Hierarchy**: A hierarchy information model denotes a hierarchy of concepts with no numeric relations. If no numeric relations exist, then the information model of the component is a hierarchy. Basically, anything can be modelled as a hierarchy. It is the addition of additional relations, typically computations, which turns a hierarchy into some other metapattern.
- **Roll Up**: A roll up information model computes a total from a set of other concepts. This information model is commonly referred to a "roll up", or the equation A + B = C. All concepts involved in this information model have the same set of characteristics and all must be numeric.
- **Roll Forward**: A roll forward information model reconciles the balance of a concept between two points in time. This information model is commonly referred to a "roll forward" or "movement analysis" or the equation: beginning balance + changes = ending balance. In this equation period [Axis] is as of two different points in time and the changes occur during the period between those two points in time.
- **Compound Fact**: A compound fact information model is characterized by the fact that some set of other concepts or some other information model exists for a set of characteristics expressed by one or more [Axis]. For

example, the salary information for the directors of an entity is a compound fact. The salary information is made up of salary, bonuses, director fees which roll up into total salary and this set of compound facts can be expressed for any number of directors, the director being the characteristic or axis of the compound fact.

- **Adjustment**: An adjustment information model reconciles an originally stated balance to a restated balance, the adjustment being the total change, between two different report dates. An adjustment is similar to a roll forward in that it is a reconciliation, however rather than the period [Axis] changing; it is the *Report Date [Axis]* which changes: originally reported balance + adjustment = restated balance.
- **Variance**: A variance information model reconciles some reporting scenario with another reporting scenario, the variance between reporting scenarios being the variance or changes. For example, a sales analysis which reconciles the concept sales for the reporting scenarios of actual and budgeted is a variance. The equation is: actual – budget = variance.
- **Complex Computation**: A complex computation information model can be thought of as a hierarchy plus a set of commutations between different concepts within that hierarchy which are challenging to model as the parent/child relations of a graph. The type of computations can vary significantly, thus the challenging in modelling. For example, the computation of earnings per share is a complex computation.
- **Text Block**: A text block information model is an information model which contains, by definition, only one concept and that concept expresses what amounts to a narrative or prose as escaped HTML within that one concept. For example, the narrative associated with a set of accounting policies expressed as a list or a table presentation format is a text block. As there is only one concept, there can be no relations within the information model.
- **Grid**: A grid information model is a pseudo metapattern which uses the presentation characteristics of the columns and rows of a table to model information. Because the grid models presentation information and not business semantics, it cannot be considered a metapattern. However, the grid is included in this list because the US GAAP Taxonomy uses a grid information model to model the statement of changes in equity.

You can obtain example XBRL instances and XBRL taxonomies and other information for each of these metapatterns which is helpful in understanding these metapatterns at the following URL:

http://www.xbrlsite.com/DigitalFinancialReporting/Metapatterns/2011-07-15

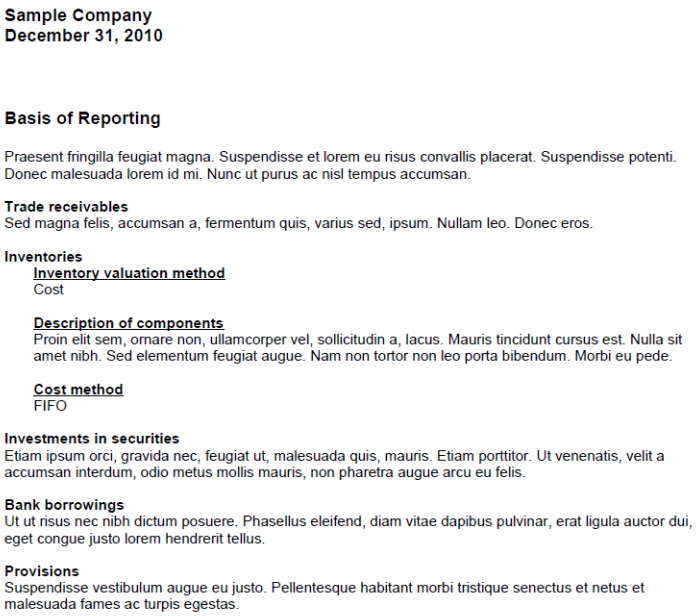
It is important to examine the details of these metapatterns, that is where the clues lie which provide understanding of each metapattern and the differences between the metapatterns. We now provide key information which is helpful in gaining an understanding of these business reporting metapatterns. Each uses a financial reporting oriented example as most business users understand financial reporting to a sufficient degree.

6.1. Hierarchy

A hierarchy information model denotes a hierarchy of concepts with no numeric relations. If no numeric relations exist, then the information model of the component is a hierarchy. Basically, anything can be modelled as a hierarchy. It is the addition of additional relations, typically computations, which turns a hierarchy into some other metapattern.

The *Hierarchy* metapattern models a hierarchy or a tree of information. A Hierarchy metapattern has no computations (i.e. no XBRL calculations or XBRL Formulas relating to relations between numeric values). A hierarchy can contain business rules such as reportability rules which helps one understand when specific information must be reported.

6.1.1. Visual Example



Sample Company
December 31, 2010

Basis of Reporting

Praesent fringilla feugiat magna. Suspendisse et lorem eu risus convallis placerat. Suspendisse potenti. Donec malesuada lorem id mi. Nunc ut purus ac nisl tempus accumsan.

Trade receivables
Sed magna felis, accumsan a, fermentum quis, varius sed, ipsum. Nullam leo. Donec eros.

Inventories

Inventory valuation method
Cost

Description of components
Proin elit sem, ornare non, ullamcorper vel, sollicitudin a, lacus. Mauris tincidunt cursus est. Nulla sit amet nibh. Sed elementum feugiat augue. Nam non tortor non leo porta bibendum. Morbi eu pede.

Cost method
FIFO

Investments in securities
Etiam ipsum orci, gravida nec, feugiat ut, malesuada quis, mauris. Etiam porttitor. Ut venenatis, velit a accumsan interdum, odio metus mollis mauris, non pharetra augue arcu eu felis.

Bank borrowings
Ut ut risus nec nibh dictum posuere. Phasellus eleifend, diam vitae dapibus pulvinar, erat ligula auctor dui, eget congue justo lorem hendrerit tellus.

Provisions
Suspendisse vestibulum augue eu justo. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas.

6.1.2. Description of Example

The example shows a *Hierarchy* of accounting policies. If you are familiar with something like the outline feature of Microsoft Word then you know what a hierarchy is. There are no explicit relationships between concepts within this type of information model because XBRL most taxonomies don't generally distinguish between the types of relations. They could, but they currently do not. As such, we make no distinction between types of relations. Again, by definition everything is a *Hierarchy* unless additional information is added which turns the hierarchy into some other metapattern.

A *Hierarchy* can always be identified by a software application by the fact that there are no XBRL calculations or other business rules expressing computations within the taxonomy.

6.1.3. Extension Points

The following are the logical extension points for a *Hierarchy* metapattern:

- Add new [Axis]
- Add new [Member] to [Axis]
- Add new concepts to [Line Items] of *Hierarchy*

6.2. Roll Up

A roll up information model computes a total from a set of other concepts. This information model is commonly referred to a "roll up", or by the equation A + B = C. All concepts involved in this information model have the same set of characteristics and all must be numeric.

The *Roll Up* metapattern can be thought of as a hierarchy metapattern with additional constraints. One additional constraint is that the total and the components of the total must all be numeric and of the same data type. Another constraint is that a business rule for the relations between the total and the set of concept which make up that total is expressed.

6.2.1. Visual Example

Sample Company
December 31,
(thousands of dollars)

	2010	2009
Property, Plant, and Equipment, Net		
Land	5,347	1,147
Buildings, Net	244,508	366,375
Furniture and Fixtures, Net	34,457	34,457
Computer Equipment, Net	4,169	5,313
Other Property, Plant, and Equipment, Net	6,702	6,149
Property, Plant and Equipment, Net, Total	295,183	413,441

6.2.2. Description

The *Roll Up* in the example above is a set of five concepts which add up to a sixth concept: Land + Buildings, Net + Furniture and Fixtures, Net + Computer Equipment, Net + Other Property, Plant and Equipment, Net = Property, Plant and Equipment, Net, Total. A *Roll Up* can have other Roll Ups within (i.e. nested), what amount to sub totals.

A *Roll Up* can always be identified by a software application by its set of XBRL calculations within the XBRL taxonomy.

6.2.3. Extension Points

The following are extension points for a *Roll Up* metapattern:

- Add new [Axis]
- Add new [Member] to [Axis]
- Add new concepts to the concepts being rolled up (i.e. a new total concept cannot be added, that would require an entirely new roll up); for example, adding "Airplanes" to the roll up above would make sense but adding another concept "Property, Plant and Equipment" would not make sense

6.3. Roll Forward

A roll forward information model reconciles the balance of a concept between two points in time. This information model is commonly referred to a "roll forward" or "movement analysis" or by the equation: beginning balance + changes = ending balance. In this equation, the Period [Axis] is as of two different points in time and the changes occur during the period between those two points in time.

The changes within a roll forward could take the form of one concept, a set of many change concepts, or one or more roll ups which aggregate to change concepts.

6.3.1. Visual Example

Sample Company
December 31,
(thousands of dollars)

	2010	2009
Roll Forward of Land		
Land, Beginning Balance	1,147	1,147
Additions	1,992	400
Disposals	-193	-200
Translation difference	2,401	-200
Land, Ending Balance	5,347	1,147

6.3.2. Description

The *Roll Forward* above reconciles the beginning balance of Land to the ending balance of Land. The XBRL instance provides Facts for two Roll Forwards, 2010 and 2009. Land, Beginning Balance + Additions – Disposals + Translation Difference = Land, Ending Balance. In the case above, the change concept is the total of a roll up.

A *Roll Forward* can be identified by the business rule which must be used to verify the computation of the reconciliation, beginning balance + changes = ending balance with a changing Period [Axis].

6.3.3. Extension Points

The following are extension points for a *Roll Forward* metapattern:

- Add new [Axis]
- Add new [Member] to [Axis]
- Add new concepts to the *Roll Up* of changes; (a new balance concept would never be added)
- Add a new *Roll Up* of changes or one or more change concepts; (i.e. a roll forward can have one or many changes)

Note that there are two approaches to modelling a roll forward. The first is to create a roll up to summarize all changes and then model only one change concept. The second is to not use a roll up and model each change separately. Semantically, the two are equivalent.

6.4. Compound Fact

A compound fact information model is characterized by the fact that for some set of concepts expressed within some information model; that information model can be expressed over some characteristic expressed as an [Axis]. Basically, it is the [Axis] which provides additional information which makes each information model unique. For example, the salary information for the directors of an entity is a compound fact. The salary information is made up of salary, bonuses, director fees and such information must be associated with a specific director to be meaningful and to distinguish, say, one salary from another salary.

6.4.1. Visual Example

Sample Company
For Period Ending December 31, 2010

Director	Salary	Bonus	Director Fee	Options Granted, at Fair Value
pattern:JohnDoeMember	1,000	1,000	1,000	1,000
pattern:JaneDoeMember	1,000	1,000	1,000	1,000
frm:DirectorsAllMember	2,000	2,000	2,000	2,000

6.4.2. Description

In the example above salary information is expressed for the directors of an entity. The salary information (salary, bonus, director fee, and options granted) are the concepts which make up the compound fact. The director is the axis along which the salary information is expressed, here for the members John Doe, Jane Doe, and the total salary information for all directors.

Any information model could be expressed as a compound fact. In the example above the information model is a hierarchy. This information model might have also been modelled as a roll up had a total of all salary information been provided.

6.4.3. Extension Points

The following are extension points for a *compound fact* metapattern:

- Add new [Member] to [Axis] (generally, a new [Axis] would not be added but might be to further detail the primary characteristic)
- Add new concepts to [Line Items]
- Basically, extension points are determined by the specific information model of the compound fact

6.5. Adjustment

An adjustment information model reconciles an originally stated balance to a restated balance, the adjustment being the total change, between two different report dates. An adjustment is similar to a roll forward in that it is a reconciliation, however rather than the Period [Axis] changing; it is the *Report Date [Axis]* which changes: originally reported balance + adjustment = restated balance.

The *Adjustment* metapattern shows how to model an adjustment to a prior period financial statement for a change in accounting policy or correction of an error as defined by financial reporting standards. This same approach can be used for making adjustments to other beginning balances not related to financial reporting.

6.5.1. Visual Example

Sample Company
December 31,
(thousands of dollars)

	2010	2009
Prior Period Adjustment		
Retained Earnings (Accumulated Losses), Originally Stated 2009	4,000	
Change in Accounting Policy	3,000	
Correction of an Error	-1,000	
Retained Earnings (Accumulated Losses), Restated 2009 Beginning Balance	6,000	

6.5.2. Description

The example *Adjustment* above reconciles the Retained Earnings (Accumulated Losses), Originally Stated in 2009 to its Restated 2009 Beginning Balance via the Prior Period Adjustments which make up the change. Note that an *Adjustment* looks similar in presentation to a roll forward, however it is different in that a different [Axis] is changing.

An *Adjustment* can be identified by software applications by the business rule which computes the adjustment to verify that it is correctly articulated within the XBRL instance: originally stated + adjustment = restated balance over a changing *Report Date [Axis]*.

6.5.3. Extension Points

The following are extension points for an *Adjustment* metapattern:

- Add new [Axis]
- Add new [Member] to [Axis]
- Add new adjustment concepts to [Line Items] of the adjustment; (new balance concepts cannot be added)

6.6. Variance

A variance information model reconciles some reporting scenario with another reporting scenario, the variance between reporting scenarios being the variance or changes. For example, a sales analysis which reconciles the concept sales for the reporting scenarios of actual and budgeted is a variance. The equation in this case is: actual – budget = variance. But a variance could take other forms such as a variance from forecast, variance from plan, etc.

A variance is characterised by a changing Reporting Scenario [Axis] and the information model of a variance could take the form of any information model such as a hierarchy, roll up, roll forward, etc.

6.6.1. Visual Example

Sample Company
For Period Ending December 31, 2010

Concept	Actual	Budgeted	*Variance*
Sales	6,000	5,000	*1,000*
Cost of Goods Sold	4,000	3,000	*1,000*
Contribution Margin	1,000	2,000	*-1,000*
Distribution Costs	1,000	1,000	*0*

6.6.2. Description

A *Variance* reconciles two different reporting scenarios differentiated using the *Reporting Scenarios [Axis]*, in the case here *Actual [Member]* and *Budgeted [Member]*, the difference being the Variance, or *Reporting Scenarios, All [Member]*.

A *Variance* can be identified by software applications by the business rule which verifies and computes the variance, Actual [Member] + Budgeted [Member] = Reporting Scenarios, All [Member], all within the *Reporting Scenario [Axis]*.

[CSH: The Reporting Scenarios, All [Member] as the variance seems odd to me; this should probably be Variance [Member].]

6.6.3. Extension Points

The following are extension points for a *Variance* metapattern:

- Add new [Axis]
- Add new [Member] to an [Axis]
- Add new concepts to [Line Items]

What can change is determined by the information model of the concepts for which a variance is being expressed.

6.7. Complex Computation

A complex computation information model can be thought of as a hierarchy plus a set of commutations between different concepts within that hierarchy which are more challenging to model than a roll up or roll forward. The type of computations can vary significantly, thus the challenging in modelling. For example, the computation of earnings per share is a complex computation.

Basically, any hierarchy can be turned into a complex computation by adding business rules which express relations between the concepts within the [Line Items] of that hierarchy.

6.7.1. Visual Example

Sample Company
For Period Ended December 31,

	2010	2009
OTHER INFORMATION		
Earnings Per Share Components		
Net Income (Loss)	10,000,000	20,000,000
Weighted Average Common Shares	100,000,000	100,000,000
Earnings Per Share	0.10	0.20

6.7.2. Description

A *Complex Computation* metapattern is in essence a *Hierarchy* metapattern with *Business Rules* which express complex relations between numeric values contained in that hierarchy. In the example above, Earnings Per Share is expressed in relation to Net Income and Weighted Average Common Shares. The Weighted Average Common Shares computation is also expressed as a business rule.

An *Complex Computation* metapattern can always be identified by software as it does not fit into any other metapattern category. It will have some XBRL Formula, but it will not match any of the other XBRL Formulas for the other metapatterns.

6.7.3. Extension Points

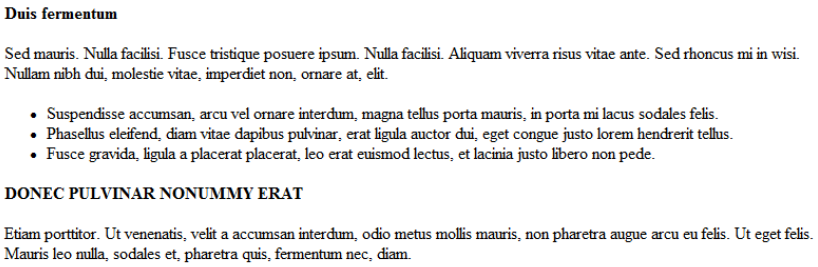
The following are extension points for a *Complex Computation* metapattern:

- Add new [Axis]
- Add new [Member] to [Axis]
- Add new concepts to [Line Items]
- Add new business rules to set of relations

6.8. Text Block

A text block information model is an information model which contains, by definition, only one concept and that concept expresses what amounts to a narrative or prose as escaped HTML within that one concept. For example, the narrative associated with a set of accounting policies expressed as a list or a table presentation format is a text block. As there is only one concept, there can be no relations within the information model.

6.8.1. Visual Example



Duis fermentum

Sed mauris. Nulla facilisi. Fusce tristique posuere ipsum. Nulla facilisi. Aliquam viverra risus vitae ante. Sed rhoncus mi in wisi. Nullam nibh dui, molestie vitae, imperdiet non, ornare at, elit.

- Suspendisse accumsan, arcu vel ornare interdum, magna tellus porta mauris, in porta mi lacus sodales felis.
- Phasellus eleifend, diam vitae dapibus pulvinar, erat ligula auctor dui, eget congue justo lorem hendrerit tellus.
- Fusce gravida, ligula a placerat placerat, leo erat euismod lectus, et lacinia justo libero non pede.

DONEC PULVINAR NONUMMY ERAT

Etiam porttitor. Ut venenatis, velit a accumsan interdum, odio metus mollis mauris, non pharetra augue arcu eu felis. Ut eget felis. Mauris leo nulla, sodales et, pharetra quis, fermentum nec, diam.

6.8.2. Description

Any portion of a business report can be modelled as a [Text Block], referred to as "block tagged". Alternatively, any portion could also be "detailed tagged" using one of the other information model metapatterns.

6.8.3. Extension Points

The following are extension points for a *Text Block* metapattern:

- Add new [Axis]
- Add new [Member] to [Axis]

6.9. Grid

A grid information model is a pseudo metapattern which uses the presentation characteristics of the columns and rows of a table to model information. Because the grid models presentation information and not business semantics, it cannot be considered a metapattern. However, the grid is included in this list because the US GAAP Taxonomy uses a grid information model to model the statement of changes in equity.

6.9.1. Visual Example

Sample Company
December 31,
(thousands of dollars)

	Common Stock	Additional Paid-in Capital	Retained Earnings (Accumulated Deficit)	Equity
Balance at December 31, 2009	150,000	50,000	200,000	400,000
Net Income (Loss)			200,000	200,000
Dividends			-100,000	-100,000
Common Stock Issued	25,000	25,000		50,000
Balance at December 31, 2010	175,000	75,000	300,000	550,000

HINT: In a grid, the axis are generally the columns of the grid and the concepts reported are the rows of the grid. Because the axis are unique to the grid and the rows repeat for every fact value reported, many portions of a grid cannot tie to other components of a business report.

6.9.2. Description

The grid is used to model the statement of changes in equity above. The axis Equity Component [Axis] assigned to a fact indicates which column the fact belongs in. The [Line Items] determines the rows of the table. The cells of the table are the intersections between the Equity Component [Axis] and the concept of the set of [Line Items] of the fact which should go into that cell.

6.9.3. Extension Points

The following are extension points for a *Grid* metapattern:

- Add new [Axis]
- Add new [Member] to [Axis]
- Add a new concept to [Line Items]

7. Domain Partition Aggregation Models

Domain partition aggregation models explain how the members which make up a domain partition aggregate, basically how one member relates to another. This section explains the different types of aggregation models. First we will help you understand exactly what we mean by a domain partition aggregation model.

7.1. Recall that Domains are Sets of Members

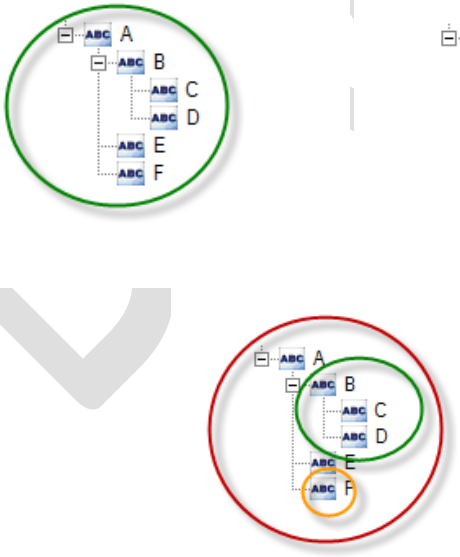
A **domain** is a set of members. For example, consider the screen shot below:

Sample Company
For Period Ending December 31,
(thousands of dollars)

	2010	2009	2008
Sales, all Business Segments, all Geographic Areas	32,038	35,805	32,465
Breakdown by Business Segment:			
Pharmaceuticals	20,181	18,150	15,275
Generics	2,433	1,973	1,823
Consumer Health	6,675	6,514	5,752
Other Segments	2,749	9,168	9,615

The screen shot shows a breakdown of sales by business segment and a total for sales for all business segments. This is an example of a domain partition aggregation. The concept "Sales" is part of a table which has the axis "Business Segments" with the member "All Business Segments" which represents a total of the other members Pharmaceuticals, Generics, Consumer Health, and Other Segments.

Consider the more general example:



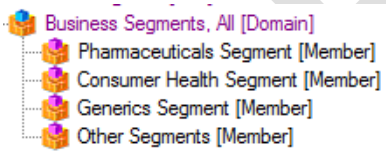
Assume that the above trees are the [Member]s of an [Axis]. In the diagram, A is a domain with members A, B, E, F, C and D. Also, B is a domain with the members B, C and D. And I also believe that F is a domain with the only member being itself.

7.2. Recall that Domains have Partitions

Domains have partitions. A partition is collectively exhaustive and mutually exclusive set of members within a domain. Partitions do not overlap. Give a set X, a partition is a division of X into non-overlapping and non-empty "parts" or "blocks" or "cells" that cover all of X. More formally, these "cells" are both collectively exhaustive and mutually exclusive with respect to the set being partitioned. Domains always has at least one partition and may have many partitions.

Referring back to the business segment breakdown example, the table might be modelled something like the following:

Looking specifically at the Business Segment [Axis] you see the following:



The Business Segment [Axis] has one partition or one breakdown of its set of members. It could have other breakdowns which would be expressed as another domain partition.

7.3. Aggregation

Intuitively, it is not a huge jump to make to believe that the sum of the [Member]s should add up to the total of all business segments, modelled above as the "Business Segments, All [Domain]." However, the breakdown is modelled in an XBRL taxonomy using business rules expressed as XBRL Formulas to articulate this aggregation to a software application.

The XBRL Dimensions specification does not address dimensional aggregation. As you can see by looking at the specification, there is no section in the XBRL Dimensions specification (http://www.xbrl.org/Specification/XDT-REC-2006-09-18+Corrected-Errata-2009-09-07.htm) which addresses dimensional aggregation.

7.4. Domain Partition Aggregation Models

While above we provided a very basic example to help you become familiar with the ideas which we want to discuss, aggregation is a bit more complex. Here is the spectrum of domain partition aggregation models:

Model	Description	Example
Partial set (or no aggregation)	A partial set is a set which is incomplete so it can never aggregate or a set which describes non-numeric concepts which could never aggregate. A set of numeric concepts which could be aggregated but the aggregated value is illogical or never used is considered a partial set.	A partial set of the classes of cash, a set which describes the accounting policies such as the depreciation method of useful lives of each class. Subsequent events (which are never aggregated) are a partial set. The aggregate value of the useful lives of PPE (a numeric value) is a partial set as the value is illogical.
Complete flat set	A complete flat set is a set which is both complete and characterizes a numeric concept which can be aggregated. A complete flat set is similar to a [Roll Up] information model. The aggregation scheme is that the members of the list aggregate to the parent of those members.	A value of all classes of property, plant and equipment and the value of each class of property, plant and equipment is a complete flat set.
Complete hierarchical set	A complete hierarchical set is a set comprised of a collection of complete flat sets. A business rule will always describe the aggregation scheme.	A breakdown of revenues by geographic area whereby the domain of geographic areas has a hierarchy of geographic regions such as "North America" which makes up one hierarchy and countries such as "United States" and "Canada" which comprise a second hierarchy nested within the first hierarchy.
Complex set	A complex set is a set which has some other set of complex relations expressed within a business rule.	Some complex disclosure.

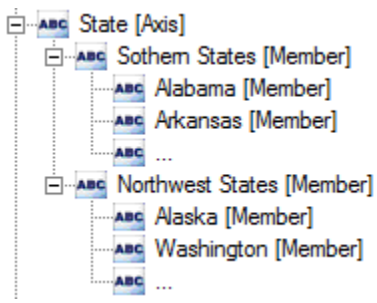
There is no "standard" XBRL terminology at this time for these types of relations, all the terminology is taxonomy specific. This is because XBRL Dimensions does not address aggregation of domain members.

However, although XBRL Dimensions does not define how members of a domain aggregate or if they aggregate at all, you can use XBRL Formulas to clearly define such aggregation if they exist. This XBRL Formulas definition both articulates the aggregation scheme and can also be used to validate XBRL instances against that scheme. XBRL Formulas can handle quite complex models.

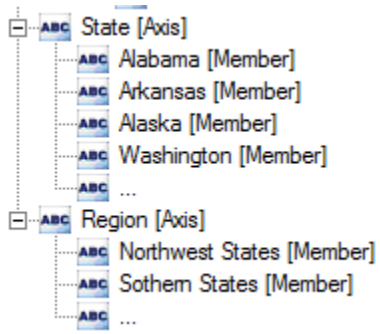
But, since the SEC does not allow XBRL Formulas to be submitted with an SEC XBRL filing, these filings can have aggregation schemes which are inconsistent with aggregation schemes you may come up with or different than how you might interpret the XBRL taxonomy. SEC XBRL filers can still create a valid scheme of aggregation, test any XBRL instances created against it in their SEC XBRL filing but not submit that XBRL Formula set with their SEC XBRL filing. One way or another, SEC XBRL filers should prove that their XBRL instances do in fact follow their defined scheme by validating their XBRL instance.

7.5. Modelling Options Impact Aggregation Models

How things are modelled impacts the aggregation models. An example will help your understanding. Consider how one might model the domain of US states:



An alternate approach to modelling this information is to not use one axis as was done above, but rather to use two [Axis], one for the state and another for the region:



There is not necessarily one right or wrong answer here; how you would model your business use case depends on the dynamics of what it is you are modelling. The primary point I am making here is that if there are multiple ways to model the same information; then what criteria do you use to determine the most appropriate modelling approach?

Generally at this point it is wise to try and stay away of nested or complex hierarchies like the first example, unless you provide an XBRL Formula which explains the aggregation model. The second example results in flat hierarchies

8. Overview of Business Use Cases

The following provides an overview of the business use cases. This overview is intended to help the reader compare and contrast the different business use cases provided. The business use cases provided are hard to dispute. There are likely other business use cases which are not shown. Each business use case listed is provided for one or more specific reasons to highlight one or more unique characteristics which it posses.

The business use cases tend to be financial reporting related. This is true for two reasons. First, that is where the primary use of XBRL is right now and I am a CPA trying to show other CPAs how to work with XBRL within the domain of financial reporting. Second, most business users understand financial reporting enough to understand these examples. It should be quite easy for a business user to take the principles articulated in these financial reporting related business use cases and apply those principles to the practice of modelling other areas of business reporting.

Here is a summary of the business use cases.

#	Title	Description
BUC01	Flat Hierarchy	Metapattern. One level flat hierarchy. No computations.
BUC02	Nested Hierarchy	Variation of hierarchy. Multi-level nested hierarchy. No computations.
BUC03	Simple Roll Up	Metapattern. Simple hierarchy of numeric facts with a roll up type of computation. Computation where A + B + n = Total.
BUC04	Nested Roll Up	Variation of roll up. Nesting one roll up inside another roll up.
BUC05	Inverted Roll Up	Variation of roll up. Multi-level nested roll up. Multiple levels of nested roll ups.
BUC06	Multiple Roll Ups	Variation of roll up. One total rolled up in more than one way forcing roll ups to be expressed within separate networks.
BUC07	Simple Roll Forward	Metapattern. Simple roll forward of one balance. Also known as movement analysis. Reconciles the changes between two balances, beginning balance + changes = ending balance.
BUC08	Complex Roll Forward	Variation of Roll Forward. Roll forward of multiple balances which roll up.
BUC09	Simple Compound Fact	Metapattern. Set of facts which go together to form a compound fact. Facts are held together by an axis.
BUC10	Repeating Fact	Variation of Compound Fact. Similar to simple compound fact, points out that fact can repeat.
BUC11	Multiple Periods Compound Fact	Variation of Compound Fact. Simple compound fact which has more than one period disclosed within the compound fact.
BUC12	Roll Forward in Compound Fact	Variation of Roll Forward. Roll forward within a compound fact.
BUC13	Nested Compound Fact	Variation of Compound Fact. Compound fact nested within another compound fact.

#	Title	Description
BUC14	Reconciliation of Balance	Variation of Roll Up. Reconciliation of a balance with another balance. (Note that this is not a roll forward.)
BUC15	Adjustment	Metapattern. Reconciles an originally stated balance to a restated balance, the adjustment being the total change, between two different report dates such as a prior period adjustment.
BUC16	Variance	Metapattern. Reconciles some reporting scenario with another reporting scenario, the variance between reporting scenarios being the variance or changes such as the variance between actual and budget.
BUC17	Complex Computation	Metapattern. A complex computation information model can be thought of as a hierarchy plus a set of commutations between different concepts within that hierarchy which are challenging to model as the parent/child relations.
BUC24	Text Block	Metapattern. Modelling of what could be modelled as some other information model as one fact. By definition a text block is one fact.
BUC25	Prose	Variation of text block. Information which contains multiple paragraphs, schedules, lists etc. which should appear in a particular order or sequence to be meaningful.
BUC26	Escaped XHTML	Variation of text block. Same as prose or text block. Points out how escaped XHTML can be used to report a fact or set of facts.
BUC27	Using JSON	Variation of text block. Same information contained in the simple compound fact expressed using the JSON syntax.
BUC28	General Comment	A comment or footnote which expands on or provided additional information for some reported fact.
BUC30	Classes	Shows how concepts can be related to other concepts and points out the differences between modelling something as a concept and as the member of an axis.
BUC31	Class Properties	Shows how concepts related to other concepts can be expressed making the use of an [Axis].
BUC32	Grid	A grid information model is a pseudo metapattern which uses the presentation characteristics of the columns and rows of a table to model information. (Not recommended)
BUC34	Pivot Table	A set of facts comprised of a single concept which is characterized by one or more axis. Information set is similar to a pivot table.
BUC35	Grouped Report	Variation of Compound Fact. Table which contains multiple axis which are used to provide information for a complex information set.

#	Title	Description
BUC36	Flow	Shows the notion of flow or ordering/sequencing of different tables within a business report and how the ordering or sequencing is important and can be achieved.
BUC41	Restatement	Financial reporting use case of a restatement of income resulting from prior period error or change in accounting policy.
BUC42	Reissue Report	Financial reporting use case of the reissuance of a report which has already been issued.
BUC43	Reclassification	Financial reporting use case of the reclassification of prior period line items of a report to conform to current period classifications.
BUC44	Reason Not Reported	A specific type of comment or footnote which explains why a fact has not been reported. Points out that footnotes can be differentiated using roles.
BUC99	Non Financial Information	Shows that there is no difference between expressing financial and non-financial information.

[CSH: Add domain partition aggregation model use case examples.]

8.1. Business Use Case Documentation

The following is an overview of what is provided for each business use case in the next section which covers each use case in detail.

- **Visual Example**: The visual example provides a common rendering of the information articulated by the use case. This is a rendering is what the business use case might look like on paper.
- **Metapatterns employed**: The metapatterns employed section provides a summary of the one or more metapatterns which are employed within the business use case.
- **Description**: The description provides a brief, concise narrative of the business use case and key points which we would like to bring to your attention.
- **Overview of report elements and relations**: An overview visualization of the report elements and relations of the business use case.
- **Important characteristics and dynamics**: The important characteristics section provides a summary of the important characteristics and dynamics which you should be focused on when looking at the specific business use case. This section focuses on and points out subtle, intimate details of the business use case and how it is different from other use cases.
- **Basic automated rendering**: The automated rendering provides rendering of the information in its basic form sans any unnecessary presentation. Different preparers and consumers of information may have different preferences; however the basic model of the information should be understandable to everyone. Meeting each possible preference is not the goal here, showing a basic understandable rendering of the model is what is shown. Multiple renderings are shown using freely available rendering solftware.

The documentation in this section is not intended to provide all the details of each business use case. For the details one must rely on the actual XBRL instance, XBRL taxonomy, and other supporting files. The information above is intended to provide the key information which is helpful in grasping the essential understanding from the documentation which will help you dig into the details within the actual files.

8.2. Business Use Case Files and Reports

All the additional details are provided in physical files which can be read in place on the web or downloaded and used locally. The following URL provides a summary of all business use cases in a number of forms including a readable HTML page, an RSS feed for creating an automated process for reading the files and a ZIP archive for downloading all business use cases. This information can be found here:

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/Index.html

This is an explanation of the information for each business use case which can be found by clicking on each use case and following it to the index file for that use case which looks like the following (this shows the *Simple Roll Up* business use case as an example of each use case):

Business Use Case: Simple Roll Up

#	Item	Description
A.	Use Case Name	**SimpleRollUp**
B.	Description	Metapattern. Simple hierarchy of numeric facts with a roll up type of computation. Computation where A + B + n = Total.
C.	Visual example	**Sample Company** **December 31,** **(thousands of dollars)** 2010 2009 **ASSETS** **Property, Plant, and Equipment, Net** Land 5,347 1,147 Buildings, Net 244,508 366,375 Furniture and Fixtures, Net 34,457 34,457 Computer Equipment, Net 4,169 5,313 Other Property, Plant, and Equipment, Net 6,702 6,149 Property, Plant and Equipment, Net, Total 295,183 413,441
D.	Visual example file	PDF | JPEG
E.	Report elements	HTML | XML Infoset
F.	Report element relations	XSD | Relations (HTML) | Relations Infoset (XML)
G.	Report	XBRL | Fact Tables (HTML)| Fact Table Infoset (XML)| Fact Table Rendering (HTML)
H.	Business rules	XBRL Formulas | XBRL Formulas Valiation Results | Business rules (HTML) | XBRL Calculation validation results
I.	XBRL technical syntax validation (double check)	HTML (UBmatrix) | HTML (XBRL Cloud)
J.	Recap/Examination prototype tool/viewer	HTML
K.	ZIP Archieve with All Files	ZIP

This is an explanation of each item on the index page:

A. **Use Case Name**: Provides the unique name of the business use case.

B. **Description**: Provides a concise description of the business use case. Also indicates if the use case is a metapattern, a variation of a metapattern, or other useful information.

C. **Visual example**: Provides a JPEG image for the business use case.

D. **Visual example file**: Provides links to PDF and JPEG versions of the visual example of the business use case.

E. **Report elements**: Provides a human readable HTML version and an computer readable XML version of the report elements of the business use case.

F. **Report element relations**: Provides a link to the taxonomy schema file (XSD) of the XBRL taxonomy. Note that all other files are linked to that taxonomy schema and will be read by loading that file. Also provided are an HTML rendering of the relations between the report elements and a computer readable XML version of those relations.

G. **Report**: Provides a link to the XBRL instance file, a human readable HTML version of the fact tables within that business use case, a computer readable XML version of the fact table, and a prototype HTML version of the rendering of that fact table.

H. **Business Rules**: Provides business rules for use case including XBRL Formula file, XBRL Formula validation results (HTML), business rules in human readable form (HTML), and XBRL calculation validation results (HTML).

I. **XBRL technical syntax validation results**: Provides XBRL technical syntax validation results (XBRL instance, XBRL taxonomy, XBRL Dimensions, XBRL calculations) from two software vendors; UBmatrix and XBRL Cloud (as a double-check).

J. **Recap/Examination prototype tool/viewer**: Provides a battery of reports which organize the information above into an easier to read format.

K. **ZIP Archive with all files**: Provides a ZIP archive of all the files above for easy download.

8.3. Background Understanding Required

Trying to work with these business use cases without the proper background material would be like trying to learn about algebra or geometry without understanding the notion of what a number is, not understanding how to count, and not understanding the basics of mathematics. There are steps in the learning process and you cannot skip any steps. Another way to say this is that there are no short cuts.

To get the most out of these business use cases it is important to work through certain information as necessary background and foundational material. The following sections are important:

- *Understanding Important Key Terms* as it defines the terminology used throughout the use cases.
- *Overview of Logical Model* as it establishes the logical model used by each business use case.
- *Understanding the Multidimensional Model* as it establishes terminology used by the logical model and logical model report elements.
- *Information Model Metapatterns* is not necessarily required, however this section provides an understanding of the fundamental metapatterns which make up each business use case.
- *Domain Partition Aggregation Models* as this helps understand the relations between the members of a domain of an axis.

Lastly, it is important that the reader understand that there are two important pieces which are not covered by the business use cases. First, each business use case is a small example, consciously created as a standalone unit to make understanding of the use case as easy as possible. However, the different sections of a business report can be related. These relations are covered in the Comprehensive Example section of this document. Second, there are some special or specific modelling considerations which are not addressed within the business use cases. These are all covered in the section *Special or Specific Modelling Considerations*, rather than complicating the business use cases with these ideas.

9. Business Use Cases

This section explores each of the business use cases summarized in the previous section. Please be sure to become familiar with the previous section and the additional background material pointed to in that section.

Keep the following thought in the back of your mind as you work through this material: Mathematics is used in accounting, engineering, medicine, architecture, science, and other domains. Yet mathematics is exactly the same in each domain, it is only applied solving different domain problems. This is likewise the case for the business use cases covered by this section; they are applicable to many types of financial or non financial business reporting.

9.1. BUC01 - Flat Hierarchy

The *Flat Hierarchy* business use case shows how to model information which has no computation type relations but does have some sort of relationship. In this case the hierarchy has only one level, it is flat.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC01-FlatHierarchy/Index.html

9.1.1. Visual Example

Sample Company
For Period Ending December 31,
(thousands of dollars, except number of employees)

	2010	2009	2008	2007	2006
Sales, Net	1,500	1,400	1,300	1,200	1,100
Income (Loss) from Continuing Operations	500	400	300	200	100
Net Income (Loss)	51	41	31	21	11
Cash Flow Provided by (used in) Operating Activities, Net	5,000	4,000	3,000	2,000	1,000
Capital Additions	1,000	650	550	450	350
Average Number of Employees	300	290	280	270	260

9.1.2. Metapattern(s) employed

Hierarchy

9.1.3. Description

Financial highlights reported by an organization are a good example of a flat hierarchy. The key idea here is to show that pieces of information have relationships, but those relationships can be quite basic in nature. In this case some set of numbers is articulated as a flat list of facts which make up the financial highlights an entity desires to disclose.

9.1.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Financial Highlights**	[Network]		
2	**Financial Highlights [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Financial Highlights [Line Items]**	[Line Items]		
6	Financial Highlights [Hierarchy]	[Abstract]		
7	Sales, Net	[Concept] Monetary	For Period	Credit
8	Income (Loss) from Continuing Operations	[Concept] Monetary	For Period	Credit
9	Net Income (Loss)	[Concept] Monetary	For Period	Credit
10	Cash Flow Provided by (Used in) Operating Activities, Net	[Concept] Monetary	For Period	Debit
11	Capital Additions	[Concept] Monetary	For Period	Debit
12	Average Number of Employees	[Concept] Decimal	For Period	

9.1.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- This use case reports six facts for five periods, a total of 30 pieces of information or facts.
- This use case shows all numeric information, although there are two types of numeric information: monetary and pure values.

- The concepts are for the most part unrelated, coming from different parts of a financial statement. By unrelated we mean no numeric relationship or computation and no deeper hierarchy, the information is simply one flat list of facts which are reported.
- The facts reported all relate to the consolidated entity, this is made explicit by the "Legal Entity [Axis]" which has a value of "Consolidated Entity [Member]" for each fact reported.
- The "Financial Highlights [Table]" pulls the one [Axis] and the six concepts which make up the [Line Items] together.
- Note that while not present on the [Table], the "Reporting Entity [Axis]" (i.e. Sample Company) and "Period [Axis]" (the five years shown) do in fact exist; they are required by the XBRL technical syntax.

9.1.6.Basic automated rendering

Prototype rendering:

Fact Group (Combination of Network and Table)	
Network:	Financial Highlights (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/FlatHierarchy/FinancialHighlights)
Table:	Financial Highlights [Table] (pattern:FinancialHighlightsTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember

	brm:PeriodAxis				
brm:ConceptAxis	**2006-01-01/2006-12-31**	**2007-01-01/2007-12-31**	**2008-01-01/2008-12-31**	**2009-01-01/2009-12-31**	**2010-01-01/2010-12-31**
Financial Highlights [Hierarchy]					
Sales, Net	1,100,000	1,200,000	1,300,000	1,400,000	1,500,000
Income (Loss) from Continuing Operations	100,000	200,000	300,000	400,000	500,000
Net Income (Loss)	11,000	21,000	31,000	41,000	51,000
Cash Flow Provided by (Used in) Operating Activities, Net	1,000,000	2,000,000	3,000,000	4,000,000	5,000,000
Capital Additions	350,000	450,000	550,000	650,000	1,000,000
Average Number of Employees	260	270	280	290	300

Firefox XBRL Viewer rendering:

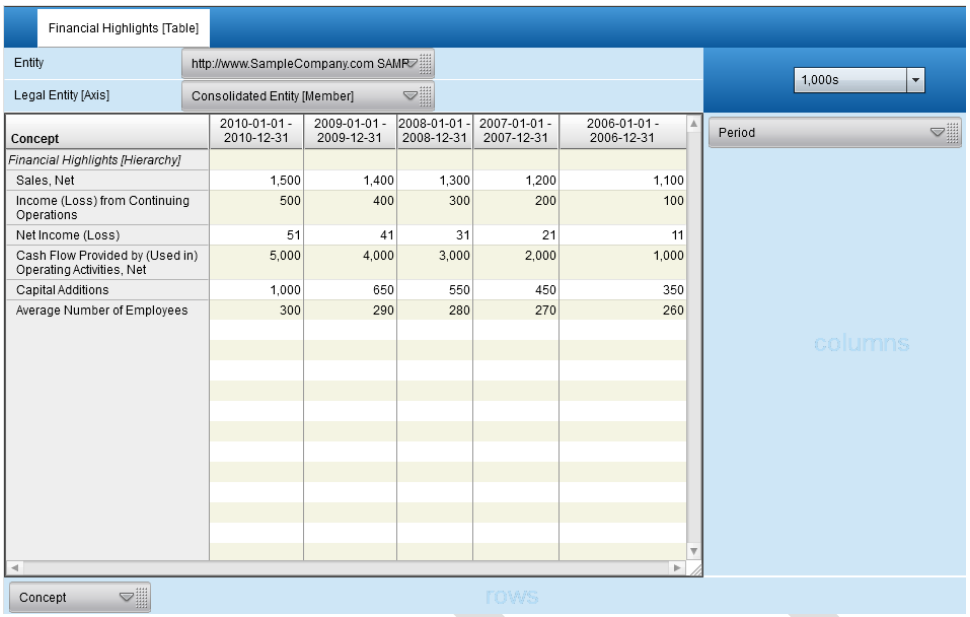
Financial Highlights

IDENTIFIER: SAMP - HTTP://WWW.SAMPLECOMPANY

LEGAL ENTITY [AXIS]: CONSOLIDATED ENTITY [MEMBER]

(IN THOUSANDS)		DATE	12 MONTHS ENDED 2006-12-31	12 MONTHS ENDED 2007-12-31	12 MONTHS ENDED 2008-12-31	12 MONTHS ENDED 2009-12-31	12 MONTHS ENDED 2010-12-31
UNIT	ITEM						
USD	SALES, NET		1,100	1,200	1,300	1,400	1,500
	INCOME (LOSS) FROM CONTINUING OPERATIONS		100	200	300	400	500
	NET INCOME (LOSS)		11	21	31	41	51
	CASH FLOW PROVIDED BY (USED IN) OPERATING ACTIVITIES, NET		1,000	2,000	3,000	4,000	5,000
	CAPITAL ADDITIONS		350	450	550	650	1,000
PURE	AVERAGE NUMBER OF EMPLOYEES		0.26	0.27	0.28	0.29	0.3

XBRL Cloud Viewer rendering:



Concept	2010-01-01 - 2010-12-31	2009-01-01 - 2009-12-31	2008-01-01 - 2008-12-31	2007-01-01 - 2007-12-31	2006-01-01 - 2006-12-31
Financial Highlights [Hierarchy]					
Sales, Net	1,500	1,400	1,300	1,200	1,100
Income (Loss) from Continuing Operations	500	400	300	200	100
Net Income (Loss)	51	41	31	21	11
Cash Flow Provided by (Used in) Operating Activities, Net	5,000	4,000	3,000	2,000	1,000
Capital Additions	1,000	650	550	450	350
Average Number of Employees	300	290	280	270	260

Note that the different viewers put the period in different orders (left to right or right to left).

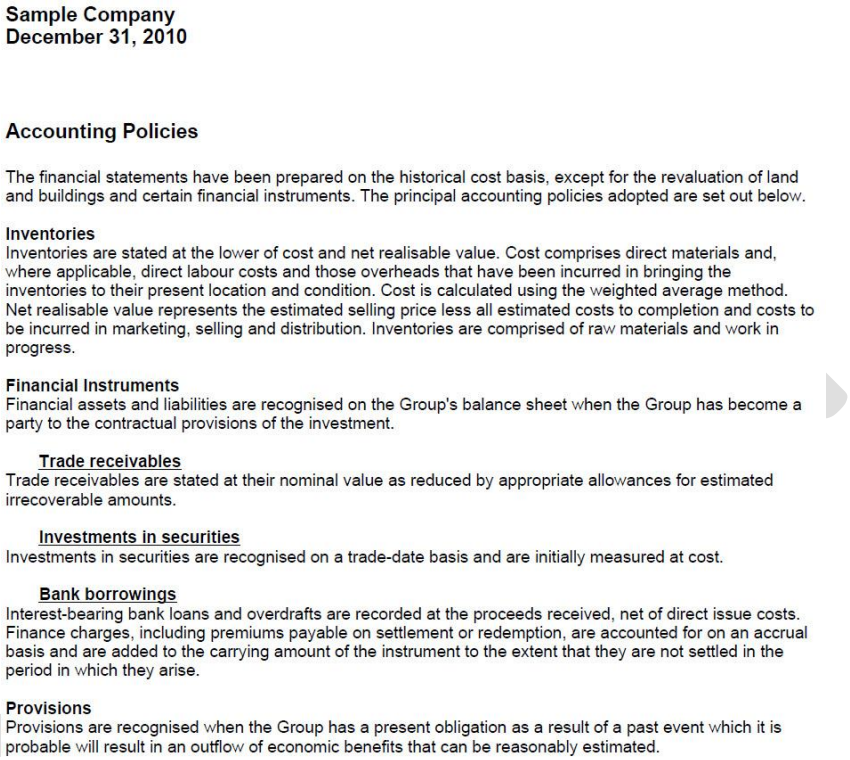
Note that the XBRL Cloud viewer does not make it clear that the Average Number of Employees is (a) a different units and (b) scaled differently.

9.2. BUC02 – Nested Hierarchy

The *Nested Hierarchy* business use case is a variation of a hierarchy. It adds to the flat hierarchy in that it adds an additional layer of nesting or another level to the hierarchy. As you look at the visual example, think about how it looks similar to the outline view of a Microsoft Word document.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC02-NestedHierarchy/Index.html

9.2.1. Visual Example



Sample Company
December 31, 2010

Accounting Policies

The financial statements have been prepared on the historical cost basis, except for the revaluation of land and buildings and certain financial instruments. The principal accounting policies adopted are set out below.

Inventories
Inventories are stated at the lower of cost and net realisable value. Cost comprises direct materials and, where applicable, direct labour costs and those overheads that have been incurred in bringing the inventories to their present location and condition. Cost is calculated using the weighted average method. Net realisable value represents the estimated selling price less all estimated costs to completion and costs to be incurred in marketing, selling and distribution. Inventories are comprised of raw materials and work in progress.

Financial Instruments
Financial assets and liabilities are recognised on the Group's balance sheet when the Group has become a party to the contractual provisions of the investment.

Trade receivables
Trade receivables are stated at their nominal value as reduced by appropriate allowances for estimated irrecoverable amounts.

Investments in securities
Investments in securities are recognised on a trade-date basis and are initially measured at cost.

Bank borrowings
Interest-bearing bank loans and overdrafts are recorded at the proceeds received, net of direct issue costs. Finance charges, including premiums payable on settlement or redemption, are accounted for on an accrual basis and are added to the carrying amount of the instrument to the extent that they are not settled in the period in which they arise.

Provisions
Provisions are recognised when the Group has a present obligation as a result of a past event which it is probable will result in an outflow of economic benefits that can be reasonably estimated.

9.2.2. Metapattern(s) employed

Hierarchy

9.2.3. Description

The *Nested Hierarchy* builds on the *Flat Hierarchy* business use case, introducing the notion that a hierarchy can have one or more sub-hierarchies. There is no way to differentiate the sub-hierarchies into any sort of category or meaning. Another way to say this is that the nesting really has no formal meaning. Many times meaning of the nesting is erroneously implied by model creators or model users.

9.2.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Accounting Policies**	[Network]		
2	**Accounting Policies [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Accounting Policies [Line Items]**	[Line Items]		
6	Accounting Policies [Hierarchy]	[Abstract]		
7	Basis of Presentation [Text Block]	[Concept] Text Block (HTML)	For Period	
8	Basis of Presentation	[Concept] Text/String	For Period	
9	Inventory Policy [Text Block]	[Concept] Text Block (HTML)	For Period	
10	Inventory Valuation Method	[Concept] Text/String	For Period	
11	Description of Inventory Components	[Concept] Text/String	For Period	
12	Inventory Cost Method	[Concept] Text/String	For Period	
13	Description of Net Realizable Value	[Concept] Text/String	For Period	
14	Financial Instruments Policy [Text Block]	[Concept] Text Block (HTML)	For Period	
15	Trade Receivables Policy	[Concept] Text/String	For Period	
16	Investments in Securities Policy	[Concept] Text/String	For Period	
17	Bank Borrowings Policy	[Concept] Text/String	For Period	
18	Provisions Policy	[Concept] Text/String	For Period	

9.2.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- The *Flat Hierarchy* shows a flat hierarchy which contains all numbers. In contrast, *Nested Hierarchy* business use case shows a nested hierarchy of text. There is really very little difference between these two use cases other than the number of nesting levels.
- A hierarchy can be created to any depth, having any number of levels. There are pros and cons to adding or not adding levels.
- When modelling a hierarchy, ask yourself "Why am I making this a child of this concept rather than a sibling?" Some reason to make a concept a child or a sibling of another concept should exist.

9.2.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Accounting Policies (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/NestedHierarchy/AccountingPolicies)
Table:	Accounting Policies [Table] (pattern:AccountingPoliciesTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	None

	brm:PeriodAxis
brm:ConceptAxis	**2010-01-01/2010-12-31**
Accounting Policies [Hierarchy]	
Basis of Presentation [Text Block]	The financial statements have been prepared on the historical cost basis, except for the revaluation of land and buildings and certain financial instruments. The principal accounting policies adopted are set out below.
Basis of Presentation	Historical Cost
Inventory Policy [Text Block]	Inventories are stated at the lower of cost and net realisable value. Cost comprises direct materials and, where applicable, direct labour costs and those overheads that have been incurred in bringing the inventories to their present location and condition. Cost is calculated using the weighted average method. Net realisable value represents the estimated selling price less all estimated costs to completion and costs to be incurred in marketing, selling and distribution. Inventories are comprised of raw materials and work in progress.
Inventory Valuation Method	Cost
Description of Inventory Components	weighted average method
Inventory Cost Method	FIFO
Description of Net Realizable Value	This is the description of the net realizable value.
Financial Instruments Policy [Text Block]	Financial assets and liabilities are recognised on the Group's balance sheet when the Group has become a party to the contractual provisions of the investment.
Trade Receivables Policy	Trade receivables are stated at their nominal value as reduced by appropriate allowances for estimated irrecoverable amounts.
Investments in Securities Policy	Investments in securities are recognised on a trade-date basis and are initially measured at cost.
Bank Borrowings Policy	Interest-bearing bank loans and overdrafts are recorded at the proceeds received, net of direct issue costs. Finance charges, including premiums payable on settlement or redemption, are accounted for on an accrual basis and are added to the carrying amount of the instrument to the extent that they are not settled in the period in which they arise.
Provisions Policy	Provisions are recognised when the Group has a present obligation as a result of a past event which it is probable will result in an outflow of economic benefits that can be reasonably estimated.

9.3. BUC03 - Simple Roll Up

The *Simple Roll Up* business use case shows how to model what is commonly referred to as a roll up. A roll up is simply two or more concepts which add up to a third concept: Concept A + Concept B + "*n* concept"= Total concept.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC03-SimpleRollUp/Index.html

9.3.1. Visual Example

Sample Company
December 31,
(thousands of dollars)

	2010	2009
ASSETS		
Property, Plant, and Equipment, Net		
Land	5,347	1,147
Buildings, Net	244,508	366,375
Furniture and Fixtures, Net	34,457	34,457
Computer Equipment, Net	4,169	5,313
Other Property, Plant, and Equipment, Net	6,702	6,149
Property, Plant and Equipment, Net, Total	295,183	413,441

9.3.2. Metapattern(s) employed

Roll Up

9.3.3. Description

The *Roll Up* business use case introduces the notion of numeric relations between concepts. In the case of a *Roll Up* computation, several concepts add up to some total concept. Basically, a *Roll Up* builds on a *Hierarchy* in that it adds the business rules of the computation to the hierarchy of concepts. Roll ups can be expressed using XBRL calculations.

9.3.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Property, Plant, and Equipment, by Component**	[Network]		
2	**Property, Plant and Equipment, by Component [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Property, Plant and Equipment, by Component [Line Items]**	[Line Items]		
6	Property, Plant and Equipment, Net [Roll Up]	[Abstract]		
7	Land	[Concept] Monetary	As Of	Debit
8	Buildings, Net	[Concept] Monetary	As Of	Debit
9	Furniture and Fixtures, Net	[Concept] Monetary	As Of	Debit
10	Computer Equipment, Net	[Concept] Monetary	As Of	Debit
11	Other Property, Plant and Equipment, Net	[Concept] Monetary	As Of	Debit
12	Property, Plant and Equipment, Net, Total	[Concept] Monetary	As Of	Debit

9.3.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- A Roll Up articulates the relations: A + B + *n* = Total, where *n* means any number of concepts.
- A Roll Up may have only one total concept.

- The relation may be + or – (plus or minus).
- Notice that all of the concepts in this *Roll Up* business use case have a balance type of DEBIT.
- The business rules for a roll up can also be expressed using XBRL formula. One advantage of using XBRL formula is that a tolerance can be added to the computation.

9.3.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Property, Plant, and Equipment, by Component (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/SimpleRollUp/PropertyPlantAndEquipmentByComponent)
Table:	Property, Plant and Equipment, by Component [Table] (pattern:PropertyPlantEquipmentByComponentTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	iso4217:USD

	brm:PeriodAxis	
brm:ConceptAxis	2009-12-31	2010-12-31
Property, Plant and Equipment, Net [Roll Up]		
Land	1,147,000	5,347,000
Buildings, Net	366,375,000	244,508,000
Furniture and Fixtures, Net	34,457,000	34,457,000
Computer Equipment, Net	5,313,000	4,169,000
Other Property, Plant and Equipment, Net	6,149,000	6,702,000
Property, Plant and Equipment, Net, Total	413,441,000	295,183,000

9.4. BUC04 - Nested Roll Up

The *Nested Roll Up* business use case is a variation of the *Roll Up* business use case where one or more additional roll ups are contained within another roll up, effectively nesting roll ups.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC04-NestedRollUp/Index.html

9.4.1. Visual Example

Sample Company
December 31,
(thousands of dollars)

		As of December 31,	
		2010	2009
CURRENT			
Foreign		200	250
Domestic		50	250
	Current	250	500
DEFERRED			
Foreign		200	250
Domestic		50	250
	Deferred	250	500
	Income Tax Expense (Benefit)	500	1,000

9.4.2. Metapattern(s) employed

Roll Up

9.4.3. Description

A *Nested Roll Up* builds on the *Roll Up* showing that a Roll Up may contain other *Roll Ups*. Nested roll ups can be looked at as basically sub totals. In this example, the grand total Income Tax Expense (Benefit) is broken down by the sub totals Current and Deferred. Each of those sub totals is broken down by its Foreign and Domestic components.

Alternatively, the sub totals could have been Foreign and Domestic with those sub totals then broken down by their Current and Deferred components. Or, both of these breakdowns could have been provided, see the *Multiple Roll Ups* use case.

9.4.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Income Tax Expense (Benefit)**	[Network]		
2	**Income Tax Expense (Benefit), by Component [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Income Tax Expense (Benefit) [Line Items]**	[Line Items]		
6	Income Tax Expense (Benefit) [Roll Up]	[Abstract]		
7	Income Tax Expense (Benefit), Current [Roll Up]	[Abstract]		
8	Income Tax Expense (Benefit), Current, Foreign	[Concept] Monetary	For Period	Debit
9	Income Tax Expense (Benefit), Current, Domestic	[Concept] Monetary	For Period	Debit
10	Income Tax Expense (Benefit), Current	[Concept] Monetary	For Period	Debit
11	Income Tax Expense (Benefit), Deferred [Roll Up]	[Abstract]		
12	Income Tax Expense (Benefit), Deferred, Foreign	[Concept] Monetary	For Period	Debit
13	Income Tax Expense (Benefit), Deferred, Domestic	[Concept] Monetary	For Period	Debit
14	Income Tax Expense (Benefit), Deferred	[Concept] Monetary	For Period	Debit
15	Income Tax Expense (Benefit), Total	[Concept] Monetary	For Period	Debit

9.4.5.Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- A *Roll Up* can have another *Roll Up* nested within it.
- Any depth of nesting is allowed.
- Alternatively, the subtotal could have been foreign/domestic and the breakdown current/deferred; however, a choice was made here to provide only this subtotalling. Another alternative would be to provide both approaches to totalling the information.

9.4.6.Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Income Tax Expense (Benefit) (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/NestedRollUp/IncomeTaxExpenseBenefit)
Table:	Income Tax Expense (Benefit), by Component [Table] (pattern:IncomeTaxExpenseBenefitByComponentTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	iso4217:USD

	brm:PeriodAxis	
brm:ConceptAxis	2009-01-01/2009-12-31	2010-01-01/2010-12-31
Income Tax Expense (Benefit) [Roll Up]		
Income Tax Expense (Benefit), Current [Roll Up]		
Income Tax Expense (Benefit), Current, Foreign	250,000	200,000
Income Tax Expense (Benefit), Current, Domestic	250,000	50,000
Income Tax Expense (Benefit), Current	500,000	250,000
Income Tax Expense (Benefit), Deferred [Roll Up]		
Income Tax Expense (Benefit), Deferred, Foreign	250,000	200,000
Income Tax Expense (Benefit), Deferred, Domestic	250,000	50,000
Income Tax Expense (Benefit), Deferred	500,000	250,000
Income Tax Expense (Benefit), Total	1,000,000	500,000

9.5. BUC05 - Inverted Roll Up

The *Inverted Roll Up* business use case points out that roll ups can appear to be inverted. This business use case is really no different than a Roll Up other than it has a number of nested roll ups creating what amounts to a very deep nesting.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC05-InvertedRollUp/Index.html

9.5.1. Visual Example

Sample Company
December 31,
(thousands of dollars)

	For Year Ended December 31,	
	2010	**2009**
Revenues, Gross	1,000	2,000
Returns and Allowances	-1,000	-2,000
Revenues, Net	0	0
Cost of Sales	-1,000	-2,000
Gross Profit (Loss)	-1,000	-2,000
Other Operating Expenses	-1,000	-2,000
Other Operating Income	1,000	2,000
Operating Income (Loss)	-1,000	-2,000
Nonoperating Expenses (Income)	1,000	2,000
Income (Loss) from Continuing Operations Before Income Taxes	0	0
Income Tax Expense (Benefit)	1,000	2,000
Net Income (Loss)	-1,000	-2,000

9.5.2. Metapattern(s) employed

Roll Up

9.5.3. Description

An *Inverted Roll Up* again builds on the *Roll Up* and *Nested Roll U*p showing what amounts to a more complex nesting which makes the *Roll Up* look inverted, or up-side-down.

The presentation of the information articulated within a Roll Up is dependent on the software application which is generating the presentation. There is nothing in XBRL which says Roll Ups need to be presented up-side-down. However, many software interfaces do work this way.

9.5.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Income Statement**	[Network]		
2	**Income Statement [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Income Statement [Line Items]**	[Line Items]		
6	Net Income (Loss) [Roll Up]	[Abstract]		
7	Income (Loss) from Continuing Operations Before Income Taxes [Roll Up]	[Abstract]		
8	Operating Income (Loss) [Roll Up]	[Abstract]		
9	Gross Profit (Loss) [Roll Up]	[Abstract]		
10	Revenues, Net [Roll Up]	[Abstract]		
11	Revenues, Gross	[Concept] Monetary	For Period	Credit
12	Returns and Allowances	[Concept] Monetary	For Period	Debit
13	Revenues, Net	[Concept] Monetary	For Period	Credit
14	Cost of Sales	[Concept] Monetary	For Period	Debit
15	Gross Profit (Loss)	[Concept] Monetary	For Period	Credit
16	Other Operating Income	[Concept] Monetary	For Period	Credit
17	Other Operating Expenses	[Concept] Monetary	For Period	Debit
18	Operating Income (Loss)	[Concept] Monetary	For Period	Credit
19	Nonoperating Income (Loss)	[Concept] Monetary	For Period	Credit
20	Income (Loss) from Continuing Operations Before Income Taxes	[Concept] Monetary	For Period	Credit
21	Income Tax Expense (Benefit)	[Concept] Monetary	For Period	Debit
22	Net Income (Loss)	[Concept] Monetary	For Period	Credit

9.5.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- There is no real difference between a *Roll Up*, a *Nested Roll Up*, and an *Inverted Roll Up* other than the number of nesting levels.
- Notice in this use case that the concepts are both debits and credits. The weight in the XBRL calculations determines whether the relation is additive or subtractive in nature.
- There is a relation between the balance type of a concept and the weight which is used when expressing an XBRL calculation. There is no relation between the balance type and the presentation of the concept as positive or negative. Many business users get confused by this and believe that there is a relation.
- Software interfaces are free to present information as positive or negative. Automated processes need clarity about the polarity of numeric values relative to other numeric values.
- Numeric concepts which do not have a balance type must have the polarity of the concept defined within the concept's documentation to make the polarity clear.
- Creators of a taxonomy can use different preferred label roles to help indicate how a software application should render the information, helping to make the choice to show either a positive or negative value.

9.5.6.Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Income Statement (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/InvertedRollUp/IncomeStatement)
Table:	Income Statement [Table] (pattern:IncomeStatementTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	iso4217:USD

	brm:PeriodAxis	
brm:ConceptAxis	**2009-01-01/2009-12-31**	**2010-01-01/2010-12-31**
Net Income (Loss) [Roll Up]		
Income (Loss) from Continuing Operations Before Income Taxes [Roll Up]		
Operating Income (Loss) [Roll Up]		
Gross Profit (Loss) [Roll Up]		
Revenues, Net [Roll Up]		
Revenues, Gross	2,000,000	1,000,000
Returns and Allowances	2,000,000	1,000,000
Revenues, Net	0	0
Cost of Sales	2,000,000	1,000,000
Gross Profit (Loss)	(2,000,000)	(1,000,000)
Other Operating Income	2,000,000	1,000,000
Other Operating Expenses	2,000,000	1,000,000
Operating Income (Loss)	(2,000,000)	(1,000,000)
Nonoperating Income (Loss)	2,000,000	1,000,000
Income (Loss) from Continuing Operations Before Income Taxes	0	0
Income Tax Expense (Benefit)	2,000,000	1,000,000
Net Income (Loss)	(2,000,000)	(1,000,000)

9.6. BUC06 - Multiple Roll Ups

The *Multiple Roll Ups* business use case is a variation of a Roll Up where one concept is the total concept of two or more unique Roll Ups. Basically because the one total concept aggregates in more than one way, then multiple networks must be used to separate the roll ups.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC06-MultipleRollUps/Index.html

9.6.1. Visual Example

Sample Company
December 31,
(thousands of dollars)

	2010	2009
TRADE AND OTHER RECEIVABLES		
Trade and Other Receivables, Net, by Component		
Trade Receivables, Net	8,790	6,431
Financing Lease Receivables, Net	2,498	1,263
Other Receivables, Net	1,305	1,096
Trade and Other Receivables, Net	12,593	8,790
Trade and Other Receivables, Net, by Net/Gross		
Trade and Other Receivables, Gross	18,280	13,472
Allowance for Doubtfull Accounts	-5,687	-4,682
Trade and Other Receivables, Net	12,593	8,790
Trade and Other Receivables, Net, by Current/Noncurrent		
Trade Receivables, Net, Current	6,340	5,701
Trade Receivables, Net, Noncurrent	6,253	3,089
Trade and Other Receivables, Net	12,593	8,790

9.6.2. Metapattern(s) employed

Roll Up

9.6.3. Description

The *Multiple Roll Ups* business use case points out that a concept might have any number of ways to break down a total concept. To avoid conflicts, these different computations need to be (i.e. MUST be) separated into different networks. Networks can be thought of in the same way that broadcast networks send signals using different frequencies in order to separate the different television channels so the signals do not conflict. In this example, Trade and Other Receivables, Net is aggregated in three different ways: by component, by net/gross, and by current/noncurrent.

9.6.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Trade and Other Receivables, Net, by Component**	[Network]		
2	**Trade and Other Receivables, Net, by Component [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Trade and Other Receivables, Net, by Component [Line Items]**	[Line Items]		
6	Trade and Other Receivables, Net [Roll Up]	[Abstract]		
7	Trade Receivables, Net	[Concept] Monetary	As Of	Debit
8	Financing Lease Receivables, Net	[Concept] Monetary	As Of	Debit
9	Other Receivables, Net	[Concept] Monetary	As Of	Debit
10	Trade and Other Receivables, Net	[Concept] Monetary	As Of	Debit
10	**Trade and Other Receivables, Net, by Current/Noncurrent**	[Network]		
11	**Trade and Other Receivables, Net, by Current/Noncurrent [Table]**	[Table]		
12	**Legal Entity [Axis]**	[Axis]		
13	Consolidated Entity [Member]	[Member]		
14	**Trade and Other Receivables, Net, by Current/Noncurrent [Line Items]**	[Line Items]		
15	Trade and Other Receivables, Net, by Current/Noncurrent [Roll Up]	[Abstract]		
16	Trade and Other Receivables, Net, Current	[Concept] Monetary	As Of	Debit
17	Trade and Other Receivables, Net, Noncurrent	[Concept] Monetary	As Of	Debit
18	Trade and Other Receivables, Net	[Concept] Monetary	As Of	Debit
18	**Trade and Other Receivables, Net, by Net/Gross**	[Network]		
19	**Trade and Other Receivables, Net, by Net/Gross [Table]**	[Table]		
20	**Legal Entity [Axis]**	[Axis]		
21	Consolidated Entity [Member]	[Member]		
22	**Trade and Other Receivables, Net, by Net/Gross [Line Items]**	[Line Items]		
23	Trade and Other Receivables, Net, by Net/Gross [Roll Up]	[Abstract]		
24	Trade and Other Receivables, Gross	[Concept] Monetary	As Of	Debit
25	Allowance for Doubtfull Accounts	[Concept] Monetary	As Of	Credit
26	Trade and Other Receivables, Net	[Concept] Monetary	As Of	Debit

9.6.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- Different aggregations of the same number need to be put into separate and distinct networks in order to avoid modelling conflicts.
- Be sure to keep the presentation, calculation, and definition networks synchronized in order to be clear as to which set of aggregations go with which set of breakdowns (i.e. presentation, calculation, definition for each set should be the same network role).

9.6.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Trade and Other Receivables, Net, by Component (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/MultipleRollUps/ByComponent)
Table:	Trade and Other Receivables, Net, by Component [Table] (pattern:TradeOtherReceivablesNetByComponentTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	iso4217:USD

	brm:PeriodAxis	
brm:ConceptAxis	**2009-12-31**	**2010-12-31**
Trade and Other Receivables, Net [Roll Up]		
Trade Receivables, Net	6,431,000	8,790,000
Financing Lease Receivables, Net	1,263,000	2,498,000
Other Receivables, Net	1,096,000	1,305,000
Trade and Other Receivables, Net	8,790,000	12,593,000

Fact Group (Combination of Network and Table)	
Network:	Trade and Other Receivables, Net, by Net/Gross (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/MultipleRollUps/ByNetGross)
Table:	Trade and Other Receivables, Net, by Net/Gross [Table] (pattern:TradeOtherReceivablesNetByNetGrossTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	iso4217:USD

	brm:PeriodAxis	
brm:ConceptAxis	2009-12-31	2010-12-31
Trade and Other Receivables, Net, by Net/Gross [Roll Up]		
Trade and Other Receivables, Gross	13,472,000	18,280,000
Allowance for Doubtfull Accounts	4,682,000	5,687,000
Trade and Other Receivables, Net	8,790,000	12,593,000

Fact Group (Combination of Network and Table)	
Network:	Trade and Other Receivables, Net, by Current/Noncurrent (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/MultipleRollUps/ByCurrentNoncurrent)
Table:	Trade and Other Receivables, Net, by Current/Noncurrent [Table] (pattern:TradeOtherReceivablesNetByCurrentNoncurrentTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	iso4217:USD

	brm:PeriodAxis	
brm:ConceptAxis	2009-12-31	2010-12-31
Trade and Other Receivables, Net, by Current/Noncurrent [Roll Up]		
Trade and Other Receivables, Net, Current	5,701,000	6,340,000
Trade and Other Receivables, Net, Noncurrent	3,089,000	6,253,000
Trade and Other Receivables, Net	8,790,000	12,593,000

9.7. BUC07 - Simple Roll Forward

The *Simple Roll Forward* business use case shows how to model a very common information model found in financial reporting: the roll forward or sometimes called a movement analysis. A roll forward reconciles an ending balance with a beginning balance via one or more changes in the balance. The business rule equation for a roll forward is: beginning balance + changes to the balance = ending balance.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC07-SimpleRollForward/Index.html

9.7.1. Visual Example

Sample Company
December 31,
(thousands of dollars)

	2010	2009
Roll Forward of Land		
Land, Beginning Balance	1,147	1,147
Additions	1,992	400
Disposals	-193	-200
Translation difference	2,401	-200
Land, Ending Balance	5,347	1,147

9.7.2. Metapattern(s) employed

Roll Forward, Roll up

9.7.3. Description

The *Simple Roll Forward* introduces a different type of computation, different from the *Roll Up*. A *Roll Forward* is a reconciliation of a balance between two different points in time (i.e. *Period [Axis]*). The equation of a roll forward is: Beginning balance + Changes = Ending Balance. The beginning and ending balance is always the same concept at two different points in time, period is different for the two balances. The changes relate to the period between the two balances. The data types of all concepts involved in a roll forward are the same.

A roll forward can contain only one change represented by a total concept. That total could be represented by a roll up which breaks down the details of the changes. In this business use case there is one change concept and the details of the changes aggregate to that total using a roll up. The changes is detailed to be Additions, Disposals, and Translation Difference within the roll up of changes. Alternatively, this could have been modelled without the total and Additions, Disposals and Translation Difference would each be changes between the beginning and ending balance. Semantically, the two approaches are equivalent.

9.7.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Roll Forward of Land**	[Network]		
2	**Land Changes [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Land Changes [Line Items]**	[Line Items]		
6	Roll Forward of Land [Roll Forward]	[Abstract]		
7	Land, Beginning Balance	[Concept] Monetary	As Of	Debit
8	Land, Period Increase (Decrease), Total [Roll Up]	[Abstract]		
9	Land, Additions	[Concept] Monetary	For Period	Debit
10	Land, Disposals	[Concept] Monetary	For Period	Credit
11	Land, Translation Difference	[Concept] Monetary	For Period	Debit
12	Land, Period Increase (Decrease), Total	[Concept] Monetary	For Period	Debit
13	Land, Ending Balance	[Concept] Monetary	As Of	Debit

9.7.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- A *Roll Forward* always reconciles a concept balance between two different points in time. The balance is always an instant, the changes are always durations or for some period of time.
- A *Roll Forward* computation cannot be expressed using XBRL calculations because all XBRL calculations must be within the exact same context. The balance concept is at two different points in time, therefore two different contexts. Further, the changes are in a third context.
- XBRL Formulas can be used to create a business rule to validate a *Roll Forward* computation.
- There are two approaches to showing the polarity of the numbers for the changes of a roll forward. One approach is for the rendering engine to leverage the balance attribute value to determine if it should be shown as a positive or negative. A second approach, required if the concepts have no balance attribute, is to use a negated label role to indicate that the sign of a presented change should be flipped.

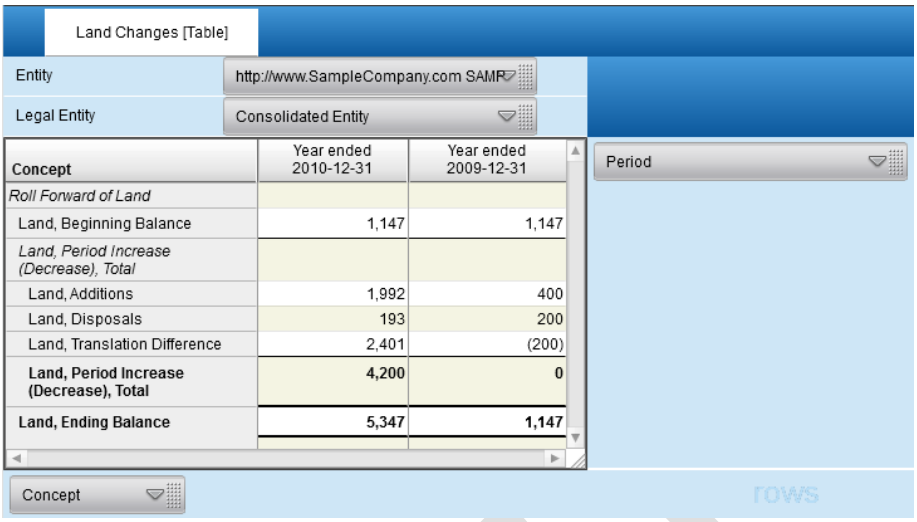
9.7.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Roll Forward of Land (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/SimpleRollForward/RollForwardOfLand)
Table:	Land Changes [Table] (pattern:LandChangesTable)

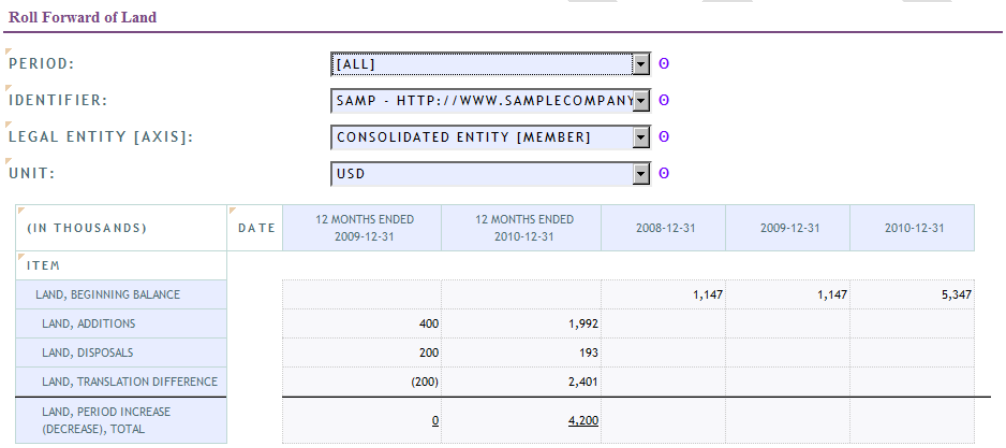
Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	iso4217:USD

brm:ConceptAxis	brm:PeriodAxis	brm:FactValue
Roll Forward of Land [Roll Forward]		
Land, Beginning Balance	2008-12-31	1,147,000
Land, Period Increase (Decrease), Total [Roll Up]		
Land, Additions	2009-01-01/2009-12-31	400,000
Land, Disposals	2009-01-01/2009-12-31	(200,000)
Land, Translation Difference	2009-01-01/2009-12-31	(200,000)
Land, Period Increase (Decrease), Total	2009-01-01/2009-12-31	0
Land, Ending Balance	2009-12-31	1,147,000
Roll Forward of Land [Roll Forward]		
Land, Beginning Balance	2009-12-31	1,147,000
Land, Period Increase (Decrease), Total [Roll Up]		
Land, Additions	2010-01-01/2010-12-31	1,992,000
Land, Disposals	2010-01-01/2010-12-31	(193,000)
Land, Translation Difference	2010-01-01/2010-12-31	2,401,000
Land, Period Increase (Decrease), Total	2010-01-01/2010-12-31	4,200,000
Land, Ending Balance	2010-12-31	5,347,000

Note that the rendering above puts each period's roll forward one on top of the other. Also note that the balance attribute was used to properly format the numbers as positive or negative within the roll forward rendering.



Above is another approach to rendering a roll forward, this time side-by-side. Again, the balance attribute was used to render the numbers correctly.



Above is a third rendering of the same roll forward. Note that the rendering is not what you would have expected. This is because the rendering application does not take advantage of an understanding of the roll forward information model to format the rendering as you would expect to see it. Secondly, the rending application does not leverage the metadata of the information being presented, in this case the balance attribute value.

In the third rendering, all the information is presented, but not in a format which allows the consumer of the information to easily read the information.

The point here is that the renderings are determined by two things. First, the metadata available to be leveraged and second, the rendering applications use of that metadata in generating that rendering.

9.8. BUC08 - Complex Roll Forward

The *Complex Roll Forward* business use case shows how to model what amounts to several *Roll Forwards* combined into one set of information.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC08-ComplexRollForward/Index.html

9.8.1. Visual Example

Sample Company
December 31,
(thousands of dollars)

	Land	Buildings, Net	Furniture and Fixtures, Net	Other Property, Plant, and Equipment, Net	Property, Plant, and Equipment, Net
Balance at December 31, 2008	1,000	1,000	1,000	1,000	4,000
Additions	1,000	1,000	1,000	1,000	4,000
Disposals	-1,000	-1,000	-1,000	-1,000	-4,000
Translation Difference	0	0	0	0	0
Other Increase (Decrease)	0	0	0	0	0
Balance at December 31, 2009	1,000	1,000	1,000	1,000	4,000
Additions	1,000	1,000	1,000	1,000	4,000
Disposals	-1,000	-1,000	-1,000	-1,000	-4,000
Translation Difference	0	0	0	0	0
Other Increase (Decrease)	0	0	0	0	0
Balance at December 31, 2010	1,000	1,000	1,000	1,000	4,000

9.8.2. Metapattern(s) employed

Roll Forward, Roll up

9.8.3. Description

The *Complex Roll Forward* builds on the *Simple Roll Forward*, adding multiple *Roll Forwards* which then aggregate to a *Roll Forward* of the total. In the example, *Roll Forwards* for Land; Buildings, Net; Furniture and Fixtures, Net; Other Property, Plant and Equipment, Net aggregate to the *Roll Forward* of the total Property, Plant and Equipment.

Note the roll ups, expressed as XBRL calculations, which tie the individual roll forwards to the total roll forward.

9.8.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Movement in Property, Plant and Equipment, Net**	[Network]		
2	**Movement in Property, Plant and Equipment, Net [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Movement in Property, Plant and Equipment, Net [Line Items]**	[Line Items]		
6	Movement in Land [Roll Forward]	[Abstract]		
7	Land, Beginning Balance	[Concept] Monetary	As Of	Debit
8	Land, Period Increase (Decrease) [Roll Up]	[Abstract]		
9	Land, Additions	[Concept] Monetary	For Period	Debit
10	Land, Disposals	[Concept] Monetary	For Period	Credit
11	Land, Translation Difference	[Concept] Monetary	For Period	Debit
12	Land, Other Increase (Decrease)	[Concept] Monetary	For Period	Debit
13	Land, Period Increase (Decrease)	[Concept] Monetary	For Period	Debit
14	Land, Ending Balance	[Concept] Monetary	As Of	Debit
15	Movement in Buildings, Net [Roll Forward]	[Abstract]		
16	Buildings, Net, Beginning Balance	[Concept] Monetary	As Of	Debit
17	Buildings, Net, Period Increase (Decrease) [Roll Up]	[Abstract]		
18	Buildings, Net, Additions	[Concept] Monetary	For Period	Debit
19	Buildings, Net, Disposals	[Concept] Monetary	For Period	Credit
20	Buildings, Net, Translation Difference	[Concept] Monetary	For Period	Debit
21	Buildings, Net, Other Increase (Decrease)	[Concept] Monetary	For Period	Debit
22	Buildings, Net, Period Increase (Decrease)	[Concept] Monetary	For Period	Debit
23	Buildings, Net, Ending Balance	[Concept] Monetary	As Of	Debit
24	Movement in Furniture and Fixtures, Net [Roll Forward]	[Abstract]		
25	Furniture and Fixtures, Net, Beginning Balance	[Concept] Monetary	As Of	Debit
26	Furniture and Fixtures, Net, Period Increase (Decrease) [Roll Up]	[Abstract]		
27	Furniture and Fixtures, Net, Additions	[Concept] Monetary	For Period	Debit
28	Furniture and Fixtures, Net, Disposals	[Concept] Monetary	For Period	Credit
29	Furniture and Fixtures, Net, Translation Difference	[Concept] Monetary	For Period	Debit
30	Furniture and Fixtures, Net, Other Increase (Decrease)	[Concept] Monetary	For Period	Debit
31	Furniture and Fixtures, Net, Period Increase (Decrease)	[Concept] Monetary	For Period	Debit
32	Furniture and Fixtures, Net, Ending Balance	[Concept] Monetary	As Of	Debit
33	Movement in Other Property, Plant and Equipment, Net [Roll Forward]	[Abstract]		
34	Other Property, Plant and Equipment, Net, Beginning Balance	[Concept] Monetary	As Of	Debit
35	Other Property, Plant and Equipment, Net, Period Increase (Decrease) [Roll Up]	[Abstract]		
36	Other Property, Plant and Equipment, Net, Additions	[Concept] Monetary	For Period	Debit
37	Other Property, Plant and Equipment, Net, Disposals	[Concept] Monetary	For Period	Credit
38	Other Property, Plant and Equipment, Net, Translation Difference	[Concept] Monetary	For Period	Debit
39	Other Property, Plant and Equipment, Net, Other Increase (Decrease)	[Concept] Monetary	For Period	Debit
40	Other Property, Plant and Equipment, Net, Period Increase (Decrease)	[Concept] Monetary	For Period	Debit
41	Other Property, Plant and Equipment, Net, Ending Balance	[Concept] Monetary	As Of	Debit
42	Movement in Property, Plant and Equipment, Net [Roll Forward]	[Abstract]		
43	Property, Plant and Equipment, Net, Beginning Balance	[Concept] Monetary	As Of	Debit
44	Property, Plant and Equipment, Net, Period Increase (Decrease) [Roll Up]	[Abstract]		
45	Property, Plant and Equipment, Net, Additions	[Concept] Monetary	For Period	Debit
46	Property, Plant and Equipment, Net, Disposals	[Concept] Monetary	For Period	Credit
47	Property, Plant and Equipment, Net, Translation Difference	[Concept] Monetary	For Period	Debit
48	Property, Plant and Equipment, Net, Other Increase (Decrease)	[Concept] Monetary	For Period	Debit
49	Property, Plant and Equipment, Net, Period Increase (Decrease)	[Concept] Monetary	For Period	Debit
50	Property, Plant and Equipment, Net, Ending Balance	[Concept] Monetary	As Of	Debit

9.8.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- The *Roll Ups* for the changes can be expressed and validated using XBRL calculations.
- The *Roll Up* of each balance concept for individual classes of Property, Plant and Equipment to the total for Property, Plant and Equipment, Net can likewise be expressed using XBRL calculations. For example: Land + Buildings, Net + Furniture and Fixtures, Net + Other Property, Plant and Equipment, Net = Property, Plant and Equipment, Net for 2008, 2009, and 2010.
- The *Roll Up* of each change can also be expressed. For example, Additions for each class of Property, Plant and Equipment aggregates to the concept for all categories of Property, Plant and Equipment, Net, Additions. This relation can be seen horizontally in the example.

- A business rule expressed using XBRL Formula is used to make sure the roll forward properly reconciles: beginning balance + total changes = ending balance for each class of PPE and for total PPE.
- Note that the classes of Property, Plant and Equipment could have been presented in the rows and the different balances and changes expressed in the columns. Transposing the information in this way does not change the semantics of the information, it is purely the preference of the consumer of the information. Changing the rows and columns would not change how the information is modelled.
- Note that if each class of PPE were modelled as a [Member] the total number of concepts within the model would be significantly reduced.

9.8.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Movement in Property, Plant and Equipment, Net (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/ComplexRollForward/MovementInPropertyPlantAndEquipmentNet)
Table:	Movement in Property, Plant and Equipment, Net [Table] (pattern:MovementInPropertyPlantEquipmentNetTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	iso4217:USD

	brm:PeriodAxis	
brm:ConceptAxis	2009-12-31	2010-12-31
Movement in Land [Roll Forward]		
Land, Beginning Balance	1,000	1,000
Land, Period Increase (Decrease) [Roll Up]		
Land, Additions	1,000	1,000
Land, Disposals	(1,000)	(1,000)
Land, Translation Difference	0	0
Land, Other Increase (Decrease)	0	0
Land, Period Increase (Decrease)	0	0
Land, Ending Balance	1,000	1,000
Movement in Buildings, Net [Roll Forward]		
Buildings, Net, Beginning Balance	1,000	1,000
Buildings, Net, Period Increase (Decrease) [Roll Up]		
Buildings, Net, Additions	1,000	1,000
Buildings, Net, Disposals	(1,000)	(1,000)
Buildings, Net, Translation Difference	0	0
Buildings, Net, Other Increase (Decrease)	0	0
Buildings, Net, Period Increase (Decrease)	0	0
Buildings, Net, Ending Balance	1,000	1,000
Movement in Furniture and Fixtures, Net [Roll Forward]		
Furniture and Fixtures, Net, Beginning Balance	1,000	1,000
Furniture and Fixtures, Net, Period Increase (Decrease) [Roll Up]		
Furniture and Fixtures, Net, Additions	1,000	1,000
Furniture and Fixtures, Net, Disposals	(1,000)	(1,000)
Furniture and Fixtures, Net, Translation Difference	0	0
Furniture and Fixtures, Net, Other Increase (Decrease)	0	0
Furniture and Fixtures, Net, Period Increase (Decrease)	0	0
Furniture and Fixtures, Net, Ending Balance	1,000	1,000
Movement in Other Property, Plant and Equipment, Net [Roll Forward]		
Other Property, Plant and Equipment, Net, Beginning Balance	1,000	1,000
Other Property, Plant and Equipment, Net, Period Increase (Decrease) [Roll Up]		
Other Property, Plant and Equipment, Net, Additions	1,000	1,000
Other Property, Plant and Equipment, Net, Disposals	(1,000)	(1,000)
Other Property, Plant and Equipment, Net, Translation Difference	0	0
Other Property, Plant and Equipment, Net, Other Increase (Decrease)	0	0
Other Property, Plant and Equipment, Net, Period Increase (Decrease)	0	0
Other Property, Plant and Equipment, Net, Ending Balance	1,000	1,000
Movement in Property, Plant and Equipment, Net [Roll Forward]		
Property, Plant and Equipment, Net, Beginning Balance	4,000	4,000
Property, Plant and Equipment, Net, Period Increase (Decrease) [Roll Up]		
Property, Plant and Equipment, Net, Additions	4,000	4,000
Property, Plant and Equipment, Net, Disposals	(4,000)	(4,000)
Property, Plant and Equipment, Net, Translation Difference	0	0
Property, Plant and Equipment, Net, Other Increase (Decrease)	0	0
Property, Plant and Equipment, Net, Period Increase (Decrease)	0	0
Property, Plant and Equipment, Net, Ending Balance	4,000	4,000

9.9. BUC09 - Simple Compound Fact

The *Simple Compound Fact* business use case shows how to model what amounts set of information which must go together to make any sense. An axis holds the set together, creating in essence a compound fact.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC09-SimpleCompoundFact/Index.html

9.9.1. Visual Example

Sample Company
For Period Ending December 31, 2010

Director	Salary	Bonus	Director Fee	Options Granted, at Fair Value
pattern:JohnDoeMember	1,000	1,000	1,000	1,000
pattern:JaneDoeMember	1,000	1,000	1,000	1,000
frm:DirectorsAllMember	2,000	2,000	2,000	2,000

9.9.2. Metapattern(s) employed

Compound Fact, Hierarchy

9.9.3. Description

The *Simple Compound Fact* business use case shows the notion of a compound fact. A compound fact is a set of facts which must go together to make sense. A compound fact always has an axis which differentiates one set of facts from another. It could be that multiple axis create a composite set of axis which uniquely identifies the compound fact, see the *Grouped Report* business use case.

In this example, the *Director [Axis]* is used to distinguish one director from the other and each director from the total for all directors. The Salary; Bonus; Director Fee; and Options Granted, at Fair Value are provided for each director and for the total for all directors.

9.9.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Director Compensation**	[Network]		
2	**Director Compensation [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Director [Axis]**	[Axis]		
6	Directors, All [Member]	[Member]		
7	John Doe [Member]	[Member]		
8	Jane Doe [Member]	[Member]		
9	**Director Compensation [Line Items]**	[Line Items]		
10	Director [Hierarchy]	[Abstract]		
11	Director, Salary	[Concept] Monetary	For Period	Credit
12	Director, Bonuses	[Concept] Monetary	For Period	Credit
13	Director, Fees	[Concept] Monetary	For Period	Credit
14	Director, Options Granted, at Fair Value	[Concept] Monetary	For Period	Credit

9.9.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- A compound fact always has at least one explicit axis (beyond the reporting entity and period) which uniquely identifies each set of facts.

- A compound fact is like the row of a data base table. The axis for the compound fact is like the key for the table containing the rows of the compound fact. If more than one axis is provided, that is like a composite key for the table.
- This Simple Compound Fact business use case introduces the notion of a domain partition and a domain partition aggregation model. The computation of the total Salary, as an example, for all directors is NOT a roll up as each director and the total of all directors are different XBRL contexts and therefore XBRL calculations cannot be utilized to express this computation. XBRL Formulas must be used to express the business rule for the aggregation of information across the Director [Axis]. The facts for add directors may, or may not, tie to another table within the business report. In this case, there are no other tables.

9.9.6.Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Director Compensation (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/SimpleCompoundFact/DirectorCompensation)
Table:	Director Compensation [Table] (pattern:DirectorCompensationTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	iso4217:USD

	frm:DirectorAxis		
brm:ConceptAxis	**Directors, All [Member]**	**John Doe [Member]**	**Jane Doe [Member]**
Director [Hierarchy]			
Director, Salary	2,000	1,000	1,000
Director, Bonuses	2,000	1,000	1,000
Director, Fees	2,000	1,000	1,000
Director, Options Granted, at Fair Value	2,000	1,000	1,000

9.10. BUC10 - Repeating Fact

The *Repeating Fact* business use case is a variation of the compound fact metapattern which points out that even only one fact can repeat.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC10-RepeatingFact/Index.html

9.10.1. Visual Example

Sample Company
For Period Ending December 31, 2010

SUBSEQUENT EVENTS

The following is a summary of events subsequent to the balance sheet date:

Description of subsequent event number 1 which relates to the loss of an uncollectable receivable and occurred on January 16, 2011.

Description of subsequent event number 2 which relates to the purchase of a business and occurred on February 1, 2011.

9.10.2. Metapattern(s) employed

Compound Fact, Hierarchy

9.10.3. Description

The *Repeating Concept* business use case builds on the *Simple Compound Fact* use case, pointing out the notion that one fact can act like a compound fact and repeat.

In this example the subsequent event description repeats. Each subsequent event is uniquely described by the Subsequent Event [Axis] value or Member.

9.10.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Subsequent Events**	[Network]		
2	**Subsequent Events [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Subsequent Event [Axis]**	[Axis]		
6	Subsequent Events, All [Member]	[Member]		
7	Uncollected Receivable [Member]	[Member]		
8	Purchase of Business [Member]	[Member]		
9	**Subsequent Event [Line Items]**	[Line Items]		
10	Subsequent Event [Hierarchy]	[Abstract]		
11	Subsequent Event, Description	[Concept] Text/String	For Period	

9.10.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- Compound facts repeat. You might only have one fact in your business report, but you might also have any unknown number of such facts, each differentiated by some [Axis].
- In this case, the member of the Subsequent Even [Axis] "Subsequent Event [Member]" would never be used because subsequent events and in particular the description would never be aggregated. However, it is the practice of the US GAAP taxonomy to have such members currently referred to as a [Domain].

9.10.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Subsequent Events (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/RepeatingFact/SubsequentEvents)
Table:	Subsequent Events [Table] (pattern:SubsequentEventsTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	None

	pattern:SubsequentEventAxis		
brm:ConceptAxis	Subsequent Events, All [Member]	Uncollected Receivable [Member]	Purchase of Business [Member]
Subsequent Event [Hierarchy]			
Subsequent Event, Description		Description of subsequent event number 1 which relates to the loss of an uncollectable receivable and occurred on January 16, 2011.	Description of subsequent event number 2 which relates to the purchase of a business and occurred on February 1, 2011.

9.11. BUC11 - Multiple Periods Compound Fact

The *Multiple Periods Compound Fact* business use case shows how to model what amounts to a *Compound Fact* which is reported for multiple periods within that one *Compound Fact*.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC11-MultiplePeriodsCompoundFact/Index.html

9.11.1. Visual Example

Sample Company
For Period Ending December 31, 2010

The following is a summary of leasehold land and buildings as of December 31, 2010 and 2009:

State	Location	Description	Tenure	Tenure Start Date	Land Area	2010 Value (at Cost)	2009 Value (at Cost)
pattern:WashingtonMember	Tacoma, Washington	Warehouse	Fifteen year lease	2000-01-01	1,000	5,000	4,000
pattern:WashingtonMember	Seattle, Washington	Warehouse	Twenty year lease	2000-01-01	100,000	50,000	40,000
				Total	101,000	55,000	44,000

9.11.2. Metapattern(s) employed

Compound Fact, Hierarchy

9.11.3. Description

The *Multiple Periods Compound Fact* business use case shows something quite common in financial reporting which is to provide values for both the current and prior period to describe some fact. In the screen shot, note that one value is reported for land area and two values are reported for value, 2010 and 2009. Note the report elements and relations below for the modelling of the concept Leasehold Land and Buildings, Value at Cost.

9.11.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Leasehold Land and Buildings**	[Network]		
2	**Leasehold Land and Buildings [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Leasehold Land and Building, Identifier [Axis]**	[Axis]		
6	Leaseholds, All [Member]	[Member]		
7	Tacoma Warehouse Under 15 Year Lease [Member]	[Member]		
8	Seattle Warehouse Under 20 Year Lease [Member]	[Member]		
9	**State [Axis]**	[Axis]		
10	States, All [Member]	[Member]		
11	Washington [Member]	[Member]		
12	Oregon [Member]	[Member]		
13	California [Member]	[Member]		
14	**Leasehold Land and Building [Line Items]**	[Line Items]		
15	Leasehold Land and Building [Hierarchy]	[Abstract]		
16	Leasehold Land and Buildings, Location	[Concept] Text/String	For Period	
17	Leasehold Land and Buildings, Description of Facility	[Concept] Text/String	For Period	
18	Leasehold Land and Buildings, Tenure	[Concept] Text/String	For Period	
19	Leasehold Land and Buildings, Tenure Start Date	[Concept] Date	For Period	
20	Leasehold Land and Buildings, Land Area	[Concept] Decimal	As Of	
21	Leasehold Land and Buildings, Value at Cost	[Concept] Monetary	As Of	

9.11.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- Notice that the current period and prior period are characteristics provided within the business report by the Period [Axis] rather than modelling each period within the taxonomy.
- Compare and contrast this use case with the *Simple Compound Fact* use case.
- Note how the information about which state relates to is presented differently in the presentation rendering (the screen shot above) and the automated rendering (the screen shot below); the business semantics remain equivalent.

9.11.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Leasehold Land and Buildings (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/MultiplePeriodsCompoundFact/LeaseHoldLandAndBuildings)
Table:	Leasehold Land and Buildings [Table] (pattern:LeaseholdLandBuildingsTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
pattern:StateAxis	pattern:WashingtonMember

	pattern:LeaseholdLandBuildingIdentifierAxis		
brm:ConceptAxis	**Leaseholds, All [Member]**	**Tacoma Warehouse Under 15 Year Lease [Member]**	**Seattle Warehouse Under 20 Year Lease [Member]**
Leasehold Land and Building [Hierarchy]			
Leasehold Land and Buildings, Location		Tacoma, Washington	Seattle, Washington
Leasehold Land and Buildings, Description of Facility		Warehouse	Warehouse
Leasehold Land and Buildings, Tenure		Fifteen year lease	Twenty year lease
Leasehold Land and Buildings, Tenure Start Date		2000-01-01	2000-01-01
Leasehold Land and Buildings, Land Area	101,000	1,000	100,000
Leasehold Land and Buildings, Value at Cost	55,000	5,000	50,000

9.12. BUC12 - Roll Forward in Compound Fact

The *Roll Forward in Compound Fact* business use case shows how to model a *Roll Forward* which is contained within a Compound Fact. This business use case also introduces the notion of the negated label role and the component.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC12-RollForwardInCompoundFact/Index.html

9.12.1. Visual Example

Sample Company
December 31,
(thousands of dollars)

SHARE OWNERSHIP PLANS

The following is information relating to share ownership plan: pattern:ShareOwnershipPlan1Member .

These are the description, general conditions, and terms of share ownership plan 1. Nam rhoncus mi. Nunc eu dui non mauris interdum tincidunt. Sed magna felis, accumsan a, fermentum quis, varius sed, ipsum. Nullam leo. Donec eros. Maecenas interdum, lectus eget aliquet tincidunt, tellus dolor ultrices tellus, nec hendrerit nunc lectus eget eros. Duis feugiat velit in eros. Curabitur tincidunt aliquet neque. Nulla ac est quis urna luctus elementum. Aliquam erat volutpat. In tincidunt nunc vehicula risus. Praesent dictum arcu sit amet wisi. Praesent ac odio. Donec vestibulum, sem vel facilisis consectetuer, justo arcu tempor sem, vel ultrices turpis leo quis augue.

Reconciliation of Outstanding Balance:

Type	Outstanding 2009	Granted	Forfeited	Exercised	Expired	Outstanding 2010
pattern:ShareOwnershipPlan1Member	0	4,000	-1,000	-1,000	-1,000	1,000

9.12.2. Metapattern(s) employed

Compound Fact, Roll Forward, Hierarchy

9.12.3. Description

The *Roll Forward in Compound Fact* shows exactly that, a *Roll Forward* use case modelled within a *Compound Fact* use case. In this business use case the *Roll Forward* is part of the set of information which could repeat, in this case there could be more than one share ownership plan.

Further, the compound fact which could repeat is comprised of two distinct components: a Hierarchy which contains information about the share ownership plan and a Roll Forward which reconciles the beginning and ending balance of the plan.

Finally, within the roll forward are number which do not contain a balance attribute and therefore to polarity of the numbers, in this case shares, is unknown unless that information is somehow made available. In this case a negated label was created and within the relations that preferred label was used. This tells an application rendering the information to reverse the sign of the fact value when rendering.

9.12.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Share Ownership Plans**	[Network]		
2	**Share Ownership Plan [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Share Ownership Plan, Identifier [Axis]**	[Axis]		
6	Share Ownership Plan 1 [Member]	[Member]		
7	**Share Ownership Plan [Line Items]**	[Line Items]		
8	Share Ownership Plan [Hierarchy]	[Abstract]		
9	Share Ownership Plan, Description, General Terms and Conditions	[Concept] Text/String	For Period	
10	Share Ownership Plan, Share Options Outstanding [Roll Forward]	[Abstract]		
11	Share Ownership Plan, Share Options Outstanding, Beginning Balance	[Concept] Shares	As Of	
12	Share Ownership Plan, Share Options Granted	[Concept] Shares	For Period	
13	Share Ownership Plan, Share Options Forfeited	[Concept] Shares	For Period	
14	Share Ownership Plan, Share Options Exercised	[Concept] Shares	For Period	
15	Share Ownership Plan, Share Options Expired	[Concept] Shares	For Period	
16	Share Ownership Plan, Share Options Outstanding, Ending Balance	[Concept] Shares	As Of	

9.12.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- In this use case a *Roll Forward* exists within a *Compound Fact*, in this case share ownership plans.
- The [Line Items] of the [Table] have two distinct sets or components. You can think of components as pieces of [Line Items] which are generally always used together and generally have a different rendering format.
- Negated label roles are used to indicate that reductions in shares outstanding should be rendered as negative values.

9.12.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Share Ownership Plans (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/RollForwardInCompoundFact/ShareOwnershipPlans)
Table:	Share Ownership Plan [Table] (pattern:ShareOwnershipPlanTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
pattern:ShareOwnershipPlanIdentifierAxis	pattern:ShareOwnershipPlan1Member

brm:ConceptAxis	brm:PeriodAxis	Fact Value
Share Ownership Plan [Hierarchy]		
Share Ownership Plan, Description, General Terms and Conditions	2010-01-01/2010-12-31	These are the description, general conditions, and terms of share ownership plan 1. Nam rhoncus mi. Nunc eu dui non mauris interdum tincidunt. Sed magna felis, accumsan a, fermentum quis, varius sed, ipsum. Nullam leo. Donec eros. Maecenas interdum, lectus eget aliquet tincidunt, tellus dolor ultrices tellus, nec hendrerit nunc lectus eget eros. Duis feugiat velit in eros. Curabitur tincidunt aliquet neque. Nulla ac est quis urna luctus elementum. Aliquam erat volutpat. In tincidunt nunc vehicula risus. Praesent dictum arcu sit amet wisi. Praesent ac odio. Donec vestibulum, sem vel facilisis consectetuer, justo arcu tempor sem, vel ultrices turpis leo quis augue.
Share Ownership Plan, Share Options Outstanding [Roll Forward]		
Share Ownership Plan, Share Options Outstanding, Beginning Balance	2009-12-31	0
Share Ownership Plan, Share Options Granted	2010-01-01/2010-12-31	4,000
Share Ownership Plan, Share Options Forfeited	2010-01-01/2010-12-31	(1,000)
Share Ownership Plan, Share Options Exercised	2010-01-01/2010-12-31	(1,000)
Share Ownership Plan, Share Options Expired	2010-01-01/2010-12-31	(1,000)
Share Ownership Plan, Share Options Outstanding, Ending Balance	2010-12-31	1,000

9.13. BUC13 - Nested Compound Fact

The *Nested Compound Fact* business use case shows how to model what amounts to two sets of information which are interrelated. Another way to look at this is to say that there is a master-detail type of relation between two [Table]s. This business use case also introduces the notion of using custom data type restrictions to control business report fact values.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC13-NestedCompoundFact/Index.html

9.13.1. Visual Example

Sample Company
December 31,
(thousands of dollars)

RELATED PARTY TRANSACTIONS

The following is a summary of related party of the company and transactions with those related parties. (Notice how the Related Party Name [Axis] connects the two tables of information together):

Related Parties:

Name of Related Party	Type of Relationship	Nature of Relationship
pattern:RelatedParty1Member	Parent	This is other descriptive information about the relationship.
pattern:RelatedParty2Member	JointVenture	This is other descriptive information about the relationship.

Transactions with Related Parties:

Party	Transaction Description	Pricing Policy	Amount
pattern:RelatedParty1Member	Transaction 1 description	Cost	1000
pattern:RelatedParty1Member	Transaction 2 description	Cost	1000
pattern:RelatedParty2Member	Transaction 1 description	Cost	1000
pattern:RelatedParty2Member	Transaction 2 description	Cost	1000

9.13.2. Metapattern(s) employed

Compound Fact, Hierarchy

9.13.3. Description

The *Nested Compound Concept* business use case models a compound fact nested within another compound fact also known as a master-detail type relationship. Consider that an entity can have zero to many related parties and that each of those related parties can have zero or many related party transactions. Those two report relations are modelled in this business use case.

Also, there is a desire to restrict the possible values provided for the types of related party reported. As such, a custom data type is created for the concept RepatedPartyType and an enumerated list of values is provided.

9.13.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Related Parties**	[Network]		
2	**Related Parties [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Related Party Name [Axis]**	[Axis]		
6	Related Party 1 [Member]	[Member]		
7	Related Party 2 [Member]	[Member]		
8	**Related Parties [Line Items]**	[Line Items]		
9	Related Party [Hierarchy]	[Abstract]		
10	Related Party, Type of Relationship	[Concept] types:RelatedPartyItemType	For Period	
11	Related Party, Nature of Relationship	[Concept] Text/String	For Period	
11	**Related Party Transactions**	[Network]		
12	**Related Party Transactions [Table]**	[Table]		
13	**Legal Entity [Axis]**	[Axis]		
14	Consolidated Entity [Member]	[Member]		
15	**Related Party Name [Axis]**	[Axis]		
16	Related Party 1 [Member]	[Member]		
17	Related Party 2 [Member]	[Member]		
18	**Related Party Transaction Type [Axis]**	[Axis]		
19	Related Party Transaction Type, All [Member]	[Member]		
20	Agency Arrangements with Related Party [Member]	[Member]		
21	Leasing Arrangements with Related Party [Member]	[Member]		
22	Purchase or Sale of Goods with Related Party [Member]	[Member]		
23	Purchase or Sale of Property or Other Assets with Related Party [Member]	[Member]		
24	**Related Party Transaction [Line Items]**	[Line Items]		
25	Related Party Transaction [Hierarchy]	[Abstract]		
26	Related Party Transaction, Description	[Concept] Text/String	For Period	
27	Related Party Transaction, Pricing Policy	[Concept] Text/String	For Period	
28	Related Party Transaction, Amount	[Concept] Monetary	For Period	Debit

9.13.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- Notice that each [Table] have the [Axis] Related Party Name [Axis]. It is this [Axis] which relates to two [Table]s together.
- Note that [Table]s should not be physically nested as XBRL Dimensions does not allow one [Table] to be nested within another [Table].
- The type of relationship here is common referred to as a master-detail relationship, similar to an invoice master table and second table which contains invoice line items.
- Note that the enumerated values provided for Related Party, Type of Relationship cannot be changed as enumerated lists cannot be extended.

9.13.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Related Parties (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/NestedCompoundFact/RelatedParties)
Table:	Related Parties [Table] (pattern:RelatedPartiesTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	None

	pattern:RelatedPartyNameAxis	
brm:ConceptAxis	**Related Party 1 [Member]**	**Related Party 2 [Member]**
Related Party [Hierarchy]		
Related Party, Type of Relationship	Parent	JointVenture
Related Party, Nature of Relationship	This is other descriptive information about the relationship.	This is other descriptive information about the relationship.

Fact Group (Combination of Network and Table)	
Network:	Related Party Transactions (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/NestedCompoundFact/RelatedPartyTransactions)
Table:	Related Party Transactions [Table] (pattern:RelatedPartyTransactionsTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:PeriodAxis	2010-01-01/2010-12-31

		pattern:RelatedPartyNameAxis	
brm:ConceptAxis	pattern:RelatedPartyTransactionTypeAxis	Related Party 1 [Member]	Related Party 2 [Member]
Related Party Transaction [Hierarchy]			
Related Party Transaction, Description	pattern:PurchaseOrSaleOfGoodsWithRelatedPartyMember	Transaction 1 description	Transaction 1 description
Related Party Transaction, Pricing Policy	pattern:PurchaseOrSaleOfGoodsWithRelatedPartyMember	Cost	Cost
Related Party Transaction, Amount	pattern:PurchaseOrSaleOfGoodsWithRelatedPartyMember	1,000	1,000
Related Party Transaction [Hierarchy]			
Related Party Transaction, Description	pattern:PurchaseOrSaleOfGoodsWithRelatedPartyMember	Transaction 2 description	Transaction 2 description
Related Party Transaction, Pricing Policy	pattern:PurchaseOrSaleOfGoodsWithRelatedPartyMember	Cost	Cost
Related Party Transaction, Amount	pattern:PurchaseOrSaleOfGoodsWithRelatedPartyMember	1,000	1,000

Related Party Transactions [Table]

Entity: http://www.SampleCompany.com SAMP

Period: Year ended 2010-12-31

Legal Entity: Consolidated Entity

Related Party Name	Related Party Transaction Type	Related Party Transaction, Descri...	Related Party Transaction, Pricing...	Related Party Transaction, Amount
Related Party 1	Purchase or Sale of Goods with Related Party	Transaction 1 description	Cost	1,000
	Purchase or Sale of Property or Other Assets with Related Party	Transaction 2 description	Cost	1,000
Related Party 2	Leasing Arrangements with Related Party	Transaction 2 description	Cost	1,000
	Purchase or Sale of Goods with Related Party	Transaction 1 description	Cost	1,000

Concept

Related Party Name

Related Party Transaction Type

rows

9.14. BUC14 - Reconciliation of Balance

The *Reconciliation of Balance* business use case shows how to model a reconciliation of one balance to another balance and to tie the detailed reconciling items to the summary. In addition, this business use case introduces the notion of integrity between the summary and detail information sets.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC14-ReconciliationOfBalance/Index.html

9.14.1. Visual Example

Sample Company
December 31,
(thousands of dollars)

	2010	2009
Cash and Cash Equivalents, per Balance Sheet	1,000	1,000
Reconciling Item A	2,500	500
Reconciling Item B	-500	500
Cash and Cash Equivalents, per Cash Flow Statement	3,000	2,000

9.14.2. Metapattern(s) employed

Roll Up, Hierarchy, Compound Fact

9.14.3. Description

The *Reconciliation of Balance* business use case reconciles two different concepts at the same point in time. In the example shown, Cash and Cash Equivalents per the balance sheet is reconciled to Cash and Cash Equivalents per the cash flow statement. (The example assumes that the two balances are different as could be the case with IFRS.) In addition, the summary information ties to detailed information about the reconciling items.

9.14.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Reconcilation of Cash and Cash Equivalents, Detail**	[Network]		
2	**Reconcilation of Cash, Detail [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Reconciling Item Type [Axis]**	[Axis]		
6	Reconciling Item Types, All Types [Member]	[Member]		
7	Reconciling Item Type A [Member]	[Member]		
8	Reconciling Item Type B [Member]	[Member]		
9	**Reconcilation of Cash, Detail [Line Items]**	[Line Items]		
10	Reconciling Item [Hierarchy]	[Abstract]		
11	Reconciling Item Description	[Concept] Text/String	For Period	
12	Reconciling Item Amount	[Concept] Monetary	As Of	Debit
12	**Reconcilation of Cash and Cash Equivalents, Summary**	[Network]		
13	**Reconcilation of Cash, Summary [Table]**	[Table]		
14	**Legal Entity [Axis]**	[Axis]		
15	Consolidated Entity [Member]	[Member]		
16	**Reconcilation of Cash, Summary [Line Items]**	[Line Items]		
17	Reconcilation of Cash, Summary [Roll Up]	[Abstract]		
18	Cash and Cash Equivalents	[Concept] Monetary	As Of	Debit
19	Reconciling Item Amount	[Concept] Monetary	As Of	Debit
20	Cash and Cash Equivalents, per Cash Flow Statement	[Concept] Monetary	As Of	Debit

9.14.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- The summary information is basically a very simple roll up.

- The detailed information is a compound fact.
- The summary [Table] and the detailed [Table] intersect via the "Reconciling Item Amount" concept and the "Reconciling Item Types, All Types [Member]".
- The [Axis] must assign dimension-defaults to the "Reconciling Item Type [Axis]". In this example, the "Legal Entity [Axis]" was also assigned a dimension-default.
- Compare the XBRL instance and the fact tables, note that the [Axis] do not physically exist in the XBRL instance, but do exist within the fact tables.

9.14.6. Basic automated rendering

Summary:

Fact Group (Combination of Network and Table)	
Network:	Reconcilation of Cash and Cash Equivalents, Summary (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/ReconciliationOfBalance/ReconcilationOfCashSummary)
Table:	Reconcilation of Cash, Summary [Table] (pattern:ReconcilationCashSummaryTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	iso4217:USD

	brm:PeriodAxis	
brm:ConceptAxis	**2009-12-31**	**2010-12-31**
Reconcilation of Cash, Summary [Roll Up]		
Cash and Cash Equivalents	1,000,000	1,000,000
Reconciling Item Amount	1,000,000	2,000,000
Cash and Cash Equivalents, per Cash Flow Statement	2,000,000	3,000,000

Detail:

Fact Group (Combination of Network and Table)	
Network:	Reconcilation of Cash and Cash Equivalents, Detail (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/ReconciliationOfBalance/ReconcilationOfCashDetail)
Table:	Reconcilation of Cash, Detail [Table] (pattern:ReconcilationCashDetailTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember

		pattern:ReconcilingItemTypeAxis		
brm:ConceptAxis	**brm:PeriodAxis**	**Reconciling Item Types, All Types [Member]**	**Reconciling Item Type A [Member]**	**Reconciling Item Type B [Member]**
Reconciling Item [Hierarchy]				
Reconciling Item Description	2010-01-01/2010-12-31		Reconciling Item A for 2010	Reconciling Item B for 2010
Reconciling Item Amount	2010-12-31	2,000,000	2,500,000	(500,000)
Reconciling Item [Hierarchy]				
Reconciling Item Description	2009-01-01/2009-12-31		Reconciling Item A for 2009	Reconciling Item B for 2009
Reconciling Item Amount	2009-12-31	1,000,000	500,000	500,000

9.15. BUC15 – Adjustment

An *adjustment* information model reconciles an originally stated balance to a restated balance, the adjustment being the total change, between two different report dates. An adjustment is similar to a roll forward in that it is a reconciliation, however rather than the Period [Axis] changing; it is the *Report Date [Axis]* which changes: originally reported balance + adjustment = restated balance.

The *Adjustment* metapattern shows how to model an adjustment to a prior period financial statement for a change in accounting policy or correction of an error as defined by financial reporting standards. This same approach can be used for making adjustments to other beginning balances not related to financial reporting.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC15-Adjustment/Index.html

9.15.1. Visual Example

Sample Company
December 31,
(thousands of dollars)

	2010	2009
Prior Period Adjustment		
Retained Earnings (Accumulated Losses), Originally Stated 2009	4,000	
Change in Accounting Policy	3,000	
Correction of an Error	-1,000	
Retained Earnings (Accumulated Losses), Restated 2009 Beginning Balance	6,000	

9.15.2. Metapattern(s) employed

Adjustment, Roll Up

9.15.3. Description

The example *Adjustment* above reconciles the Retained Earnings (Accumulated Losses), Originally Stated in 2009 to its Restated 2009 Beginning Balance via the Prior Period Adjustments which make up the change. Note that an *Adjustment* looks similar in presentation to a roll forward, however it is different in that a different [Axis] is changing.

An *Adjustment* can be identified by software applications by the business rule which computes the adjustment to verify that it is correctly articulated within the XBRL instance: originally stated + adjustment = restated balance over a changing *Report Date [Axis]*.

9.15.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**50000 - Prior Period Adjustments**	[Network]		
2	**Prior Period Adjustments [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Report Date [Axis]**	[Axis]		
6	Reported March 21, 2010 [Member]	[Member]		
7	Reported March 18, 2011 [Member]	[Member]		
8	**Prior Period Adjustments [Line Items]**	[Line Items]		
9	Prior Period Adjustments to Retained Earnings [Adjustment]	[Abstract]		
10	Retained Earnings (Accumulated Losses), Origionally Stated	[Concept] Monetary	As Of	Credit
11	Prior Period Adjustments, Period Increase (Decrease), Total [Roll Up]	[Abstract]		
12	Changes in Accounting Policy	[Concept] Monetary	As Of	Credit
13	Correction of an Error	[Concept] Monetary	As Of	Credit
14	Prior Period Adjustments, Period Increase (Decrease), Total	[Concept] Monetary	As Of	Credit
15	Retained Earnings (Accumulated Losses), Restated	[Concept] Monetary	As Of	Credit

9.15.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- An *Adjustment* reconciles two balances at the same point in time, the first balance being the originally stated balance and the second the restated balance.
- A common use for an adjustment is reporting an adjustment to retained earnings for a prior period error or change in accounting policy.
- Note that the concepts relating to the adjustment amount are as of a point in time.
- Note that there are two domain partitions.
- The adjustments could be from a roll forward or individual adjustments, for example: originally stated + adjustment1 + adjustment2 + adjustment*N* = restated balance

9.15.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	50000 - Prior Period Adjustments (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/Adjustment/PriorPeriodAdjustments)
Table:	Prior Period Adjustments [Table] (pattern:PriorPeriodAdjustmentsTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	iso4217:USD

brm:ConceptAxis	frm:ReportDateAxis	Fact Value
Prior Period Adjustments to Retained Earnings [Adjustment]		
Retained Earnings (Accumulated Losses), Origionally Stated	Reported March 21, 2010 [Member]	4,000
Prior Period Adjustments, Period Increase (Decrease), Total [Roll Up]		
Changes in Accounting Policy	Reported March 18, 2011 [Member]	3,000
Correction of an Error	Reported March 18, 2011 [Member]	(1,000)
Prior Period Adjustments, Period Increase (Decrease), Total	Reported March 18, 2011 [Member]	2,000
Retained Earnings (Accumulated Losses), Restated	Reported March 18, 2011 [Member]	6,000

9.16. BUC16 – Variance

A *variance* information model reconciles some reporting scenario with another reporting scenario, the variance between reporting scenarios being the variance or changes. For example, a sales analysis which reconciles the concept sales for the reporting scenarios of actual and budgeted is a variance. The equation in this case is: actual – budget = variance. But a variance could take other forms such as a variance from forecast, variance from plan, etc.

A variance is characterised by a changing Reporting Scenario [Axis] and the information model of a variance could take the form of any information model such as a hierarchy, roll up, roll forward, etc.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC16-Variance/Index.html

[CSH: I am seeing clues that this might not be a metapattern.]

9.16.1. Visual Example

Sample Company
For Period Ending December 31, 2010

Concept	Actual	Budgeted	*Variance*
Sales	6,000	5,000	*1,000*
Cost of Goods Sold	4,000	3,000	*1,000*
Contribution Margin	1,000	2,000	*-1,000*
Distribution Costs	1,000	1,000	*0*

9.16.2. Metapattern(s) employed

Variance metapattern; many information models could have variance, example uses Hierarcy

9.16.3. Description

A *Variance* reconciles two different reporting scenarios differentiated using the *Reporting Scenarios [Axis]*, in the case here *Actual [Member]* and *Budgeted [Member]*, the difference being the variance, or *Reporting Scenarios, All [Member]*.

A *Variance* can be identified by software applications by the business rule which verifies and computes the variance, Actual [Member] + Budgeted [Member] = Reporting Scenarios, All [Member], all within the *Reporting Scenario [Axis]*.

9.16.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**60000 - Variance Analysis**	[Network]		
2	**Variance Analysis [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Reporting Scenario [Axis]**	[Axis]		
6	Reporting Scenarios, All [Member]	[Member]		
7	Actual [Member]	[Member]		
8	Budgeted [Member]	[Member]		
9	**Variance Analysis [Line Items]**	[Line Items]		
10	Variance Analysis [Hierarchy]	[Abstract]		
11	Sales	[Concept] Monetary	For Period	Credit
12	Cost of Goods Sold	[Concept] Monetary	For Period	Debit
13	Contribution Margin	[Concept] Monetary	For Period	Credit
14	Distribution Costs	[Concept] Monetary	For Period	Debit

9.16.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- The *Variance* use case shows how to report facts for different reporting scenarios.
- The *Variance* could be combined with many different types of information models.

9.16.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	60000 - Variance Analysis (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/Variance/VarianceAnalysis)
Table:	Variance Analysis [Table] (pattern:VarianceAnalysisTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	iso4217:USD

	frm:ReportingScenarioAxis		
brm:ConceptAxis	**Reporting Scenarios, All [Member]**	**Actual [Member]**	**Budgeted [Member]**
Variance Analysis [Hierarchy]			
Sales	1,000	6,000	5,000
Cost of Goods Sold	1,000	4,000	3,000
Contribution Margin	(1,000)	1,000	2,000
Distribution Costs	0	1,000	1,000

9.17. BUC17 - Complex Computation

A *Complex Computation* information model can be thought of as a hierarchy plus a set of commutations between different concepts within that hierarchy which are challenging to model as the parent/child relations of a graph. The type of computations can vary significantly, thus the challenging in modelling. For example, the computation of earnings per share is a complex computation.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC17-ComplexComputation/Index.html

9.17.1. Visual Example

Sample Company
For Period Ended December 31,

	2010	2009
OTHER INFORMATION		
Earnings Per Share Components		
Net Income (Loss)	10,000,000	20,000,000
Weighted Average Common Shares	100,000,000	100,000,000
Earnings Per Share	0.10	0.20

9.17.2. Metapattern(s) employed

Complex Computation

9.17.3. Description

Any information set can be modelled as a hierarchy metapattern. A hierarchy is nothing more than a set of relations. If you add computations to the hierarchy, indicating that the concepts within that hierarchy have some set of computation type relations, then you get what is shown in this business use case, a *Complex Computation*.

9.17.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**70000 - Earnings Per Share Components**	[Network]		
2	**Earnings Per Share Components [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Earnings Per Share Components [Line Items]**	[Line Items]		
6	Earnings Per Share Components [Hierarchy]	[Abstract]		
7	Net Income (Loss)	[Concept] Monetary	For Period	Credit
8	Weighted Average Common Shares	[Concept] Shares	For Period	
9	Earnings Per Share	[Concept] Per Share	For Period	

9.17.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- A complex computation is a hierarchy of concepts, some of which are numeric and there are computation-type relations between the numeric concepts.
- Many types of computation-type relations can be difficult to express as a parent-child hierarchy, thus the need to use XBRL formula to express these business rules.

9.17.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	70000 - Earnings Per Share Components (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/ComplexComputation/EarningsPerShareComponents)
Table:	Earnings Per Share Components [Table] (pattern:EarningsPerShareComponentsTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember

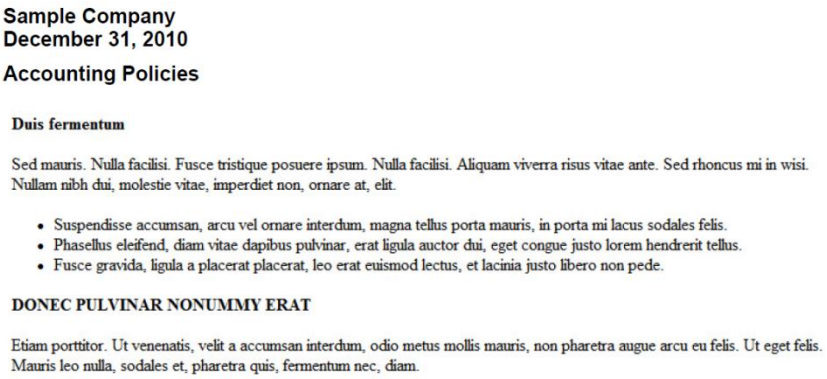
	brm:PeriodAxis	
brm:ConceptAxis	2009-01-01/2009-12-31	2010-01-01/2010-12-31
Earnings Per Share Components [Hierarchy]		
Net Income (Loss)	20,000,000	10,000,000
Weighted Average Common Shares	100,000,000	100,000,000
Earnings Per Share	0.2	0.1

9.18. BUC24 - Text Block

The *Text Block* business use case shows how one fragment of information or multiple pieces of information can be put reported together within on "block of text", as opposed to modelling the individual pieces of information. Note the *Prose* and *Escaped XHTML* business use cases which expand on this business use case.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC24-TextBlock/Index.html

9.18.1. Visual Example



Sample Company
December 31, 2010

Accounting Policies

Duis fermentum

Sed mauris. Nulla facilisi. Fusce tristique posuere ipsum. Nulla facilisi. Aliquam viverra risus vitae ante. Sed rhoncus mi in wisi. Nullam nibh dui, molestie vitae, imperdiet non, ornare at, elit.

- Suspendisse accumsan, arcu vel ornare interdum, magna tellus porta mauris, in porta mi lacus sodales felis.
- Phasellus eleifend, diam vitae dapibus pulvinar, erat ligula auctor dui, eget congue justo lorem hendrerit tellus.
- Fusce gravida, ligula a placerat placerat, leo erat euismod lectus, et lacinia justo libero non pede.

DONEC PULVINAR NONUMMY ERAT

Etiam porttitor. Ut venenatis, velit a accumsan interdum, odio metus mollis mauris, non pharetra augue arcu eu felis. Ut eget felis. Mauris leo nulla, sodales et, pharetra quis, fermentum nec, diam.

9.18.2. Metapattern(s) employed

Text Block

9.18.3. Description

The *Text Block* business use case shows how information can be communicated as a "block of text" rather than reporting individual components. The reason this is referred to as a "text block" is that originally in the US GAAP Taxonomy a text block was to report literally a block of text. This has subsequently changed and instead of text, escaped XHTML is reported. The escaped XHTML is converted into actual XHTML and then the XHTML is rendered. In this example, one concept is used to communicate information about accounting policies.

Because of formatting considerations and little control over text other than tabs, spaces, and line feeds; the escaped XHTML is used rather than plain text.

9.18.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**20000 - Accounting Policies**	[Network]		
2	**Accounting Policies [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Accounting Policies [Line Items]**	[Line Items]		
6	Accounting Policies [Text Block]	[Concept] XHTML	For Period	

9.18.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- When a text block is used, one fact value is used to articulate a "block" of information, rather than breaking the block into individual facts. The up side is that articulating the information is easier as less work is involved. The down side is that the user of the information cannot get to the details

of the block of information, they can only use the set as one unit of information.

9.18.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	20000 - Accounting Policies (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/TextBlock/AccountingPolicies)
Table:	Accounting Policies [Table] (pattern:AccountingPoliciesTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	None

	brm:PeriodAxis
brm:ConceptAxis	**2010-01-01/2010-12-31**
Accounting Policies [Text Block]	Duis fermentum Sed mauris. Nulla facilisi. Fusce tristique posuere ipsum. Nulla facilisi. Aliquam viverra risus vitae ante. Sed rhoncus mi in wisi. Nullam nibh dui, molestie vitae, imperdiet non, ornare at, elit. • Suspendisse accumsan, arcu vel ornare interdum, magna tellus porta mauris, in porta mi lacus sodales felis. • Phasellus eleifend, diam vitae dapibus pulvinar, erat ligula auctor dui, eget congue justo lorem hendrerit tellus. • Fusce gravida, ligula a placerat placerat, leo erat euismod lectus, et lacinia justo libero non pede. Fusce gravida, ligula a placerat placerat, leo erat euismod lectus, et lacinia justo libero non pede. Vivamus ac velit vel magna nonummy pretium. 1. Etiam ut augue 2. Aliquam erat volutpat DONEC PULVINAR NONUMMY ERAT Etiam porttitor. Ut venenatis, velit a accumsan interdum, odio metus mollis mauris, non pharetra augue arcu eu felis. Ut eget felis. Mauris leo nulla, sodales et, pharetra quis, fermentum nec, diam.

9.19. BUC25 – Prose

The *Prose* business use case shows how to model prose or information which has sophisticated formatting referred to as prose or as narrative such as tables, lists, paragraphs which should be read in a specific order or sequence.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC25-Prose/Index.html

9.19.1. Visual Example

Sample Company
For Period Ending December 31, 2010

SOME SET OF BUSINESS INFORMATION

The following is a summary of some set of business information for the period ended December 31, 2010:

Proin elit sem, ornare non, ullamcorper vel, sollicitudin a, lacus. Mauris tincidunt cursus est. Nulla sit amet nibh. Sed elementum feugiat augue. Nam non tortor non leo porta bibendum. Morbi eu pede.

Sed justo: Nibh, placerat

Praesent eleifend	Lorem ipsum dolor	Suspendisse	Maecenas ante	Phasellus sagittis orci quis orci
Vivamus quis nunc	1,000	1,000	1,000	1,000
Proin porta tincidunt nunc	1,000	1,000	1,000	1,000
Pellentesque condimentum	2,000	2,000	2,000	2,000

Duis fermentum

Sed mauris. Nulla facilisi. Fusce tristique posuere ipsum. Nulla facilisi. Aliquam viverra risus vitae ante. Sed rhoncus mi in wisi. Nullam nibh dui, molestie vitae, imperdiet non, ornare at, elit.

- Suspendisse accumsan, arcu vel ornare interdum, magna tellus porta mauris, in porta mi lacus sodales felis.
- Phasellus eleifend, diam vitae dapibus pulvinar, erat ligula auctor dui, eget congue justo lorem hendrerit tellus.
- Fusce gravida, ligula a placerat placerat, leo erat euismod lectus, et lacinia justo libero non pede.

Fusce gravida, ligula a placerat placerat, leo erat euismod lectus, et lacinia justo libero non pede. Vivamus ac velit vel magna nonummy pretium.

1. Etiam ut augue
2. Aliquam erat volutpat

Sed justo: Nibh, placerat

	20XX	20XX
Sed dapibus dui quis lectus; Donec id sem. Integer sit amet 2% diam ac nibh consequat vestibulum; Sed eget augue malesuada quam adipiscing mattis	23,480	46,080
Sed lobortis, Maecenas scelerisque ullamcorper libero, Aliquam porta $880 leo imperdiet pede	85,000	-
Nunc congue. Fusce venenatis. Maecenas tincidunt, ipsum in fringilla hendrerit, dolor metus eleifend neque, vel tincidunt mi nunc a purus	-	45,000
Fusce venenatis. Maecenas tincidunt, ipsum in fringilla $1,200 hendrerit, dolor metus eleifend neque, vel tincidunt mi nunc a purus	33,301	43,782
Pellentesque	141,781	134,862

DONEC PULVINAR NONUMMY ERAT

Etiam porttitor. Ut venenatis, velit a accumsan interdum, odio metus mollis mauris, non pharetra augue arcu eu felis. Ut eget felis. Mauris leo nulla, sodales et, pharetra quis, fermentum nec, diam.

9.19.2. Metapattern(s) employed

Text Block

9.19.3. Description

The *Prose* or narrative business use case shows how information can be disclosed if the ordering of the information matters and if rather than disclosing individual pieces of information, an entire set of information can be articulated as one fact value. This use case is similar to the *Escaped XHTML* and *Text Block* use cases.

9.19.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Some Set of Business Information**	[Network]		
2	**Some Set of Business Information [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Some Characteristic [Axis]**	[Axis]		
6	Some Characteristic [Member]	[Member]		
7	**Some Set of Business Information [Line Items]**	[Line Items]		
8	Some Set of Business Information [HTML]	[Concept] XHTML	For Period	

9.19.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- Escaped XHTML is used to disclose such prose (rather than normal XHTML) because XBRL items must not contain mark up. To overcome this constraint, the mark up characters are escaped, thus converting "<" into "<" and ">" into ">".
- Conversion from escaped XHTML to normal XHTML is a well understood process, easily done by software applications.
- Other XML formats can be escaped in the same manner, basically allowing for different types of XML data to be imbedded within XBRL.
- Eventually XBRL may be changed to allow specific data types to appear within specific XBRL data type; for example a specific data type "XHTML", not requiring the escaping process to be used.

9.19.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Some Set of Business Information (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/Prose/SomeSetOfBusinessInformation)
Table:	Some Set of Business Information [Table] (pattern:SomeSetBusinessInformationTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
pattern:SomeCharacteristicAxis	pattern:SomeCharacteristicMember
brm:Units	None

	brm:PeriodAxis
brm:ConceptAxis	**2010-01-01/2010-12-31**
Some Set of Business Information [HTML]	Proin elit sem, ornare non, ullamcorper vel, sollicitudin a, lacus. Mauris tincidunt cursus est. Nulla sit amet nibh. Sed elementum feugiat augue. Nam non tortor non leo porta bibendum. Morbi eu pede.

Sed justo: Nibh, placerat

Praesent eleifend	Lorem ipsum dolor	Suspendisse	Maecenas ante	Phasellus sagittis orci quis orci
Vivamus quis nunc	1,000	1,000	1,000	1,000
Proin porta tincidunt nunc	1,000	1,000	1,000	1,000
Pellentesque condimentum	2,000	2,000	2,000	2,000

Duis fermentum

Sed mauris. Nulla facilisi. Fusce tristique posuere ipsum. Nulla facilisi. Aliquam viverra risus vitae ante. Sed rhoncus mi in wisi. Nullam nibh dui, molestie vitae, imperdiet non, ornare at, elit.

- Suspendisse accumsan, arcu vel ornare interdum, magna tellus porta mauris, in porta mi lacus sodales felis.
- Phasellus eleifend, diam vitae dapibus pulvinar, erat ligula auctor dui, eget congue justo lorem hendrerit tellus.
- Fusce gravida, ligula a placerat placerat, leo erat euismod lectus, et lacinia justo libero non pede.

Fusce gravida, ligula a placerat placerat, leo erat euismod lectus, et lacinia justo libero non pede. Vivamus ac velit vel magna nonummy pretium.

1. Etiam ut augue
2. Aliquam erat volutpat

Sed justo: Nibh, placerat

	20XX	20XX
Sed dapibus dui quis lectus; Donec id sem. Integer sit amet 2% diam ac nibh consequat vestibulum; Sed eget augue malesuada quam adipiscing mattis	23,480	46,080
Sed lobortis, Maecenas scelerisque ullamcorper libero, Aliquam porta $880 leo imperdiet pede	85,000	-
Nunc congue. Fusce venenatis. Maecenas tincidunt, ipsum in fringilla hendrerit, dolor metus eleifend neque, vel tincidunt mi nunc a purus	-	45,000
Fusce venenatis. Maecenas tincidunt, ipsum in fringilla $1,200 hendrerit, dolor metus eleifend neque, vel tincidunt mi nunc a purus	33,301	43,782
Pellentesque	141,781	134,862

DONEC PULVINAR NONUMMY ERAT

Etiam porttitor. Ut venenatis, velit a accumsan interdum, odio metus mollis mauris, non pharetra augue arcu eu felis. Ut eget felis. Mauris leo nulla, sodales et, pharetra quis, fermentum nec, diam.

9.20. BUC26 - Escaped XHTML

The *Escaped XHTML* business use case is a variation of a *Text Block* and models how one can make use of HTML (hypertext mark up language) to achieve pixel perfect renderings of information which has complex information structures.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC26-EscapedXHTML/Index.html

9.20.1. Visual Example

Sample Company
For Period Ending December 31, 2010

DIRECTOR COMPENSATION

The following is a summary of director compensation for the period ended December 31, 2010:

Table 1: Director's compensation

Name of director	Salary	Bonus	Director fees	Fair Value of Options Granted
Jane Doe	1,000	1,000	1,000	1,000
John Doe	1,000	1,000	1,000	1,000
Total	2,000	2,000	2,000	2,000

9.20.2. Metapattern(s) employed

Text Block

9.20.3. Description

The *Escaped XHTML* business use case is basically the same as the *Text Block* and *Prose* business use case. All these business use cases show how information can be modelled if there is formatted structure to the information or if there is a desire to model the information as a set, rather than modelling each detailed fact which may exist in the information set.

9.20.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Director Compensation**	[Network]		
2	**Director Compensation [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Director Compensation [Line Items]**	[Line Items]		
6	Director [Hierarchy]	[Abstract]		
7	Director Compensation [HTML]	[Concept] XHTML	For Period	

9.20.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- While a business user cannot parse the details of the information set, this type of an approach can be useful in modelling certain detailed information.

9.20.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Director Compensation (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/EscapedXHTML/DirectorCompensation)
Table:	Director Compensation [Table] (pattern:DirectorCompensationTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	None

	brm:PeriodAxis
brm:ConceptAxis	2010-01-01/2010-12-31
Director [Hierarchy]	
Director Compensation [HTML]	

Name of director	Salary	Bonus	Director fees	Fair Value of Options Granted
Jane Doe	1,000	1,000	1,000	1,000
John Doe	1,000	1,000	1,000	1,000
Total	2,000	2,000	2,000	2,000

9.21. BUC27 - Using JSON

The *JSON* business use case models how to articulate data primarily for the purpose of exchanging a set of information. JSON (pronounced Jayson) is an approach to formatting data. Other formats such as CSV (comma separated values) could likewise use this approach.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC27-UsingJSON/Index.html

9.21.1. Visual Example


```
{"DirectorCompensation":
   [
      {
         "DirectorName":"Jane Doe",
         "Salary":"1,000",
         "Bonus":"1,000",
         "DirectorFees":"1,000",
         "FairValueOfOptionsGranted":"1,000"
      },
      {
         "DirectorName":"John Doe",
         "Salary":"1,000",
         "Bonus":"1,000",
         "DirectorFees":"1,000",
         "FairValueOfOptionsGranted":"1,000"
      },
      {
         "DirectorName":"All Directors",
         "Salary":"2,000",
         "Bonus":"2,000",
         "DirectorFees":"2,000",
         "FairValueOfOptionsGranted":"2,000"
      }
   ]
}
```


9.21.2. Metapattern(s) employed

Text Block

9.21.3. Description

JSON (Java Script Object Notation, see http://www.json.org) is a data format which is similar to CSV but more powerful because it can express a hierarchy. JSON can be useful in exchanging information, this is how such information can be modelled using XBRL. CSV or other formats can be used in a similar manner.

9.21.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Director Compensation**	[Network]		
2	**Director Compensation [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Director Compensation [Line Items]**	[Line Items]		
6	Director Compensation [JSON]	[Concept]	For Period	

9.21.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- The *Using JSON* business use case is similar to the *Text Block*, *Prose*, *Escaped XHTML* use cases in that a set of information is modelled as one concept and in a business report, that one Fact holds the complete set of information.
- This is one approach to modelling some formatted set of information. CSV or other data formats could also be used.

9.21.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Director Compensation (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/UsingJSON/DirectorCompensation)
Table:	Director Compensation [Table] (pattern:DirectorCompensationTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	None

	brm:PeriodAxis
brm:ConceptAxis	2010-01-01/2010-12-31
Director Compensation [JSON]	{"DirectorCompensation": [{ "DirectorName":"Jane Doe", "Salary":"1,000", "Bonus":"1,000", "DirectorFees":"1,000", "FairValueOfOptionsGranted":"1,000" }, { "DirectorName":"John Doe", "Salary":"1,000", "Bonus":"1,000", "DirectorFees":"1,000", "FairValueOfOptionsGranted":"1,000" }, { "DirectorName":"All Directors", "Salary":"2,000", "Bonus":"2,000", "DirectorFees":"2,000", "FairValueOfOptionsGranted":"2,000" }] }

9.22. BUC28 - General Comment

The *General Comment* business use case shows how to include a comment (implemented as an XBRL footnote) within a business report which includes additional information about a fact which is reported.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC28-GeneralComment/Index.html

9.22.1. Visual Example

Sample Company
For Period Ending December 31,
(thousands of dollars, except number of employees)

	2010	2009	2008	2007	2006
Sales, Net	1,500	1,400	1,300	1,200	1,100
Income (Loss) from Continuing Operations	500	400	300	200	100
Net Income (Loss) *(a) (c)*	51	41	31	21	11
Cash Flow Provided by (used in) Operating Activities, Net	5,000	4,000	3,000	2,000	1,000
Capital Additions	1,000	650	550	450	350
Average Number of Employees *(b) (c)*	300	290	280	270	260

COMMENTS:

(a). XBRL Footnote: This is an XBRL footnote, there is no 'categorization' as to what this is for. This indicates that the report is trying to tell you something about the Fact 'pattern:NetIncomeLoss' for a specific context.
(b). XBRL Footnote: This is another XBRL footnote, again, trying to tell you something about the average number of employees.
(c). This comment hooks two reported Facts together, average number of employees and net income for 2010.

9.22.2. Metapattern(s) employed

Any, example uses Flat Hierarchy

9.22.3. Description

The *General Comment* business use case shows how a comment of any sort can be associated with any fact being reported. In addition, facts can be linked together indicating that they are related in some arbitrary way. These comments are implemented as an XBRL footnote.

9.22.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Financial Highlights**	[Network]		
2	**Financial Highlights [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Financial Highlights [Line Items]**	[Line Items]		
6	Financial Highlights [Hierarchy]	[Abstract]		
7	Sales, Net	[Concept] Monetary	For Period	Credit
8	Income (Loss) from Continuing Operations	[Concept] Monetary	For Period	Credit
9	Net Income (Loss)	[Concept] Monetary	For Period	Credit
10	Cash Flow Provided by (Used in) Operating Activities, Net	[Concept] Monetary	For Period	Debit
11	Capital Additions	[Concept] Monetary	For Period	Debit
12	Average Number of Employees	[Concept] Decimal	For Period	

9.22.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- The only difference between the Flat Hierarchy and this business use case is the addition of an XBRL footnote within the business report.

- A specific role and arcrole can be used to categorize an XBRL footnote which is contained within a business report.
- See the *Reclassification* and *Reason Not Reported* business use cases which show other categories of XBRL footnotes.
- Note that XBRL footnotes can be used to associate one or more facts to one or more other Facts, effectively expressing a set of related facts.

9.22.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Financial Highlights (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/FlatHierarchy/FinancialHighlights)
Table:	Financial Highlights [Table] (pattern:FinancialHighlightsTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember

	brm:PeriodAxis				
brm:ConceptAxis	**2006-01-01/2006-12-31**	**2007-01-01/2007-12-31**	**2008-01-01/2008-12-31**	**2009-01-01/2009-12-31**	**2010-01-01/2010-12-31**
Financial Highlights [Hierarchy]					
Sales, Net	1,100,000	1,200,000	1,300,000	1,400,000	1,500,000
Income (Loss) from Continuing Operations	100,000	200,000	300,000	400,000	500,000
Net Income (Loss)	11,000	21,000	31,000	41,000	51,000
Cash Flow Provided by (Used in) Operating Activities, Net	1,000,000	2,000,000	3,000,000	4,000,000	5,000,000
Capital Additions	350,000	450,000	550,000	650,000	1,000,000
Average Number of Employees	260	270	280	290	300

9.23. BUC30 – Classes

The *Classes* business use case shows how information can be modelled as concepts or as the members of an [Axis]. Please note the *Simple Roll Up* business use case which models the classes of property, plant, and equipment as concepts. This business use cases models classes of property, plant, and equipment as the members of an [Axis].

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC30-Classes/Index.html

9.23.1. Visual Example

Sample Company
December 31,
(thousands of dollars)

	2010	2009
ASSETS		
Property, Plant, and Equipment, Net		
Land	5,347	1,147
Buildings, Net	244,508	366,375
Furniture and Fixtures, Net	34,457	34,457
Computer Equipment, Net	4,169	5,313
Other Property, Plant, and Equipment, Net	6,702	6,149
Property, Plant and Equipment, Net, Total	295,183	413,441

9.23.2. Metapattern(s) employed

Any, example uses Roll Up

9.23.3. Description

This business use case shows an alternative approach to modelling the *Simple Roll Up* business use case. Be sure to compare that business use case with this business use case noting the difference. There is no difference in the business semantics between these two use cases.

9.23.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Property, Plant, and Equipment, by Component**	[Network]		
2	**Property, Plant and Equipment, by Component [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Class of Property, Plant and Equipment [Axis]**	[Axis]		
6	All Classes of Property, Plant and Equipment [Member]	[Member]		
7	Land [Member]	[Member]	For Period	
8	Buildings [Member]	[Member]	For Period	
9	Furniture and Fixtures [Member]	[Member]	For Period	
10	Computer Equipment [Member]	[Member]	For Period	
11	Other Property, Plant and Equipment [Member]	[Member]	For Period	
12	**Property, Plant and Equipment, by Component [Line Items]**	[Line Items]		
13	Property, Plant and Equipment, Net [Hierarchy]	[Abstract]		
14	Property, Plant and Equipment, Net	[Concept] Monetary	As Of	Debit

9.23.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- The *Classes* business use cases points out that there are alternative approaches to modelling the same information. Contrast the approach used in this use case with the *Simple Roll Up* use case to see two approaches to adding taxonomy information: as a concept or as a member of an [Axis].

- Choosing whether to model information as a concept or as a member of an [Axis] should be done consistently with some clear strategy being communicated.
- Each approach has various pros and cons. It is these pros and cons which will generally determine the most appropriate option.
- Note that the members of an [Axis] can have what amount to any number of properties associated with a class. By modelling something as a concept this is not possible. See the *Class Properties* business use case.

9.23.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Property, Plant, and Equipment, by Component (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/Classes/PropertyPlantAndEquipmentByComponent)
Table:	Property, Plant and Equipment, by Component [Table] (pattern:PropertyPlantEquipmentByComponentTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:ConceptAxis	pattern:PropertyPlantAndEquipmentNet
brm:Units	iso4217:USD

	pattern:ClassPropertyPlantEquipmentAxis					
brm:PeriodAxis	All Classes of Property, Plant and Equipment [Member]	Land [Member]	Buildings [Member]	Furniture and Fixtures [Member]	Computer Equipment [Member]	Other Property, Plant and Equipment [Member]
2010-12-31	295,183,000	5,347,000	244,508,000	34,457,000	4,169,000	6,702,000
2009-12-31	413,441,000	1,147,000	366,375,000	34,457,000	5,313,000	6,149,000

9.24. BUC31 - Class Properties

The *Class Properties* business use case expands on the Classes business use case showing how concepts can be related to other concepts by an [Axis] is classes are expressed using [Member]s of an [Axis]. By contrast, [Line Items] expressed using concepts where there are no [Axis] in common and when they are expressed in different [Table]s are not related in any way.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC31-ClassProperties/Index.html

9.24.1. Visual Example

Sample Company
December 31,
(thousands of dollars)

Property, Plant and Equipment Policies

Class	Valuation Basis	Depreciation Method	Estimated Useful Life
Land	Mauris tincidunt cursus est	NA	NA
Buildings	Sed dapibus venenatis ipsum	Etiam porttitor	20 years
Furniture and Fixtures	Nunc congue	Maecenas tincidunt	10 years
Computer Equipment	Suspendisse potenti	Maecenas tincidunt	5 years
Other	Phasellus eleifend	Maecenas tincidunt	5 years

Property, Plant, and Equipment, Net, Components

	2010	2009
Land	5,347	1,147
Buildings, Net	244,508	366,375
Furniture and Fixtures, Net	34,457	34,457
Computer Equipment, Net	4,169	5,313
Other Property, Plant, and Equipment, Net	6,702	6,149
Property, Plant and Equipment, Net, Total	295,183	413,441

9.24.2. Metapattern(s) employed

Hierarchy, Roll Up

9.24.3. Description

In this business use case the policies and the components of property, plant, and equipment are modelled in different [Table]s because they are presented in different areas of the report. However, the policies and the components of property, plant, and equipment are related, even though they are expressed for presentation purposes in a different area of a report.

When classes of something are modelled as [Member]s of an [Axis], it is easy to have two different sets of [Line Items] but still keep the relation between those [Line Items]. This allows for the alternative rendering to easily be created, combining these two separate sets of [Line Items].

By contrast, if two [Table]s have [Line Items] which are in fact related but there is nothing, such as an [Axis], a software application has no way of understanding that the two pieces are related.

9.24.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Property, Plant, and Equipment, by Component**	[Network]		
2	**Property, Plant and Equipment, by Component [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Class of Property, Plant and Equipment [Axis]**	[Axis]		
6	All Classes of Property, Plant and Equipment [Member]	[Member]		
7	Land [Member]	[Member]		
8	Buildings [Member]	[Member]		
9	Furniture and Fixtures [Member]	[Member]		
10	Computer Equipment [Member]	[Member]		
11	Other Property, Plant and Equipment [Member]	[Member]		
12	**Property, Plant and Equipment, by Component [Line Items]**	[Line Items]		
13	Property, Plant and Equipment, Net [Hierarchy]	[Abstract]		
14	Property, Plant and Equipment, Net	[Concept] Monetary	As Of	Debit
14	**Property, Plant, and Equipment, Policies**	[Network]		
15	**Property, Plant and Equipment, Policies [Table]**	[Table]		
16	**Legal Entity [Axis]**	[Axis]		
17	Consolidated Entity [Member]	[Member]		
18	**Class of Property, Plant and Equipment [Axis]**	[Axis]		
19	All Classes of Property, Plant and Equipment [Member]	[Member]		
20	Land [Member]	[Member]		
21	Buildings [Member]	[Member]		
22	Furniture and Fixtures [Member]	[Member]		
23	Computer Equipment [Member]	[Member]		
24	Other Property, Plant and Equipment [Member]	[Member]		
25	**Property, Plant and Equipment, Policies [Line Items]**	[Line Items]		
26	Property, Plant and Equipment, Policies [Hierarchy]	[Abstract]		
27	Valuation Basis	[Concept] Text/String	For Period	
28	Depreciation Method	[Concept] Text/String	For Period	
29	Estimated Useful Life	[Concept] Text/String	For Period	

9.24.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- Note that the policies and components [Table]s share the Class of Property, Plant and Equipment [Axis].
- Note that a software application could easily render the two sets of information as one set of [Line Items] should the user of this information prefer this organization.
- If there is nothing physically connecting different [Line Items] of different [Table]s a human reading the information my understand the relation, but a computer software application will not.

9.24.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Property, Plant, and Equipment, Policies (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/ClassProperties/PropertyPlantAndEquipmentPolicies)
Table:	Property, Plant and Equipment, Policies [Table] (pattern:PropertyPlantAndEquipmentPoliciesTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:PeriodAxis	2010-01-01/2010-12-31
brm:Units	None

	pattern:ClassPropertyPlantEquipmentAxis					
brm:ConceptAxis	**All Classes of Property, Plant and Equipment [Member]**	**Land [Member]**	**Buildings [Member]**	**Furniture and Fixtures [Member]**	**Computer Equipment [Member]**	**Other Property, Plant and Equipment [Member]**
pattern:Valuation Basis		Mauris tincidunt cursus est	Sed dapibus venenatis ipsum	Nunc congue	Suspendisse potenti	Phasellus eleifend
pattern:Depreciation Method		NA	Etiam porttitor	Maecenas tincidunt	Maecenas tincidunt	Maecenas tincidunt
pattern:Estimated Useful Life		NA	20 years	10 years	5 years	5 years

Fact Group (Combination of Network and Table)	
Network:	Property, Plant, and Equipment, by Component (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/ClassProperties/PropertyPlantAndEquipmentByComponent)
Table:	Property, Plant and Equipment, by Component [Table] (pattern:PropertyPlantEquipmentByComponentTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:ConceptAxis	pattern:Property, Plant and Equipment, Net
brm:Units	iso4217:USD

	pattern:ClassPropertyPlantEquipmentAxis					
brm:PeriodAxis	All Classes of Property, Plant and Equipment [Member]	Land [Member]	Buildings [Member]	Furniture and Fixtures [Member]	Computer Equipment [Member]	Other Property, Plant and Equipment [Member]
2010-12-31	295,183,000	5,347,000	244,508,000	34,457,000	4,169,000	6,702,000
2009-12-31	413,441,000	1,147,000	366,375,000	34,457,000	5,313,000	6,149,000

9.25. BUC32 - Grid

A *Grid* information model is a pseudo metapattern which uses the presentation characteristics of the columns and rows of a table to model information. Because the grid models presentation information and not business semantics, it cannot be considered a metapattern. However, the grid is included in this list because the US GAAP Taxonomy uses a grid information model to model the statement of changes in equity. A grid is more of a technique for presenting information than a business use case.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC32-Grid/Index.html

9.25.1. Visual Example

Sample Company
December 31,
(thousands of dollars)

	Common Stock	Additional Paid-in Capital	Retained Earnings (Accumulated Deficit)	Equity
Balance at December 31, 2009	150,000	50,000	200,000	400,000
Net Income (Loss)			200,000	200,000
Dividends			-100,000	-100,000
Common Stock Issued	25,000	25,000		50,000
Balance at December 31, 2010	175,000	75,000	300,000	550,000

9.25.2. Metapattern(s) employed

Grid pseudo metapattern

9.25.3. Description

With the *Grid* pseudo metapattern, each of the columns of the presentation identified and articulated as a [Member] of an [Axis]. In this business use case the [Axis] is "Equity Component [Axis]" which has four [Member]s as there are four columns. The [Line Items] indicate the rows of the grid. In this case the rows are actually a roll forward. The cells of the grid represent intersections of the columns [Axis] and the [Line Items].

9.25.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**90000 - Statement of Changes in Equity**	[Network]		
2	**Statement of Changes in Equity [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Equity Component [Axis]**	[Axis]		
6	Equity [Member]	[Member]		
7	Common Stock [Member]	[Member]		
8	Additional Paid-in Capital [Member]	[Member]		
9	Retained Earnings (Accumulated Deficit) [Member]	[Member]		
10	**Statement of Changes in Equity [Line Items]**	[Line Items]		
11	Statement of Changes in Equity [Grid]	[Abstract]		
12	Equity, Beginning Balance	[Concept] Monetary	As Of	Debit
13	Net Income (Loss)	[Concept] Monetary	For Period	Credit
14	Dividends	[Concept] Monetary	For Period	Debit
15	Common Stock Issued	[Concept] Monetary	For Period	Credit
16	Equity, Ending Balance	[Concept] Monetary	As Of	Debit

9.25.5. Important characteristics and dynamics

While the grid pseudo metapattern makes for easy rendering of information, it has to very significant negative aspects. Clues of these negative aspects become clear by closely examining the fact table of this business use case.

- The Equity Component [Axis] which is generally unique to the [Table] the grid is modelling causes duplication of concepts. For example, the "Net Income (Loss)" which will likely appear in other locations in a report such as a financial statement have either the "Equity [Member]" or "Retained Earnings (Accumulated Deficit) [Member]" characteristics of the "Equity Component [Axis]". This causes these concept to not fit elsewhere in a report.
- A second negative side affect is that the [Line Items] concept which is used is used in every column. For example, the "Net Income (Loss)" concept is used in all columns where "Net Income (Loss)" appears. However, in a financial statement the concepts would actually be different. For example if a report contained a noncontrolling interest the net income concepts would be: Net Income (Loss) Applicable to Parent, Net Income (Loss) Attributable to Noncontrolling Interest, and Net Income (Loss) (i.e. the total including the portion attributable to the parent plus the portion attributable to the noncontrolling interest).
- Note the XBRL Formulas used to verify the computations of the information, in particular the second formula.

The following is a screen shot of the fact table for the information in this report where you can see the impact of the Equity Component [Axis] on the facts:

brm:ConceptAxis	brm:ReportingEntityAxis	brm:PeriodAxis	frm:LegalEntityAxis	pattern:EquityComponentAxis	FactValue
pattern:Dividends	SAMP (http://www.SampleCompany.com)	2010-01-01/2010-12-31	frm:ConsolidatedEntityMember	pattern:EquityMember	100000
pattern:Dividends	SAMP (http://www.SampleCompany.com)	2010-01-01/2010-12-31	frm:ConsolidatedEntityMember	pattern:RetainedEarningsAccumulatedDeficitMember	100000
pattern:CommonStockIssued	SAMP (http://www.SampleCompany.com)	2010-01-01/2010-12-31	frm:ConsolidatedEntityMember	pattern:EquityMember	50000
pattern:CommonStockIssued	SAMP (http://www.SampleCompany.com)	2010-01-01/2010-12-31	frm:ConsolidatedEntityMember	pattern:CommonStockMember	25000
pattern:CommonStockIssued	SAMP (http://www.SampleCompany.com)	2010-01-01/2010-12-31	frm:ConsolidatedEntityMember	pattern:AdditionalPaidInCapitalMember	25000
pattern:NetIncomeLoss	SAMP (http://www.SampleCompany.com)	2010-01-01/2010-12-31	frm:ConsolidatedEntityMember	pattern:EquityMember	200000
pattern:NetIncomeLoss	SAMP (http://www.SampleCompany.com)	2010-01-01/2010-12-31	frm:ConsolidatedEntityMember	pattern:RetainedEarningsAccumulatedDeficitMember	200000
pattern:Equity	SAMP (http://www.SampleCompany.com)	2009-12-31	frm:ConsolidatedEntityMember	pattern:EquityMember	300000
pattern:Equity	SAMP (http://www.SampleCompany.com)	2010-12-31	frm:ConsolidatedEntityMember	pattern:EquityMember	450000
pattern:Equity	SAMP (http://www.SampleCompany.com)	2009-12-31	frm:ConsolidatedEntityMember	pattern:CommonStockMember	150000
pattern:Equity	SAMP (http://www.SampleCompany.com)	2010-12-31	frm:ConsolidatedEntityMember	pattern:CommonStockMember	175000
pattern:Equity	SAMP (http://www.SampleCompany.com)	2009-12-31	frm:ConsolidatedEntityMember	pattern:AdditionalPaidInCapitalMember	50000
pattern:Equity	SAMP (http://www.SampleCompany.com)	2010-12-31	frm:ConsolidatedEntityMember	pattern:AdditionalPaidInCapitalMember	75000
pattern:Equity	SAMP (http://www.SampleCompany.com)	2009-12-31	frm:ConsolidatedEntityMember	pattern:RetainedEarningsAccumulatedDeficitMember	200000
pattern:Equity	SAMP (http://www.SampleCompany.com)	2010-12-31	frm:ConsolidatedEntityMember	pattern:RetainedEarningsAccumulatedDeficitMember	300000

9.25.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	90000 - Statement of Changes in Equity (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/Grid/StatementOfChangesInEquity)
Table:	Statement of Changes in Equity [Table] (pattern:StatementChangesInEquityTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	iso4217:USD

	pattern:EquityComponentAxis			
brm:ConceptAxis	Equity [Member]	Common Stock [Member]	Additional Paid-in Capital [Member]	Retained Earnings (Accumulated Deficit) [Member]
Statement of Changes in Equity [Grid]				
Equity, Beginning Balance	400,000	150,000	50,000	200,000
Net Income (Loss)	200,000			200,000
Dividends	(100,000)			(100,000)
Common Stock Issued	50,000	25,000	25,000	
Equity, Ending Balance	550,000	175,000	75,000	300,000

9.26. BUC34 - Pivot Table

The *Pivot Table* business use case shows how to model information which might commonly be used within an Excel pivot table.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC34-PivotTable/Index.html

9.26.1. Visual Example

Sample Company
For Period Ending December 31,
(thousands of dollars)

	2010	2009	2008
Sales, all Business Segments, all Geographic Areas	32,038	35,805	32,465
Breakdown by Business Segment:			
Pharmaceuticals	20,181	18,150	15,275
Generics	2,433	1,973	1,823
Consumer Health	6,675	6,514	5,752
Other Segments	2,749	9,168	9,615
Breakdown by Geographic Area:			
North America	10,214	12,649	10,137
Europe	11,901	10,374	10,396
Asia	5,639	4,371	3,210
Other regions	4,284	8,411	8,722

9.26.2. Metapattern(s) employed

Any, example uses Hierarchy

9.26.3. Description

The *Pivot Table* business use case shows information which might commonly populate an electronic spreadsheet pivot table. In this case, although there are 27 fact values, only one concept is utilized, "Sales". The one concept is expressed with characteristics which indicate which business segment and which geographic area that sales fact value relates to. This is done using the Business Segment [Axis] and Geographic Area [Axis] to differentiate the facts.

9.26.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Sales Analysis, by Business Segment**	[Network]		
2	**Sales Analysis, by Business Segment [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Business Segment [Axis]**	[Axis]		
6	Business Segments, All [Member]	[Member]		
7	Pharmaceuticals Segment [Member]	[Member]		
8	Generics Segment [Member]	[Member]		
9	Consumer Health Segment [Member]	[Member]		
10	Other Segments [Member]	[Member]		
11	**Geographic Area [Axis]**	[Axis]		
12	Geographic Areas, All [Member]	[Member]		
13	**Sales Analysis, by Business Segment [Line Items]**	[Line Items]		
14	Sales Analysis, by Business Segment [Hierarchy]	[Abstract]		
15	Sales	[Concept] Monetary	For Period	Credit

15	**Sales Analysis, by Geographic Area**	[Network]		
16	**Sales Analysis, by Geographic Area [Table]**	[Table]		
17	**Legal Entity [Axis]**	[Axis]		
18	Consolidated Entity [Member]	[Member]		
19	**Business Segment [Axis]**	[Axis]		
20	Business Segments, All [Member]	[Member]		
21	**Geographic Area [Axis]**	[Axis]		
22	Geographic Areas, All [Member]	[Member]		
23	North America Region [Member]	[Member]		
24	Europe Region [Member]	[Member]		
25	Asia Region [Member]	[Member]		
26	Other Regions [Member]	[Member]		
27	**Sales Analysis, by Geographic Area [Line Items]**	[Line Items]		
28	Sales Analysis, by Geographic Area [Hierarchy]	[Abstract]		
29	Sales	[Concept] Monetary	For Period	Credit

29	**Sales Analysis, Summary**	[Network]		
30	**Sales Analysis, Summary [Table]**	[Table]		
31	**Legal Entity [Axis]**	[Axis]		
32	Consolidated Entity [Member]	[Member]		
33	**Business Segment [Axis]**	[Axis]		
34	Business Segments, All [Member]	[Member]		
35	**Geographic Area [Axis]**	[Axis]		
36	Geographic Areas, All [Member]	[Member]		
37	**Sales Analysis, Summary [Line Items]**	[Line Items]		
38	Sales Analysis, Summary [Hierarchy]	[Abstract]		
39	Sales	[Concept] Monetary	For Period	Credit

9.26.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- In a spreadsheet pivot table totals are generally not provided, rather the pivot table computes the totals as needed. However, in this example the totals are provided.
- Alternatively, this information could have been modelled as all concepts, rather than using the [Axis] to express the business segment and geographic area. However doing so would make the pivot table less usable. Note the *Class* business use case as contrast to the *Roll Up* business use case.
- Notice that there are three sections of this report: totals, a business segment breakdown, and a geographic area breakdown. Each of these is articulated in different [Table]s of information. Alternatively, one single [Table] could have been used; however, it would be less clear that two breakdowns were required.
- Notice that the [Table]s are not in the desired order in the relations rendering. This is because the software application is using the alphabetic order of the label of each network to determine the ordering or sequencing of the network. Note the Flow business use case in contrast which shows how to add an ordering of networks and/or [Table]s.

9.26.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Sales Analysis, by Business Segment (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/PivotTable/SalesAnalysisByBusinessSegment)
Table:	Sales Analysis, by Business Segment [Table] (pattern:SalesAnalysisByBusinessSegmentTable)
Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
frm:GeographicAreaAxis	frm:GeographicAreasAllMember
brm:ConceptAxis	pattern:Sales
brm:Units	iso4217:USD

	frm:BusinessSegmentAxis				
brm:PeriodAxis	Business Segments, All [Member]	Pharmaceuticals Segment [Member]	Generics Segment [Member]	Consumer Health Segment [Member]	Other Segments [Member]
2010-01-01/2010-12-31	32,038,000	20,181,000	2,433,000	6,675,000	2,749,000
2009-01-01/2009-12-31	32,805,000	18,150,000	1,973,000	6,514,000	9,168,000
2009-01-01/2009-12-31	32,465,000	15,275,000	1,823,000	5,752,000	9,615,000

Fact Group (Combination of Network and Table)	
Network:	Sales Analysis, by Geographic Area (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/PivotTable/SalesAnalysisByGeographicArea)
Table:	Sales Analysis, by Geographic Area [Table] (pattern:SalesAnalysisByGeographicAreaTable)
Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
frm:BusinessSegmentAxis	frm:BusinessSegmentsAllMember
brm:ConceptAxis	pattern:Sales
brm:Units	iso4217:USD

	frm:GeographicAreaAxis				
brm:PeriodAxis	Geographic Areas, All [Member]	North America Region [Member]	Europe Region [Member]	Asia Region [Member]	Other Regions [Member]
2010-01-01/2010-12-31	32,038,000	10,214,000	11,901,000	5,639,000	4,284,000
2009-01-01/2009-12-31	35,805,000	12,649,000	10,374,000	4,371,000	8,411,000
2008-01-01/2008-12-31	32,465,000	10,137,000	10,396,000	3,210,000	8,722,000

Fact Group (Combination of Network and Table)	
Network:	Sales Analysis, Summary (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/PivotTable/SalesAnalysisSummary)
Table:	Sales Analysis, Summary [Table] (pattern:SalesAnalysisSummaryTable)
Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
frm:BusinessSegmentAxis	frm:BusinessSegmentsAllMember
frm:GeographicAreaAxis	frm:GeographicAreasAllMember
brm:Units	iso4217:USD

	brm:PeriodAxis		
brm:ConceptAxis	2008-01-01/2008-12-31	2009-01-01/2009-12-31	2010-01-01/2010-12-31
Sales Analysis, Summary [Hierarchy]			
Sales	32,465,000	35,805,000	32,038,000

9.27. BUC35 - Grouped Report

The *Grouped Report* business use case is a variation of the *Compound Fact* use case which uses a large number of [Axis]. As such, what this use case shows is complexity in the area of [Axis]. It also introduces the notion of groupings or levels within a report which summarizes information.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC35-GroupedReport/Index.html

9.27.1. Visual Example

Sample Company
For Period Ending December 31, 2010
Investments

Shares	Description	Moody's Rating	S & P Rating	Value
SHORT-TERM INVESTMENTS				
Singapore				
SGD				
Software				
	Microcom			
11,500	11500000	A1	A+	12,993,736
5,000	5000000	Aa3	A-	5,662,500
Telecoms				
	Cable and Wireless Optus Finance			
5,800	5800000	A2	A+	6,857,321
			Total Singapore	25,513,557
			Total Short-Term Investments	25,513,557
			Total Investments	25,513,557

9.27.2. Metapattern(s) employed

Compound Fact, example uses Hierarchy

9.27.3. Description

The *Grouped Report* business use cases shows that additional characteristics can be provided for an information set in the form of one or more [Axis]. In this use case five [Axis] are used to communicate characteristics of the information set. Other characteristics, such as the ratings in this case, are articulated as concepts within the set of [Line Items]. Where these characteristics are modelled does impact how the information can be used.

Also notice the visualization of the example, consider how the information is grouped. While this business use case shows only a few report rows, there could be a long list of items being reported and multiple grouping levels based on the different [Axis] or even the [Line Items].

9.27.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Portfolio of Investments**	[Network]		
2	**Portfolio of Investments [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Investment Term [Axis]**	[Axis]		
6	All Terms [Member]	[Member]		
7	Long-Term Investment [Member]	[Member]		
8	Short-Term Investment [Member]	[Member]		
9	**Investment Type [Axis]**	[Axis]		
10	All Types [Member]	[Member]		
11	Telecoms [Member]	[Member]		
12	Software [Member]	[Member]		
13	**Investment Country [Axis]**	[Axis]		
14	All Countries [Member]	[Member]		
15	Singapore [Member]	[Member]		
16	Australia [Member]	[Member]		
17	**Investment Entity [Axis]**	[Axis]		
18	All Entities [Member]	[Member]		
19	EFIC [Member]	[Member]		
20	Cable and Wireless Optus Finance [Member]	[Member]		
21	Microcom [Member]	[Member]		
22	**Investments [Line Items]**	[Line Items]		
23	Investment Description	[Concept] Text/String	As Of	
24	Moody Rating	[Concept] Text/String	As Of	
25	Standard and Poor Rating	[Concept] Text/String	As Of	
26	Investment Shares	[Concept] Shares	As Of	
27	Investment Value, at Cost	[Concept] Monetary	As Of	

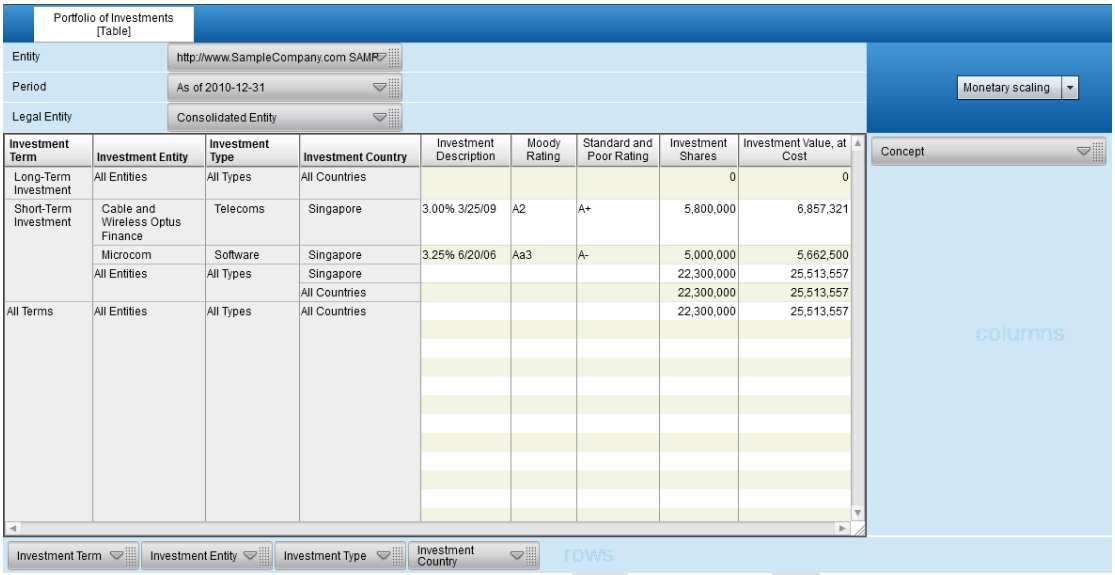
9.27.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- The *Grouped Report* business use case simply shows a [Table] which has a larger number of [Axis].
- Nothing is really complicated about the use case as compared to other use cases other than the large number of [Axis] which are used to characterize the investment information.
- A choice needs to be made in many cases to determine if information should be modelled as an [Axis] or as a concept within the set of [Line Items]. For example, in this case the Moody Rating and Standard and Poor Rating might have been modelled as an [Axis]. Likewise the Investment Description could have been modelled as an [Axis].
- Monetary values such as Investment Shares and Investment Value, at Cost would never be modelled as an [Axis] generally.
- Where things are modelled impacts how they are treated by a rendering application.

9.27.6. Basic automated rendering

Note that none of these renderings are optimal.



Investment Term	Investment Entity	Investment Type	Investment Country	Investment Description	Moody Rating	Standard and Poor Rating	Investment Shares	Investment Value, at Cost
Long-Term Investment	All Entities	All Types	All Countries				0	0
Short-Term Investment	Cable and Wireless Optus Finance	Telecoms	Singapore	3.00% 3/25/09	A2	A+	5,800,000	6,857,321
	Microcom	Software	Singapore	3.25% 6/20/06	Aa3	A-	5,000,000	5,662,500
	All Entities	All Types	Singapore				22,300,000	25,513,557
			All Countries				22,300,000	25,513,557
All Terms	All Entities	All Types	All Countries				22,300,000	25,513,557

Portfolio of Investments

IDENTIFIER: SAMP - HTTP://WWW.SAMPLECOMPANY

DATE: 2010-12-31

LEGAL ENTITY [AXIS]: CONSOLIDATED ENTITY [MEMBER]

(IN THOUSANDS)				UNIT	USD	SHARES
				ITEM	INVESTMENT VALUE, AT COST	INVESTMENT SHARES
INVESTMENT TERM [AXIS]	INVESTMENT COUNTRY [AXIS]	INVESTMENT ENTITY [AXIS]	INVESTMENT TYPE [AXIS]			
ALL TERMS [MEMBER]	ALL COUNTRIES [MEMBER]	ALL ENTITIES [MEMBER]	ALL TYPES [MEMBER]		25,513,557	22,300
LONG-TERM INVESTMENT [MEMBER]	ALL COUNTRIES [MEMBER]	ALL ENTITIES [MEMBER]	ALL TYPES [MEMBER]		0	0
SHORT-TERM INVESTMENT [MEMBER]	ALL COUNTRIES [MEMBER]	ALL ENTITIES [MEMBER]	ALL TYPES [MEMBER]		25,513,557	22,300
	SINGAPORE [MEMBER]	ALL ENTITIES [MEMBER]	ALL TYPES [MEMBER]		25,513,557	22,300
		CABLE AND WIRELESS OPTUS FINANCE [MEMBER]	TELECOMS [MEMBER]		6,857,321	5,800
		MICROCOM [MEMBER]	SOFTWARE [MEMBER]		12,993,736	11,500

IDENTIFIER: SAMP - HTTP://WWW.SAMPLECOMPANY

DATE: 2010-12-31

LEGAL ENTITY [AXIS]: CONSOLIDATED ENTITY [MEMBER]

LANG: [ALL]

				ITEM	INVESTMENT DESCRIPTION	MOODY RATING	STANDARD AND POOR RATING
INVESTMENT TERM [AXIS]	INVESTMENT COUNTRY [AXIS]	INVESTMENT TYPE [AXIS]	INVESTMENT ENTITY [AXIS]				
SHORT-TERM INVESTMENT [MEMBER]	SINGAPORE [MEMBER]	TELECOMS [MEMBER]	CABLE AND WIRELESS OPTUS FINANCE [MEMBER]		3.00% 3/25/09	A2	A+
		SOFTWARE [MEMBER]	MICROCOM [MEMBER]		3.50% 12/7/04	A1	A+

9.28. BUC36 – Flow

The *Flow* business use case models how to articulate the sequence or ordering of information within a business report.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC36-Flow/Index.html

9.28.1. Visual Example

Sample Company
For Period Ending December 31,
(thousands of dollars)

	2010	2009	2008
Sales, all Business Segments, all Geographic Areas	32,038	35,805	32,465
Breakdown by Business Segment:			
Pharmaceuticals	20,181	18,150	15,275
Generics	2,433	1,973	1,823
Consumer Health	6,675	6,514	5,752
Other Segments	2,749	9,168	9,615
Breakdown by Geographic Area:			
North America	10,214	12,649	10,137
Europe	11,901	10,374	10,396
Asia	5,639	4,371	3,210
Other regions	4,284	8,411	8,722

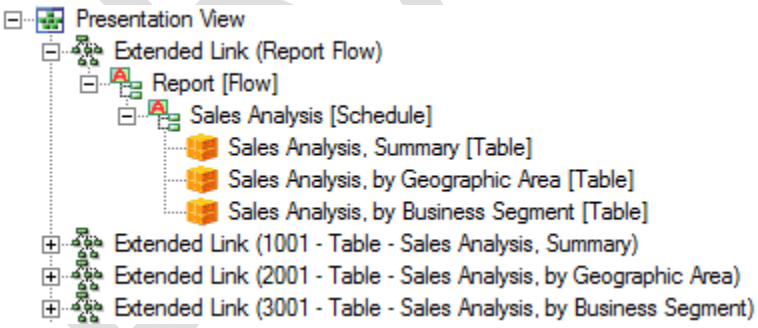
9.28.2. Metapattern(s) employed

Any, example uses Hierarchy

9.28.3. Description

The *Flow* business use case shows that business reports have an ordering or sequence and how to model that sequence within an XBRL taxonomy by creating what amounts to a hierarchy of [Tables].

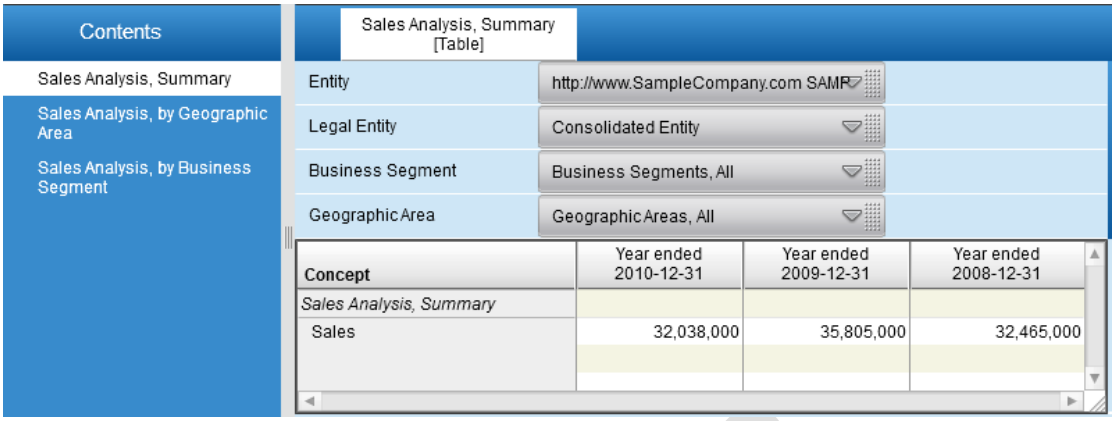
Expressing the hierarchy of [Table]s can be achieved using a number of approaches. Using the diagram below we will explain the approaches.



The first approach is used by the US GAAP Taxonomy and ordering is achieved by adding a "number" and a "category" to the network label. In the screen shot above see the last three items within the presentation view tree. A software application can order the networks using the numbers, the category, or any part of the label.

The second approach, used in this example, shows a hierarchy of [Table]s expressed within the presentation view within a separate network. You can see this above in the "Report Flow" network. In this example the list is flat, but it could be a nested hierarchy.

The screen shot below shows an application which utilizes the network numbers to organize the networks. The selected network and [Table] is selected on the left and displayed in the software application on the right.



9.28.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**1001 - Table - Sales Analysis, Summary**	[Network]		
2	**Sales Analysis, Summary [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Business Segment [Axis]**	[Axis]		
6	Business Segments, All [Member]	[Member]		
7	**Geographic Area [Axis]**	[Axis]		
8	Geographic Areas, All [Member]	[Member]		
9	**Sales Analysis, Summary [Line Items]**	[Line Items]		
10	Sales Analysis, Summary [Hierarchy]	[Abstract]		
11	Sales	[Concept] Monetary	For Period	Credit
11	**2001 - Table - Sales Analysis, by Geographic Area**	[Network]		
12	**Sales Analysis, by Geographic Area [Table]**	[Table]		
13	**Legal Entity [Axis]**	[Axis]		
14	Consolidated Entity [Member]	[Member]		
15	**Business Segment [Axis]**	[Axis]		
16	Business Segments, All [Member]	[Member]		
17	**Geographic Area [Axis]**	[Axis]		
18	Geographic Areas, All [Member]	[Member]		
19	North America Region [Member]	[Member]		
20	Europe Region [Member]	[Member]		
21	Asia Region [Member]	[Member]		
22	Other Regions [Member]	[Member]		
23	**Sales Analysis, by Geographic Area [Line Items]**	[Line Items]		
24	Sales Analysis, by Geographic Area [Hierarchy]	[Abstract]		
25	Sales	[Concept] Monetary	For Period	Credit
25	**3001 - Table - Sales Analysis, by Business Segment**	[Network]		
26	**Sales Analysis, by Business Segment [Table]**	[Table]		
27	**Legal Entity [Axis]**	[Axis]		
28	Consolidated Entity [Member]	[Member]		
29	**Business Segment [Axis]**	[Axis]		
30	Business Segments, All [Member]	[Member]		
31	Pharmaceuticals Segment [Member]	[Member]		
32	Generics Segment [Member]	[Member]		
33	Consumer Health Segment [Member]	[Member]		
34	Other Segments [Member]	[Member]		
35	**Geographic Area [Axis]**	[Axis]		
36	Geographic Areas, All [Member]	[Member]		
37	**Sales Analysis, by Business Segment [Line Items]**	[Line Items]		
38	Sales Analysis, by Business Segment [Hierarchy]	[Abstract]		
39	Sales	[Concept] Monetary	For Period	Credit

This network shows the report flow being expressed within the Report Flow network.

*	Network: Report Flow (http://www.xbrlsite.com/Schemas/brm/roles/Flow)	
39	pattern:Report [Flow]	brm:flowItem
40	pattern:Sales Analysis [Schedule]	brm:scheduleItem
41	pattern:Sales Analysis, Summary [Table]	[Table]
42	pattern:Sales Analysis, by Geographic Area [Table]	[Table]
43	pattern:Sales Analysis, by Business Segment [Table]	[Table]

9.28.5. *Important characteristics and dynamics*

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- There is no standard approach to expressing the specific ordering or sequence within a business report.
- One approach to expressing an ordering or sequence is to add a number and category to a network label. If the application supports that approach, the number and category can be used for ordering/sequencing.
- Another approach is to express a hierarchy of [Table]s within the presentation or definition linkbase. This is not a standard approach, however it can be effective and provide a nested hierarchy. Note that networks cannot be nested.
- Contrast this use case with the *Pivot Table* use case which does not provide the flow information, but all other aspects of the use case are the same.

9.28.6. *Basic automated rendering*

Fact Group (Combination of Network and Table)	
Network:	1001 - Table - Sales Analysis, Summary (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/Flow/SalesAnalysisSummary)
Table:	Sales Analysis, Summary [Table] (pattern:SalesAnalysisSummaryTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
frm:BusinessSegmentAxis	frm:BusinessSegmentsAllMember
frm:GeographicAreaAxis	frm:GeographicAreasAllMember
brm:Units	iso4217:USD

	brm:PeriodAxis		
brm:ConceptAxis	2008-01-01/2008-12-31	2009-01-01/2009-12-31	2010-01-01/2010-12-31
Sales Analysis, Summary [Hierarchy]			
Sales	32,465,000	35,805,000	32,038,000

Fact Group (Combination of Network and Table)	
Network:	2001 - Table - Sales Analysis, by Geographic Area (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/Flow/SalesAnalysisByGeographicArea)
Table:	Sales Analysis, by Geographic Area [Table] (pattern:SalesAnalysisByGeographicAreaTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
frm:BusinessSegmentAxis	frm:BusinessSegmentsAllMember
brm:ConceptAxis	pattern:Sales
brm:Units	iso4217:USD

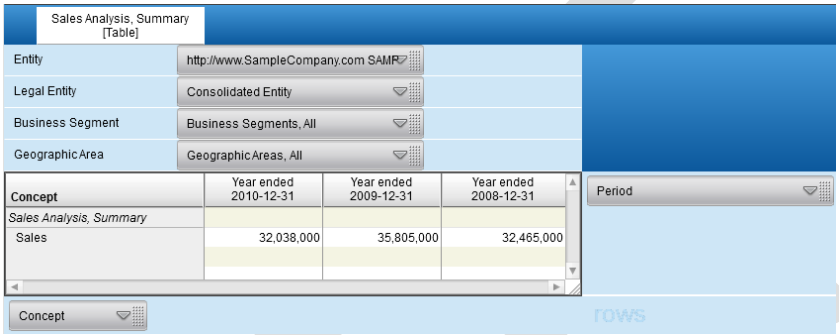
	frm:GeographicAreaAxis				
brm:PeriodAxis	Geographic Areas, All [Member]	North America Region [Member]	Europe Region [Member]	Asia Region [Member]	Other Regions [Member]
2010-01-01/2010-12-31	32,038,000	10,214,000	11,901,000	5,639,000	4,284,000
2009-01-01/2009-12-31	35,805,000	12,649,000	10,374,000	4,371,000	8,411,000
2008-01-01/2008-12-31	32,465,000	10,137,000	10,396,000	3,210,000	8,722,000

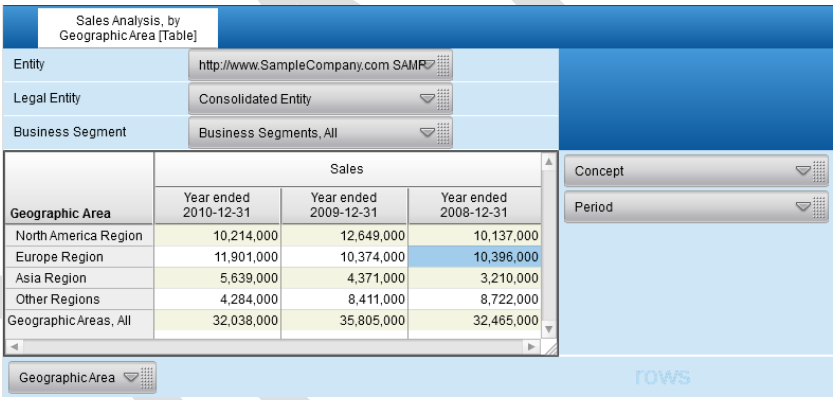
Fact Group (Combination of Network and Table)	
Network:	3001 - Table - Sales Analysis, by Business Segment (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/Flow/SalesAnalysisByBusinessSegment)
Table:	Sales Analysis, by Business Segment [Table] (pattern:SalesAnalysisByBusinessSegmentTable)

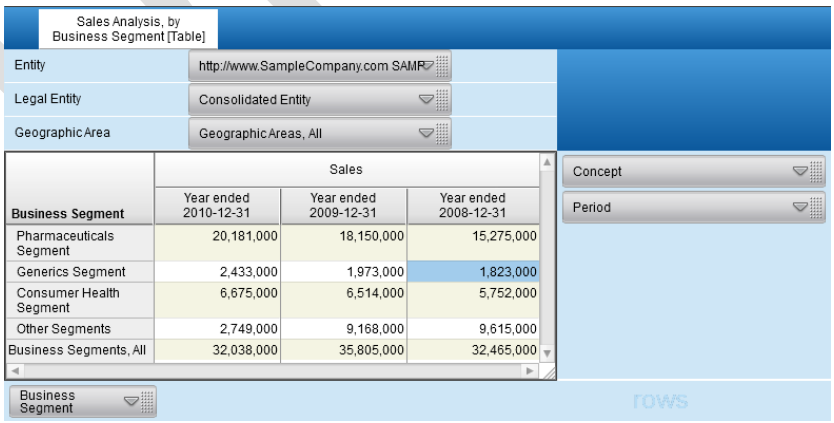
Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
frm:GeographicAreaAxis	frm:GeographicAreasAllMember
brm:ConceptAxis	pattern:Sales
brm:Units	iso4217:USD

	frm:BusinessSegmentAxis				
brm:PeriodAxis	Business Segments, All [Member]	Pharmaceuticals Segment [Member]	Generics Segment [Member]	Consumer Health Segment [Member]	Other Segments [Member]
2010-01-01/2010-12-31	32,038,000	20,181,000	2,433,000	6,675,000	2,749,000
2009-01-01/2009-12-31	32,805,000	18,150,000	1,973,000	6,514,000	9,168,000
2009-01-01/2009-12-31	32,465,000	15,275,000	1,823,000	5,752,000	9,615,000

XBRL Cloud renderings:







9.29. BUC41 – Restatement

The *Restatement* business use case shows how to model an accounting restatement due to a change in accounting policy or the correction of an error. It also points out the notion of integrity between [Table]s within a business report.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC41-Restatement/Index.html

9.29.1. Visual Example

Sample Company
December 31,
(dollars)

	2010	2009 (Restated)
Balance Sheet (Fragment)		
Equity		
Common Stock	5,000,000	5,000,000
Retained Earnings	10,850,000	10,700,000
Total Equity	15,850,000	15,700,000

	2010	2009 (Restated)	2009 *(Previous)*
Income Statement (Fragment)			
Gross Sales	1,500,000	1,000,000	*1,000,000*
Cost of sales	500,000	200,000	*200,000*
Net sales	1,000,000	800,000	*800,000*
Operating expenses (*)	350,000	1,600,000	*300,000*
Net income (loss)	650,000	-800,000	*500,000*

Statement of Changes in Equity (Fragment)	2010	2009
Prior Period Adjustment		
Retained Earnings (Accumulated Losses), Originally Stated 2009	12,000,000	
Change in Accounting Policy	0	
Correction of an Error	-1,300,000	
Retained Earnings (Accumulated Losses), Restated 2009 Beginning Balance	10,700,000	
Changes in Equity		
Retained Earnings (Accumulated Losses), Beginning Balance	10,700,000	12,300,000
Net Income (Loss)	650,000	-800,000
Dividends	-500,000	-800,000
Retained Earnings (Accumulated Losses), Ending Balance	10,850,000	10,700,000

9.29.2. Metapattern(s) employed

Roll Forward, Roll Up, Adjustment

9.29.3. Description

The *Restatement* business use case shows how to model an accounting restatement due to a prior period adjustment from an accounting error or a change in accounting policy. Also see the *Adjustment* business use case.

Note that the balance sheet is a *Roll Up* as is the income statement. The prior period adjustment is an *Adjustment* metapattern. The changes in equity is a *Roll Forward*.

The different [Table]s need to properly relate to one another just like components of a financial statement need to properly tie together.

9.29.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Balance Sheet (Fragnent)**	[Network]		
2	**Balance Sheet [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Report Date [Axis]**	[Axis]		
6	Report Dates, All [Member]	[Member]		
7	Reported March 18, 2011 [Member]	[Member]		
8	**Balance Sheet [Line Items]**	[Line Items]		
9	Equity [Roll Up]	[Abstract]		
10	Common Stock	[Concept] Monetary	As Of	Credit
11	Retained Earnings (Accumulated Losses)	[Concept] Monetary	As Of	Credit
12	Equity	[Concept] Monetary	As Of	Credit
12	**Changes in Equity (Fragment)**	[Network]		
13	**Changes in Equity [Table]**	[Table]		
14	**Legal Entity [Axis]**	[Axis]		
15	Consolidated Entity [Member]	[Member]		
16	**Report Date [Axis]**	[Axis]		
17	Report Dates, All [Member]	[Member]		
18	Reported March 21, 2010 [Member]	[Member]		
19	Reported March 18, 2011 [Member]	[Member]		
20	**Changes in Equity [Line Items]**	[Line Items]		
21	Changes in Retained Earnings [Roll Forward]	[Abstract]		
22	Retained Earnings (Accumulated Losses), Beginning Balance	[Concept] Monetary	As Of	Credit
23	Retained Earnings (Accumulated Losses), Period Increase (Decrease), Total [Roll Up]	[Abstract]		
24	Net Income (Loss)	[Concept] Monetary	For Period	Credit
25	Dividends Paid	[Concept] Monetary	For Period	Debit
26	Retained Earnings (Accumulated Losses), Period Increase (Decrease), Total	[Concept] Monetary	For Period	Credit
27	Retained Earnings (Accumulated Losses), Ending Balance	[Concept] Monetary	As Of	Credit
27	**Income Statement (Fragnent)**	[Network]		
28	**Income Statement [Table]**	[Table]		
29	**Legal Entity [Axis]**	[Axis]		
30	Consolidated Entity [Member]	[Member]		
31	**Report Date [Axis]**	[Axis]		
32	Report Dates, All [Member]	[Member]		
33	Reported March 21, 2010 [Member]	[Member]		
34	Reported March 18, 2011 [Member]	[Member]		
35	**Income Statement [Line Items]**	[Line Items]		
36	Net Income (Loss) [Roll Up]	[Abstract]		
37	Sales, Net [Roll Up]	[Abstract]		
38	Sales, Gross	[Concept] Monetary	For Period	Credit
39	Cost of Sales	[Concept] Monetary	For Period	Debit
40	Sales, Net	[Concept] Monetary	For Period	Credit
41	Operating Expenses	[Concept] Monetary	For Period	Debit
42	Net Income (Loss)	[Concept] Monetary	For Period	Credit
42	**Prior Period Adjustments**	[Network]		
43	**Prior Period Adjustments [Table]**	[Table]		
44	**Legal Entity [Axis]**	[Axis]		
45	Consolidated Entity [Member]	[Member]		
46	**Report Date [Axis]**	[Axis]		
47	Report Dates, All [Member]	[Member]		
48	Reported March 21, 2010 [Member]	[Member]		
49	Reported March 18, 2011 [Member]	[Member]		
50	**Prior Period Adjustments [Line Items]**	[Line Items]		
51	Prior Period Adjustments to Retained Earnings [Adjustment]	[Abstract]		
52	Retained Earnings (Accumulated Losses), Origionally Stated	[Concept] Monetary	As Of	Credit
53	Prior Period Adjustments, Period Increase (Decrease), Total [Roll Up]	[Abstract]		
54	Changes in Accounting Policy	[Concept] Monetary	As Of	Credit
55	Correction of an Error	[Concept] Monetary	As Of	Credit
56	Changes in Accounting Policy	[Concept] Monetary	As Of	Credit
57	Retained Earnings (Accumulated Losses), Restated	[Concept] Monetary	As Of	Credit

9.29.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- Note the *Roll Up*, *Roll Forward*, and *Adjustment* business use cases for detailed information about those specific use cases. This use case points out how different components relate to one another.
- Notice how the moving pieces of this use case impact multiple areas of the business report shown in this use case namely the balance sheet, income statement, and the statement of changes in equity.
- The [Axis] used on each [Table] are logical and the different facts properly relate to one another.
- Facts in the XBRL instance are not duplicated. Net Income (Loss), for example, appears on both the income statement and in the statement of changes in equity. Likewise, Retained Earnings (Accumulated Losses) appears on both the balance sheet and the statement of changes in equity.
- The prior period adjustment and the changes in equity are modelled in separate [Table]s because the renderings have different slicers, columns and rows.

9.29.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Balance Sheet (Fragnent) (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/Restatement/BalanceSheet)
Table:	Balance Sheet [Table] (pattern:BalanceSheetTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
frm:ReportDateAxis	pattern:ReportedMarch182011Member
brm:Units	iso4217:USD

	brm:PeriodAxis		
brm:ConceptAxis	2008-12-31	2009-12-31	2010-12-31
Equity [Roll Up]			
Common Stock		5,000,000	5,000,000
Retained Earnings (Accumulated Losses)	12,300,000	10,700,000	10,850,000
Equity		15,700,000	15,850,000

Fact Group (Combination of Network and Table)	
Network:	Income Statement (Fragnent) (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/Restatement/IncomeStatement)
Table:	Income Statement [Table] (pattern:IncomeStatementTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	iso4217:USD

	frm:ReportDateAxis		
	Reported March 18, 2011 [Member]		Reported March 21, 2010 [Member]
	brm:PeriodAxis		brm:PeriodAxis
brm:ConceptAxis	2010-01-01/2010-12-31	2009-01-01/2009-12-31	2009-01-01/2009-12-31
Net Income (Loss) [Roll Up]			
Sales, Net [Roll Up]			
Sales, Gross	1,500,000	1,000,000	
Cost of Sales	500,000	200,000	
Sales, Net	1,000,000	800,000	800,000
Operating Expenses	350,000	1,600,000	300,000
Net Income (Loss)	650,000	(800,000)	500,000

Fact Group (Combination of Network and Table)	
Network:	Prior Period Adjustments (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/Restatement/PriorPeriodAdjustments)
Table:	Prior Period Adjustments [Table] (pattern:PriorPeriodAdjustmentsTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	iso4217:USD

brm:ConceptAxis	frm:ReportDateAxis	Fact Value
Prior Period Adjustments to Retained Earnings [Adjustment]		
Retained Earnings (Accumulated Losses), Origionally Stated	Reported March 21, 2010 [Member]	12,000,000
Prior Period Adjustments, Period Increase (Decrease), Total [Roll Up]		
Changes in Accounting Policy	Reported March 18, 2011 [Member]	0
Correction of an Error	Reported March 18, 2011 [Member]	(1,300,000)
Prior Period Adjustments, Period Increase (Decrease), Total	Reported March 18, 2011 [Member]	(1,300,000)
Retained Earnings (Accumulated Losses), Restated	Reported March 18, 2011 [Member]	10,700,000

Fact Group (Combination of Network and Table)	
Network:	Changes in Equity (Fragment) (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/Restatement/ChangesInEquity)
Table:	Changes in Equity [Table] (pattern:ChangesInEquityTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
frm:ReportDateAxis	Reported March 18, 2011 [Member]
brm:Units	iso4217:USD

	brm:PeriodAxis	
brm:ConceptAxis	2010-12-31	2009-12-31
Changes in Retained Earnings [Roll Forward]		
Retained Earnings (Accumulated Losses), Beginning Balance	10,700,000	12,300,000
Retained Earnings (Accumulated Losses), Period Increase (Decrease), Total [Roll Up]		
Net Income (Loss)	650,000	(800,000)
Dividends Paid	(500,000)	(800,000)
Retained Earnings (Accumulated Losses), Period Increase (Decrease), Total	0	0
Land, Ending Balance	10,850,000	10,700,000

9.30. BUC42 - Reissue Report

The *Reissue Report* business use case shows how to model the reissuance of a business report for, say, a report which has been recalled because of a major problem.

Additionally, the business rule used with this report models a roll up which makes use of a tolerance. (This has nothing to do with the reissue use case, the business rule simply shows that use case.)

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC42-ReissueReport/Index.html

9.30.1. Visual Example

Sample Company
December 31,
(thousands of dollars)

	2010	2009
ASSETS		
Property, Plant, and Equipment, Net		
Land	5,347	1,147
Buildings, Net	244,508	366,375
Furniture and Fixtures, Net	34,457	34,457
Computer Equipment, Net	4,169	5,313
Other Property, Plant, and Equipment, Net	6,702	6,149
Property, Plant and Equipment, Net, Total	295,183	413,441

COMMENTS:

(*). Reissued Report: This report has been reissued on March 2, 2011. The origional report issued on February 15, 2011 contained a significant mistake. The amounts for Land and Building were transposed.

9.30.2. Metapattern(s) employed

Any, example uses Roll Up

9.30.3. Description

The *Reissue Report* business use case shows how the reissuance of a financial statement can be handled. Note that the entire report is reissued, resulting in a different report date. The report date is indicated by the Report Date [Axis]. This fragment is in all other ways the same as the Roll Up business use case.

9.30.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Property, Plant, and Equipment, by Component**	[Network]		
2	**Property, Plant and Equipment, by Component [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Report Date [Axis]**	[Axis]		
6	Report as Of March 2, 2011 [Member]	[Member]		
7	**Property, Plant and Equipment, by Component [Line Items]**	[Line Items]		
8	Property, Plant and Equipment, Net [Roll Up]	[Abstract]		
9	Land	[Concept] Monetary	As Of	Debit
10	Buildings, Net	[Concept] Monetary	As Of	Debit
11	Furniture and Fixtures, Net	[Concept] Monetary	As Of	Debit
12	Computer Equipment, Net	[Concept] Monetary	As Of	Debit
13	Other Property, Plant and Equipment, Net	[Concept] Monetary	As Of	Debit
14	Property, Plant and Equipment, Net, Total	[Concept] Monetary	As Of	Debit

9.30.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- Sometimes major errors are made and reports need to be reissued.

- Different regulators or others using reports could have different mechanisms for determining a report date. One common mechanism is the date of the audit, review, or compilation if a third party public accountant is involved with the report. For the SEC the filing date may be considered the report date.
- If data exists within a system used for analysis and a report is reissued, that system needs to be updated with the new report and could contain both the original report and the reissued report. Those reports need to be differentiated in some way.
- Note the business rule which models the roll up business rule using a tolerance.

9.30.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Property, Plant, and Equipment, by Component (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/ReissueReport/PropertyPlantAndEquipmentByComponent)
Table:	Property, Plant and Equipment, by Component [Table] (pattern:PropertyPlantEquipmentByComponentTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
frm:ReportDateAxis	pattern:ReportAsOfMarch22011Member
brm:Units	iso4217:USD

	brm:PeriodAxis	
brm:ConceptAxis	**2009-12-31**	**2010-12-31**
Property, Plant and Equipment, Net [Roll Up]		
Land	1,147,000	5,347,000
Buildings, Net	366,375,000	244,508,000
Furniture and Fixtures, Net	34,457,000	34,457,000
Computer Equipment, Net	5,313,000	4,169,000
Other Property, Plant and Equipment, Net	6,149,000	6,702,000
Property, Plant and Equipment, Net, Total	413,441,000	295,183,000

9.31. BUC43– Reclassification

The *Reclassification* business use case shows how to model information which was reported with one classification in a prior period but has been reclassified in a current report to conform to the current classifications of the information. This is a classic accounting reclassification of, say, balance sheet line items.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC43-Reclassification/Index.html

9.31.1. Visual Example

Sample Company
December 31,
(thousands of dollars)

	2010	2009	*Previous 2009*
ASSETS			
Property, Plant, and Equipment, Net			
Land	5,347	1,147	*1,147*
Buildings, Net	244,508	366,375	*366,375*
Furniture and Fixtures, Net	34,457	34,457	*34,457*
Computer Equipment, Net	4,169	5,313	
Other Property, Plant, and Equipment, Net	6,702	6,149	*11,462*
Property, Plant and Equipment, Net, Total	295,183	413,441	*413,441*

POLICIES:

Prior period classifications have been restated to conform to current period classifications.

9.31.2. Metapattern(s) employed

Any, example uses Roll Up

9.31.3. Description

The *Reclassification* business use case shows how to handle an accounting type of reclassification. In this case, Other Property, Plant, and Equipment, Net previously reported as $11,462 in another report is broken out into its components for the prior period 2009 classification in order to be consistent with the current period 2010 classification. All other aspects of this business use case are the same as the Roll Up business use case.

9.31.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Property, Plant, and Equipment, by Component**	[Network]		
2	**Property, Plant and Equipment, by Component [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Report Date [Axis]**	[Axis]		
6	Report as of March 2, 2011 [Member]	[Member]		
7	Report as of February 18, 2010 [Member]	[Member]		
8	**Property, Plant and Equipment, by Component [Line Items]**	[Line Items]		
9	Property, Plant and Equipment, Net [Roll Up]	[Abstract]		
10	Land	[Concept] Monetary	As Of	Debit
11	Buildings, Net	[Concept] Monetary	As Of	Debit
12	Furniture and Fixtures, Net	[Concept] Monetary	As Of	Debit
13	Computer Equipment, Net	[Concept] Monetary	As Of	Debit
14	Other Property, Plant and Equipment, Net	[Concept] Monetary	As Of	Debit
15	Property, Plant and Equipment, Net, Total	[Concept] Monetary	As Of	Debit

9.31.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- Reported information is sometimes reclassified to match current classifications. These reclassifications must be identifiable in some way.

- A footnote could be used to identify reclassifications.
- The fact that a reclassification has been made to line items of a financial report is generally required, this use case is not attempting to address this requirement. This use case focuses on the dynamics of the facts which have been reported which have been reclassified.
- The amounts of reclassified line items is not required to be disclosed (the lighter gray facts), they are provided here only to help understand the use case.

9.31.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Property, Plant, and Equipment, by Component (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/Reclassification/PropertyPlantAndEquipmentByComponent)
Table:	Property, Plant and Equipment, by Component [Table] (pattern:PropertyPlantEquipmentByComponentTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember
brm:Units	iso4217:USD

	frm:ReportDateAxis		
	Report as of March 2, 2011 [Member]		Report as of February 18, 2010 [Member]
	brm:PeriodAxis		brm:PeriodAxis
brm:ConceptAxis	**2010-12-31**	**2009-12-31**	**2009-12-31**
Property, Plant and Equipment, Net [Roll Up]			
Land	5,347,000	1,147,000	
Buildings, Net	244,508,000	366,375,000	
Furniture and Fixtures, Net	34,457,000	34,457,000	
Computer Equipment, Net	4,169,000	5,313,000	
Other Property, Plant and Equipment, Net	6,702,000	6,149,000	11,462,000
Property, Plant and Equipment, Net, Total	295,183,000	413,441,000	

Firefox viewer:

Property, Plant, and Equipment, by Component

IDENTIFIER: SAMP - HTTP://WWW.SAMPLECOMPANY

LEGAL ENTITY [AXIS]: CONSOLIDATED ENTITY [MEMBER]

UNIT: USD

(IN THOUSANDS)	REPORT DATE [AXIS]	REPORT AS OF MARCH 2, 2011 [MEMBER]		REPORT AS OF FEBRUARY 18, 2010 [MEMBER]
	DATE	2009-12-31	2010-12-31	2009-12-31
ITEM				
LAND		1,147	5,347	
BUILDINGS, NET		366,375	244,508	
FURNITURE AND FIXTURES, NET		34,457	34,457	
COMPUTER EQUIPMENT, NET		5,313	4,169	
OTHER PROPERTY, PLANT AND EQUIPMENT, NET		6,149	6,702	11,462
PROPERTY, PLANT AND EQUIPMENT, NET, TOTAL		413,441	295,183	

9.32. BUC44 - Reason Not Reported

The *Reason Not Reported* business use case show how to model information which is required to be reported, but for some reason the information is not available, unknown, or for some other reason cannot be determined and therefore cannot be reported.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC44-ReasonNotReported/Index.html

9.32.1. Visual Example

Sample Company
For Period Ending December 31,
(thousands of dollars, except number of employees)

	2010	2009	2008	2007	2006
Sales, Net	1,500	1,400	1,300	1,200	1,100
Income (Loss) from Continuing Operations	500	400	300	200	100
Net Income (Loss)	51	41	31	21	11
Cash Flow Provided by (used in) Operating Activities, Net	5,000	4,000	3,000	2,000	1,000
Capital Additions	1,000	650	550	450	350
Average Number of Employees (*****)	300	290	280	270	*****

(*****). Reason Not Reported: This information unavailable and therefore has not been reported.

9.32.2. Metapattern(s) employed

Any, example uses Hierarchy

9.32.3. Description

The *Reason Not Reported* business use case shows how sometimes information for a fact might not be reportable. This is different than (a) actually reporting a value such as zero or (b) not providing the fact at all. Rather, in this use case a fact is reported but the fact has a NIL attribute value. There could be a variety of reasons as to why a NIL value was reported such as the information is unknown, the information is unavailable, the information is required to be reported by it is not applicable, or some other reason. An XBRL footnote is used to articulate the specific reason a NIL value was reported.

9.32.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Financial Highlights**	[Network]		
2	**Financial Highlights [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Financial Highlights [Line Items]**	[Line Items]		
6	Financial Highlights [Hierarchy]	[Abstract]		
7	Sales, Net	[Concept] Monetary	For Period	Credit
8	Income (Loss) from Continuing Operations	[Concept] Monetary	For Period	Credit
9	Net Income (Loss)	[Concept] Monetary	For Period	Credit
10	Cash Flow Provided by (Used in) Operating Activities, Net	[Concept] Monetary	For Period	Debit
11	Capital Additions	[Concept] Monetary	For Period	Debit
12	Average Number of Employees	[Concept] Decimal	For Period	

9.32.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- Someone counted 14 different reasons why a fact might be reported as NIL.
- A footnote is used to provide details as to why the information was not reported. Standardized categories or reasons could be created to make the footnote more useful.

9.32.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Financial Highlights (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/ReasonNotReported/FinancialHighlights)
Table:	Financial Highlights [Table] (pattern:FinancialHighlightsTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
frm:LegalEntityAxis	frm:ConsolidatedEntityMember

	brm:PeriodAxis				
brm:ConceptAxis	2006-01-01/2006-12-31	2007-01-01/2007-12-31	2008-01-01/2008-12-31	2009-01-01/2009-12-31	2010-01-01/2010-12-31
Financial Highlights [Hierarchy]					
Sales, Net	1,100,000	1,200,000	1,300,000	1,400,000	1,500,000
Income (Loss) from Continuing Operations	100,000	200,000	300,000	400,000	500,000
Net Income (Loss)	11,000	21,000	31,000	41,000	51,000
Cash Flow Provided by (Used in) Operating Activities, Net	1,000,000	2,000,000	3,000,000	4,000,000	5,000,000
Capital Additions	350,000	450,000	550,000	650,000	1,000,000
Average Number of Employees	[NIL]	270	280	290	300

9.33. BUC99 - Non Financial Information

The *Non Financial Information* business use case is really nothing new, rather it makes the point that the business use cases cover not just financial information, but rather any information: financial or non financial. This business use case is created using Lorem Ipsum (http://www.lipsum.com/) dummy text.

http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCases/2011-07-15/BUC99-NonFinancialInformation/Index.html

9.33.1. Visual Example

Lorem Ipsum Dolor Sit Amet
December 31, 2010

Fringilla Feugiat Magna	Pellentesque Habitant Morbi Tristique	MaurisTincidunt Cursus	Metus Viverra Sollicitudin	Suspendisse Vestibulum Augue
pattern:CurabiturPortaDapibusMember	1,000	1,000	1,000	1,000
pattern:AeneanConvallisSemMember	1,000	1,000	1,000	1,000
pattern:MalesuadaFamesMember	2,000	2,000	2,000	2,000

9.33.2. Metapattern(s) employed

Any, example uses Compound Fact, Hierarchy

9.33.3. Description

The *Non Financial Information* business use case is *Simple Compound Fact* business use case modelled with meaningless dummy placeholder text. The point is to show that there is nothing special necessary to model non financial information in XBRL. Any non financial use case can be modelled as the financial reporting examples shown. Information is simply text and numbers; whether it is financial or non financial is not a consideration really.

9.33.4. Overview of report elements and relations

Line	Label	Object Class	Period Type	Balance
1	**Risus Convallis Placerat**	[Network]		
2	**Risus Convallis Placerat [Table]**	[Table]		
3	**Litora Torquent [Axis]**	[Axis]		
4	Curabitur Fermentum Mattis [Member]	[Member]		
5	**Malesuada Fames [Axis]**	[Axis]		
6	Malesuada Fames [Member]	[Member]		
7	Curabitur Porta Dapibus [Member]	[Member]		
8	Aenean Convallis Sem [Member]	[Member]		
9	**Risus Convallis Placerat [Line Items]**	[Line Items]		
10	Fringilla Feugiat Magna [Hierarchy]	[Abstract]		
11	Pellentesque Habitant Morbi Tristique	[Concept] Monetary	For Period	
12	MaurisTincidunt Cursus	[Concept] Monetary	For Period	
13	Metus Viverra Sollicitudin	[Concept] Monetary	For Period	
14	Suspendisse Vestibulum Augue	[Concept] Monetary	For Period	

9.33.5. Important characteristics and dynamics

The following is a summary of the important characteristics and dynamics of this business case which should be considered:

- This use case shows that there is no difference between modelling financial and non-financial information. Both are numbers and text used within a specific business domain.
- You can look at any of these business use cases and ignore the actual text you see and focus on the patterns and semantics of the relations which is more the focus of the business use cases.

9.33.6. Basic automated rendering

Fact Group (Combination of Network and Table)	
Network:	Risus Convallis Placerat (http://www.xbrlsite.com/DigitalFinancialReporting/BusinessUseCase/NonFinancialInformation/RisusConvallisPlacerat)
Table:	Risus Convallis Placerat [Table] (pattern:RisusConvallisPlaceratTable)

Slicers (applies to each fact value in each table cell)	
brm:ReportingEntityAxis	SAMP (http://www.SampleCompany.com)
pattern:LitoraTorquentAxis	pattern:CurabiturFermentumMattisMember
brm:Units	iso4217:USD

	pattern:MalesuadaFamesAxis		
brm:ConceptAxis	Malesuada Fames [Member]	Curabitur Porta Dapibus [Member]	Aenean Convallis Sem [Member]
Fringilla Feugiat Magna [Hierarchy]			
Pellentesque Habitant Morbi Tristique	2,000	1,000	1,000
MaurisTincidunt Cursus	2,000	1,000	1,000
Metus Viverra Sollicitudin	2,000	1,000	1,000
Suspendisse Vestibulum Augue	2,000	1,000	1,000

10. Integrity Models

Relations exist *within* a [Table], for example a set of concepts can roll up into some total, information models describe these types of relationships within one [Table]. But relations can also exist *between* [Table]s.

Integrity models express the semantic relations between the components of one [Table] and the components of another [Table]. [Table]s within an information set, be that information set within one business report or across many business reports you are comparing have relations. Proper relations makes things easier, improper relations make things harder. Modeling business information with these relations intact give your business report the proper integrity.

Many times when modelers think they have modeling choices, you actually don't have as many choices as you might believe you have. The way a modeler thinks that XBRL might work has no bearing in the process of modeling business information. XBRL works as XBRL works, no one can change that. If you could, then what good what that type of standard be? Decisions on how to model information must be based on the model which already surrounds the information you are modeling, the other model components the information you are modeling must relate to, the business rules (XBRL Formulas) which prove the model works, and other such considerations. Not providing the business rules and then believing the model works is a far too common mistake.

While the metapatterns and business use cases are helpful in that they are small, focused examples of specific modeling situations, it is also necessary to understand how one [Table] relates to another [Table]. The purpose of the comprehensive example is to do just that. See the next section.

Note that this discussion is *not* about where information needs to be presented from a financial reporting perspective, that is not relevant to this discussion. This discussion is about how information is related.

10.1. Facts Only Exist in Fact Tables

A fact table is simply defined as a set of facts which go together. A fact can only exist within the framework of a fact table, facts never exist in isolation. There are two mechanisms for grouping facts into a fact table: networks and [Table]s.

The XBRL technical syntax defines the notion of a fact. An XBRL instance is "a bag of facts". All facts have a context. The XBRL technical syntax allows facts to be filtered using the mechanism of a network. The XBRL Dimensions technical specification defines another method of establishing a set of facts, the hypercube which we are referring to as a [Table].

There are never conflicts between networks and hypercubes. Hypercubes filter facts using dimensions. The entity and period dimensions are not filtered by hypercubes.

10.2. Notion of Relations Between [Table]s

The following is a list of the spectrum of how one [Table] can be related to another [Table] within a digital financial report:

- **[Table]s which are unrelated** – a [Table] has no relation to any other [Table].

- **[Table]s related by [Line Items]** – a [Table] shares one or more [Line Items] concept with another [Table].
- **[Table]s related by [Axis]** – a [Table] shares one or more [Axis] with another [Table].
- **[Table]s related by both [Line Items] an and by [Axis]** – a [Table] shares both [Line Items] and [Axis] with another [Table].

Examples which will be provided in a moment will make the differences between the categories on the list easier to see.

10.3. Notion of Summary and Detail Related [Table]s

[Table]s which are related could fall into one of the following categories:

- **Summary [Table]s** – concepts within summary [Table]s are aggregates of information or totals.
- **Detail [Table]s** – concepts within detail [Table]s provide a number of the same concepts, differentiated using either concepts or by using [Member]s of an [Axis].

10.4. Domain Partition Aggregation Models

Recall from the prior section which discussed domain partition aggregation models which explains how information aggregates across an [Axis]. How things aggregate is not necessarily relevant in this discussion which is more about the general ways information relates.

10.5. Pulling Relations and Summary/Detail together Using Examples

Examples help show the differences between the different permutations and combinations of relationships between [Table]s. Here we show such examples.

10.5.1. No relations

An example of no relations is the document information of the comprehensive example. The relations can be seen here:

1041	**VA, Part 1: Document Information**	[Network]		
1042	**Document Information [Table]**	[Table]		
1043	**Legal Entity [Axis]**	[Axis]		
1044	Consolidated Entity [Member]	[Member]		
1045	**Report Date [Axis]**	[Axis]		
1046	Reported as of March 18, 2011 [Member]	[Member]		
1047	**Document Information [Line Items]**	[Line Items]		
1048	Document Information [Hierarchy]	[Abstract]		
1049	Document Title	[Concept] Text/String	For Period	
1050	Document Date	[Concept] Date	For Period	
1051	Document Identifier	[Concept] Text/String	For Period	
1052	Document Description	[Concept] Text/String	For Period	
1053	Document Creator	[Concept] Text/String	For Period	
1054	Document Language	[Concept] Text/String	For Period	

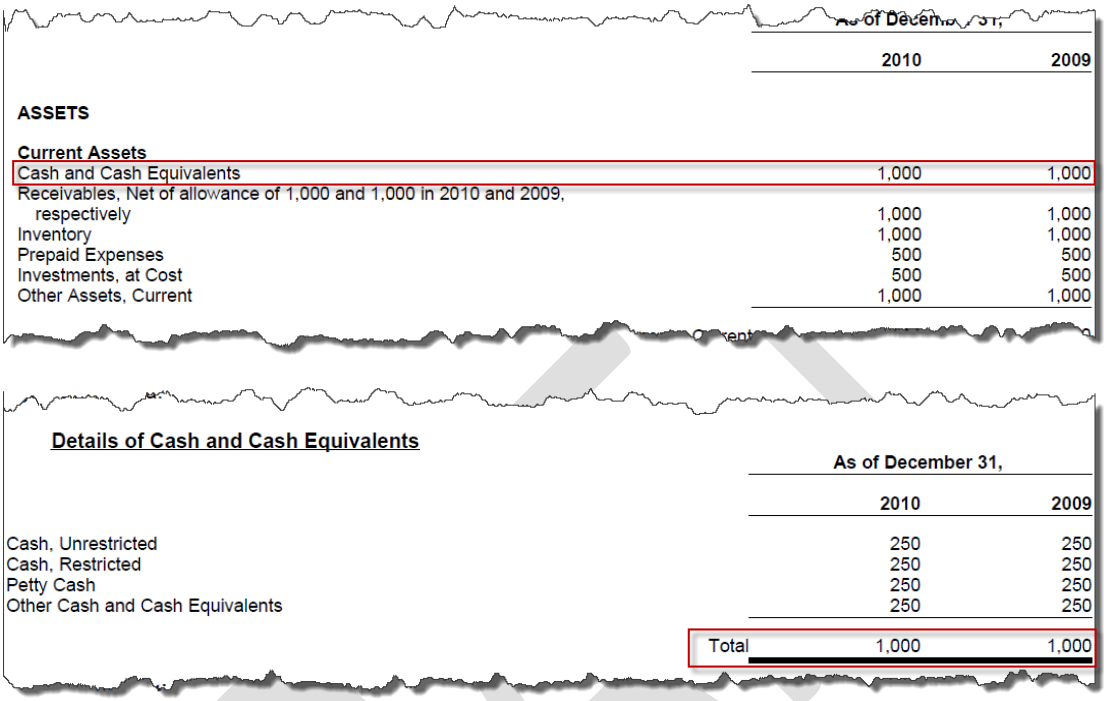
While the Document Information [Table] is related to other [Table]s via the Legal Entity [Axis] and the Report Date [Axis] it does point out the notion of no relations. The [Line Items] of the Document Information [Table] are found in no other place in the comprehensive example digital financial report.

The Document Information [Table] has two other [Axis] where it is related to other tables: the Reporting Entity [Axis] and the Period [Axis], both of which are

required on all [Table]s. Going further with this is an advanced discussion which we will not get into here. Just realize that this relation exists.

10.5.2. Detail/summary related using [Line Items]

Consider the following balance sheet fragment followed by the disclosure of the details of Cash and Cash Equivalents in the notes to the financial statement:



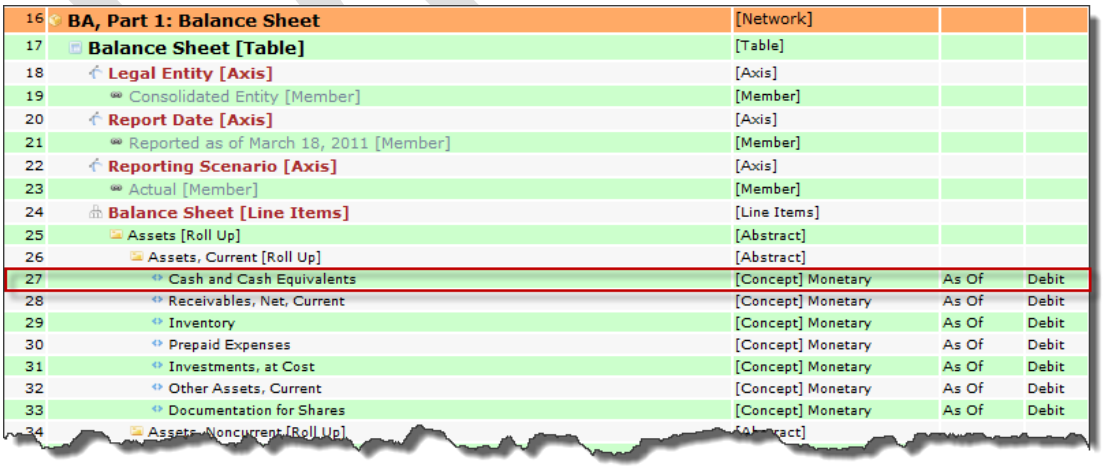
	2010	2009
ASSETS		
Current Assets		
Cash and Cash Equivalents	1,000	1,000
Receivables, Net of allowance of 1,000 and 1,000 in 2010 and 2009, respectively	1,000	1,000
Inventory	1,000	1,000
Prepaid Expenses	500	500
Investments, at Cost	500	500
Other Assets, Current	1,000	1,000

Details of Cash and Cash Equivalents

	As of December 31,	
	2010	2009
Cash, Unrestricted	250	250
Cash, Restricted	250	250
Petty Cash	250	250
Other Cash and Cash Equivalents	250	250
Total	1,000	1,000

The balance sheet can be seen as the summary table which contains the aggregate of Cash and Cash Equivalents. The disclosure which provides a breakdown of the components of Cash and Cash Equivalents is the detail. The intersection between these two items is the total of Cash and Cash Equivalents which appears on both the summary and in the detailed breakdown.

Here is a modelling of Cash and Cash Equivalents on the balance sheet followed by a modelling of the detailed breakdown from the disclosures:



16	**BA, Part 1: Balance Sheet**	[Network]		
17	**Balance Sheet [Table]**	[Table]		
18	**Legal Entity [Axis]**	[Axis]		
19	Consolidated Entity [Member]	[Member]		
20	**Report Date [Axis]**	[Axis]		
21	Reported as of March 18, 2011 [Member]	[Member]		
22	**Reporting Scenario [Axis]**	[Axis]		
23	Actual [Member]	[Member]		
24	**Balance Sheet [Line Items]**	[Line Items]		
25	Assets [Roll Up]	[Abstract]		
26	Assets, Current [Roll Up]	[Abstract]		
27	Cash and Cash Equivalents	[Concept] Monetary	As Of	Debit
28	Receivables, Net, Current	[Concept] Monetary	As Of	Debit
29	Inventory	[Concept] Monetary	As Of	Debit
30	Prepaid Expenses	[Concept] Monetary	As Of	Debit
31	Investments, at Cost	[Concept] Monetary	As Of	Debit
32	Other Assets, Current	[Concept] Monetary	As Of	Debit
33	Documentation for Shares	[Concept] Monetary	As Of	Debit
34	Assets, Noncurrent [Roll Up]	[Abstract]		

1	**JB, Part 2: Cash and Cash Equivalents, Details**	[Network]		
2	**Cash and Cash Equivalents, Details [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Report Date [Axis]**	[Axis]		
6	Reported as of March 18, 2011 [Member]	[Member]		
7	**Reporting Scenario [Axis]**	[Axis]		
8	Actual [Member]	[Member]		
9	**Cash and Cash Equivalents, Details [Line Items]**	[Line Items]		
10	Cash and Cash Equivalents [Roll Up]	[Abstract]		
11	Cash, Unrestricted	[Concept] Monetary	As Of	Debit
12	Cash, Restricted	[Concept] Monetary	As Of	Debit
13	Petty Cash	[Concept] Monetary	As Of	Debit
14	Other Cash and Cash Equivalents	[Concept] Monetary	As Of	Debit
15	Cash and Cash Equivalents, Total	[Concept] Monetary	As Of	Debit

Note that Cash and Cash Equivalents is not only a concept in both locations, but it is actually the same concept which shows up in both [Table]s. Note that the [Axis] of both tables are the same.

You can get more information about this modelling approach by examining the *Simple Roll Up* business use case.

What is going on in this example may not yet seem obvious. However, when it is compared to the next approach what we are trying to explain will become more clear.

10.5.3. Detail/summary related using [Members] of an [Axis]

Consider the following balance sheet fragment which shows Property, Plant and Equipment, Net:

Noncurrent Assets			
Property, Plant and Equipment, Net			
Land		1,000	1,000
Buildings, Net		1,000	1,000
Furniture and Fixtures, Net		1,000	1,000
Other Property, Plant, and Equipment, Net		1,000	1,000
	Property, Plant, and Equipment, Net	4,000	4,000
Investment in Affiliates		0	0
Other Assets, Noncurrent		3,000	1,000

One approach to modelling this information is to follow the approach used in the section above, modelling each class of Property, Plant and Equipment, Net as a concept as shown below:

19	Assets, Non[illegible]t [Roll Up]	[Abstract]		
20	Property, Plant, and Equipment, Net [Roll Up]	[Abstract]		
21	Land	[Concept] Monetary	As Of	Debit
22	Buildings, Net	[Concept] Monetary	As Of	Debit
23	Furniture and Fixtures, Net	[Concept] Monetary	As Of	Debit
24	Other Property, Plant, and Equipment, Net	[Concept] Monetary	As Of	Debit
25	Property, Plant, and Equipment, Net, Total	[Concept] Monetary	As Of	Debit
26	[illegible] Affiliates	[Concept] Monetary	As Of	Debit

However, an alternative approach is to model each class of Property, Plant, and Equipment as a [Member] of an [Axis] which can be seen below:

1	**Property, Plant, and Equipment, by Component**	[Network]		
2	**Property, Plant and Equipment, by Component [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Class of Property, Plant and Equipment [Axis]**	[Axis]		
6	All Classes of Property, Plant and Equipment [Member]	[Member]		
7	Land [Member]	[Member]	For Period	
8	Buildings [Member]	[Member]	For Period	
9	Furniture and Fixtures [Member]	[Member]	For Period	
10	Computer Equipment [Member]	[Member]	For Period	
11	Other Property, Plant and Equipment [Member]	[Member]	For Period	
12	**Property, Plant and Equipment, by Component [Line Items]**	[Line Items]		
13	Property, Plant and Equipment, Net [Hierarchy]	[Abstract]		
14	Property, Plant and Equipment, Net	[Concept] Monetary	As Of	Debit

Above you can see that each class of Property, Plant and Equipment is modelled as a [Member] of the [Axis] Class of Property, Plant and Equipment [Axis].

You can examine this model more closely by taking a look at the business use case *Classes*. Contrast that to the business use case *Simple Roll Up*.

Continuing on with the examples will further reveal the pros and cons of different alternative modelling options.

10.5.4. Related by [Axis] and [Members]

The following two fragments of policies and disclosures will help understand one very significant difference between modelling details using [Line Items] and concepts as contrast to modelling details leveraging an [Axis] and [Member]s. Consider these policies and disclosures of Property, Plant and Equipment:

Property, Plant and Equipment Policies

Class	Valuation Basis	Depreciation Method	Estimated Useful Life
Land	Mauris tincidunt cursus est	NA	NA
Buildings	Sed dapibus venenatis ipsum	Etiam porttitor	20 years
Furniture and Fixtures	Nunc congue	Maecenas tincidunt	10 years
Computer Equipment	Suspendisse potenti	Maecenas tincidunt	5 years
Other	Phasellus eleifend	Maecenas tincidunt	5 years

Property, Plant, and Equipment, Net, Components

	2010	2009
Land	5,347	1,147
Buildings, Net	244,508	366,375
Furniture and Fixtures, Net	34,457	34,457
Computer Equipment, Net	4,169	5,313
Other Property, Plant, and Equipment, Net	6,702	6,149
Property, Plant and Equipment, Net, Total	295,183	413,441

Here you can see two things. First, Property, Plant and Equipment has multiple sets of information expressed in different areas of a financial report and second, that the presentation of the information looks different.

Here is the modelling of both the polices and breakdown of Property, Plant and Equipment:

1	**Property, Plant, and Equipment, Policies**	[Network]		
2	**Property, Plant and Equipment, Policies [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Class of Property, Plant and Equipment [Axis]**	[Axis]		
6	All Classes of Property, Plant and Equipment [Member]	[Member]		
7	Land [Member]	[Member]		
8	Buildings [Member]	[Member]		
9	Furniture and Fixtures [Member]	[Member]		
10	Computer Equipment [Member]	[Member]		
11	Other Property, Plant and Equipment [Member]	[Member]		
12	**Property, Plant and Equipment, Policies [Line Items]**	[Line Items]		
13	Property, Plant and Equipment, Policies [Hierarchy]	[Abstract]		
14	Valuation Basis	[Concept] Text/String	For Period	
15	Depreciation Method	[Concept] Text/String	For Period	
16	Estimated Useful Life	[Concept] Text/String	For Period	

1	**Property, Plant, and Equipment, by Component**	[Network]		
2	**Property, Plant and Equipment, by Component [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Class of Property, Plant and Equipment [Axis]**	[Axis]		
6	All Classes of Property, Plant and Equipment [Member]	[Member]		
7	Land [Member]	[Member]		
8	Buildings [Member]	[Member]		
9	Furniture and Fixtures [Member]	[Member]		
10	Computer Equipment [Member]	[Member]		
11	Other Property, Plant and Equipment [Member]	[Member]		
12	**Property, Plant and Equipment, by Component [Line Items]**	[Line Items]		
13	Property, Plant and Equipment, Net [Hierarchy]	[Abstract]		
14	Property, Plant and Equipment, Net	[Concept] Monetary	As Of	Debit

Common between the two models is the Class of Property, Plant and Equipment [Axis]. That [Axis] can be used to "glue" the two [Table]s together, using both the disclosure of the balances of each class of Property, Plant and Equipment and the policies.

If only [Line Items] were used to model both the balances and disclosures, basically not using the [Axis], one would simply repeat the [Line Item] for each class; for example creating "Land, Valuation Basis", "Buildings, Valuation Basis", and so on. Two things would result. First, a much larger taxonomy and second, no connection between for example, "Buildings, Valuation Basis", "Buildings, Depreciation Method", "Buildings, Estimated Useful Life", and "Buildings, Net". They may seem connected to a human due to the common term "Buildings"; but a computer could not formally make this connection. Hacks could be employed to attempt to create a connection using the common term "Buildings", but it would be exactly that, a hack.

To examine the detailed taxonomies and instances in more detail, see the *Class Properties* business use case.

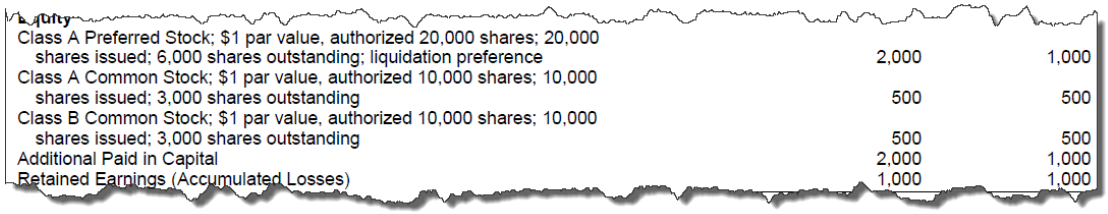
10.5.5. Detail/summary related using [Members] of an [Axis] with properties

We want to now bring the concept of "properties" into clearer focus. Consider this example of information about the classes of common stock:

Classes of Common Stock

Class	Par Value	Share Subscriptions	Shares Authorized	Shares Issued	Shares Outstanding	Amount 2010	Amount 2009
company:ClassACommonStockMember	1	10000	10000	10000	3000	500	500
company:ClassBCommonStockMember	1	10000	10000	10000	3000	500	500
				Total all Classes	6000	1,000	1,000

A number of important points can be made by looking at the set of information above. First, information is not commonly presented to the user in this way. Commonly this information is presented on the balance sheet as shown below:



Equity		
Class A Preferred Stock; $1 par value, authorized 20,000 shares; 20,000 shares issued; 6,000 shares outstanding; liquidation preference	2,000	1,000
Class A Common Stock; $1 par value, authorized 10,000 shares; 10,000 shares issued; 3,000 shares outstanding	500	500
Class B Common Stock; $1 par value, authorized 10,000 shares; 10,000 shares issued; 3,000 shares outstanding	500	500
Additional Paid in Capital	2,000	1,000
Retained Earnings (Accumulated Losses)	1,000	1,000

The information for each class is presented as part of the balance sheet line item as compared to the tabular format. Second, the total is not presented on the balance sheet. Further, if the shares outstanding were different between the current and prior period, that fact would need to be presented in the line item description. Finally, as pointed out in the prior examples, which say Cash and Cash Equivalents has no additional "properties" associated with them, Property, Plant and Equipment can as can the disclosures for a class of stock.

10.5.6. Detail/summary with only one detailed item

This example focuses on one specific point. As you can see in the screenshot below of information about classes of preferred stock and common stock; the common stock has two classes whereas the preferred stock has only one:

Classes of Preferred Stock

Class	Par Value	Share Subscriptions	Shares Authorized	Shares Issued	Shares Outstanding	Amount 2010	Amount 2009
company:ClassAPreferredStockMember	1	20000	20000	20000	6000	2,000	1,000
				Total all Classes	6000	2,000	1,000

Classes of Common Stock

Class	Par Value	Share Subscriptions	Shares Authorized	Shares Issued	Shares Outstanding	Amount 2010	Amount 2009
company:ClassACommonStockMember	1	10000	10000	10000	3000	500	500
company:ClassBCommonStockMember	1	10000	10000	10000	3000	500	500
				Total all Classes	6000	1,000	1,000

How would or should having only one [Member] in a breakdown impact the modelling of information? The question should not really be about whether one specific company has one class of two or more classes of something; but rather modelling should be driven by the possibility of ever having either only one or one-to-many [Member]s of some class of information.

The point here is that an entity could have more than one class of preferred stock and a class of preferred stock can have a number of properties. Both the details of the class and the total of all classes, in the case shown above the total and the class are the same because there is only one member within the class; however, the total and the amount for each class are two different pieces of information.

10.5.7. Master/detail by [Axis] and [Members]

The notion of "master/detail" is commonly communicated using the example of an invoice which has information applicable to the entire invoice such as the involce number and date; and detail information which is associated with the line items of the invoice such as the product number, the quantity and the amount. An invoice always has one number and date, but it can have one or many line items.

A similar pattern occurs within a financial report as shown by the related party and related party transactions disclosure below:

NOTE 16. RELATED PARTY TRANSACTIONS

The following is a summary of related party of the company and transactions with those related parties:

Related Parties

Name of Related Party	Type of Relationship	Nature of Relationship
company:RelatedParty1Member	Parent	This is other descriptive information about the relationship.
company:RelatedParty2Member	JointVenture	This is other descriptive information about the relationship.

Transactions with Related Parties

Party	Transaction Description	Pricing Policy	Amount
company:RelatedParty1Member	Transaction 1 description	Cost	1000
company:RelatedParty1Member	Transaction 2 description	Cost	1000
company:RelatedParty2Member	Transaction 1 description	Cost	1000
company:RelatedParty2Member	Transaction 2 description	Cost	1000

This disclosure shows two related parties and a total of four related party transactions, two each for the two related parties.

This information can be modelled as shown below in first the modelling of the related parties and the then the modelling of the related party transactions.

1	**Related Parties**	[Network]		
2	**Related Parties [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Related Party Name [Axis]**	[Axis]		
6	Related Party 1 [Member]	[Member]	For Period	
7	Related Party 2 [Member]	[Member]	For Period	
8	**Related Parties [Line Items]**	[Line Items]		
9	Related Party [Hierarchy]	[Abstract]		
10	Related Party, Type of Relationship	[Concept]	For Period	
11	Related Party, Nature of Relationship	[Concept] Text/String	For Period	

1	**Related Party Transactions**	[Network]		
2	**Related Party Transactions [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Member]	[Member]		
5	**Related Party Name [Axis]**	[Axis]		
6	Related Party 1 [Member]	[Member]	For Period	
7	Related Party 2 [Member]	[Member]	For Period	
8	**Related Party Transaction Type [Axis]**	[Axis]		
9	Related Party Transaction Type, All [Member]	[Member]	For Period	
10	Agency Arrangements with Related Party [Member]	[Member]	For Period	
11	Leasing Arrangements with Related Party [Member]	[Member]	For Period	
12	Purchase or Sale of Goods with Related Party [Member]	[Member]	For Period	
13	Purchase or Sale of Property or Other Assets with Related Party [Member]	[Member]	For Period	
14	**Related Party Transaction [Line Items]**	[Line Items]		
15	Related Party Transaction [Hierarchy]	[Abstract]		
16	Related Party Transaction, Description	[Concept] Text/String	For Period	
17	Related Party Transaction, Pricing Policy	[Concept] Text/String	For Period	
18	Related Party Transaction, Amount	[Concept] Monetary	For Period	Debit

Common between the two tables is the Related Party Name [Axis]. It is that [Axis] which connects the related party disclosure with the transactions for each related party.

While in this case there is no aggregation which connects the two [Table]s, the two [Table]s are connected. The related party transactions [Table] has another

[Axis] used to differentiate the different transactions associated with a related party.

For more detailed information, see the *Nested Compound Fact* business use case.

10.6. Avoid Mixing Modeling Approaches

If one is not conscious of what they are modelling, there is a good probability that you switch between alternative modelling approaches within the same [Table] and don't even realize it. Arbitrarily shifting from one modelling approach to another modelling approach in the same [Table] simply will not work.

For example, if a balance sheet is modelled using concepts throughout the entire balance sheet, and then you choose to add detail which is supposed to show up on the balance sheet but express that detail using [Member]s of an [Axis] the balance sheet will likely not work correctly in some area; either the calculation relations expressed will not foot, the business rules will not work or will seem inconsistent with other similar types of rules, it will not render correctly or some other problem may occur.

As such, be conscious, create all components, and if all the components work correctly all things considered, your modelling is fine.

10.7. Choosing Between Alternative Modeling Approaches

Many times a modeller has no choice as to which approach to use to break down details. For example, if the Property, Plant and Equipment details were shown on the face of the balance sheet, then the [Line Items] approach must be used because otherwise the details would not render on the balance sheet and the balance sheet would not foot. As such, the details must be modelled as additional [Line Items].

Whereas, if a modeller needs to connect additional properties to a concept to communicate relationships between concepts, creating an [Axis] and articulating the a breakdown using [Member]s of that [Axis] has advantages.

Modelling information can involve tradeoffs. Establishing and following a set of principles and communicating those principles followed to users of a taxonomy can be helpful to users of that taxonomy.

10.8. US GAAP Taxonomy Examples

To better understand the different types of relations the US GAAP Taxonomy can be of help. The following are a few examples which help you understand the differences between the different categories of [Table] relations:

- Nonmonentary Transactions [Table] is not related to any other [Table] in the entire US GAAP taxonomy nor in any SEC XBRL financial filing; it ties to nothing. It is stand alone.
- Subsequent Events [Table]. Likewise unrelated.
- Balance Sheet [Table] and the Property, Plant and Equipment Components [Table] are related in that the total of PPE is on the balance sheet and that total PPE also serves as the intersection to the detailed breakdown, whether these concepts are expressed using [Member]s of an [Axis] or if they are expressed as concepts (XBRL items) within [Line Items].
- Property, Plant and Equipment Components [Table] and the Property, Plant and Equipment Estimated Useful Lives [Table] are related by the Class of Property, Plant and Equipment [Axis].

- Income statement [Table] is related to the Business Segment Breakdown [Table] and the Geographic Areas Breakdown [Table].

11. Flow Models

Flow is the notion of relations between networks and/or [Table]s for the purpose of ordering or sequencing information contained in a digital financial report. Creating schemes for generating the desired flow of information contained by a digital financial report can be impacted by metadata available.

While there are many possible approaches for articulating flow metadata, the approaches considered are those which do not add new approaches to articulating required metadata; rather only approaches which use existing metadata or standard forms of expressing metadata are considered.

Also "pixel perfect" formatting of information is not the target. The target is the organization of groups or fact tables of information.

11.1. Metadata Constraints Impacting Ordering

Certain metadata is required by the XBRL technical syntax. Other metadata is determined by how a taxonomy is expressed. The following is a summary of the constraints imposed by approaches used to express metadata within a taxonomy and how those constraints impact ordering.

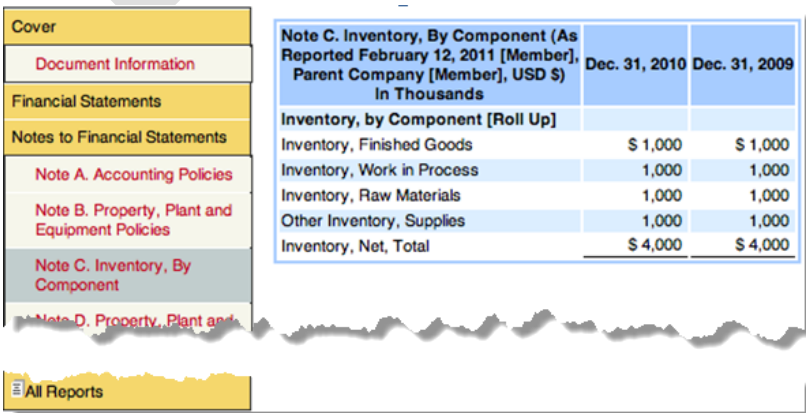
- **Networks** – Networks are always required to be unique so as such, networks can always be used to order a taxonomy. However, if networks alone are used many times not enough granularity is achievable. Also networks cannot be articulated within a hierarchy.
- **Networks plus Non-unique Tables** – Tables can be used with networks to order information. However, depending on whether the tables are expressed are unique governs the role a network must play in allowing a table to be specifically identified.
- **Unique Tables** – If every table within a taxonomy is unique, then networks no longer need to be relied upon to uniquely identify and locate a table, the table alone will allow such identification.

11.2. Ordering/sequencing Examples

The following are a number of ordering/sequencing examples which provide details about available options.

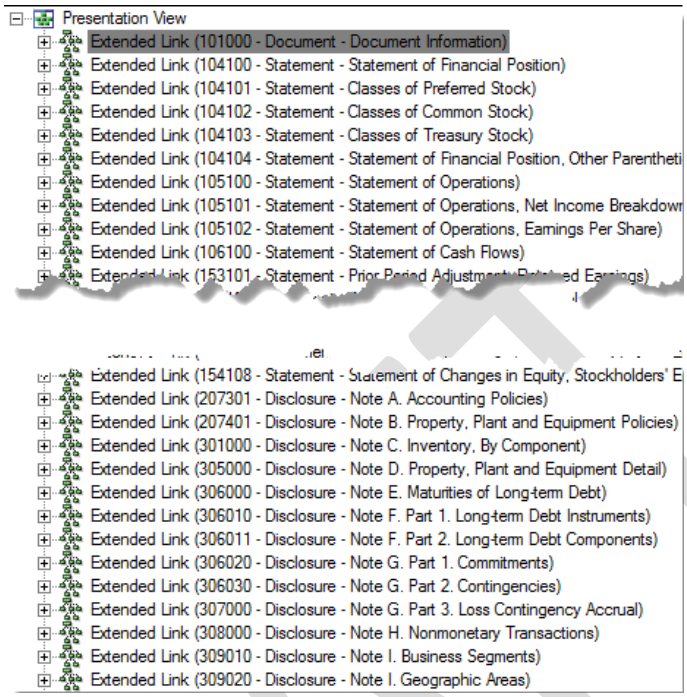
11.2.1. Networks with numbers and categories

One example of using networks to order or sequence the contents of a digital financial report can be seen in how the SEC achieves sequencing. Consider the following example:



Note C. Inventory, By Component (As Reported February 12, 2011 [Member], Parent Company [Member], USD $) In Thousands	Dec. 31, 2010	Dec. 31, 2009
Inventory, by Component [Roll Up]		
Inventory, Finished Goods	$ 1,000	$ 1,000
Inventory, Work in Process	1,000	1,000
Inventory, Raw Materials	1,000	1,000
Other Inventory, Supplies	1,000	1,000
Inventory, Net, Total	$ 4,000	$ 4,000

The above is a fragment of a model financial report rendered within the SEC interactive data previewer. This is the taxonomy which drives that view will each network collapsed so that you are looking at a list of the networks in the taxonomy:



Each network can be broken into three components which drive the sequencing of the rendering framework:

- **Number** such as "101000" within the first network.
- **Category** such as "Document", "Statement" or "Disclosure"
- **Description** or other part of the networks definition.

The category is used to put the different networks into one of the yellow categories in the SEC example, the number determines the order within the category, and the balance of the description is the label that a user sees.

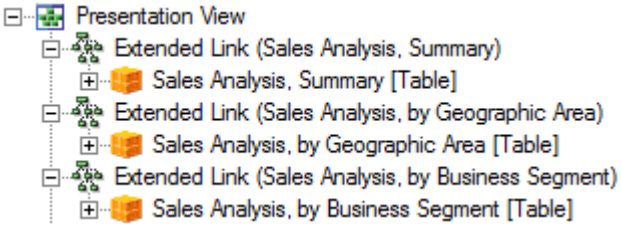
This approach is workable, but it means that all information must be broken out by network and anything smaller than the network itself cannot be broken out any further. For example, table information is not used for rendering information at all.

You can examine this in more detail by examining the reference or model implementation of an SEC XBRL financial filing.

11.2.2. Tables organized into a list

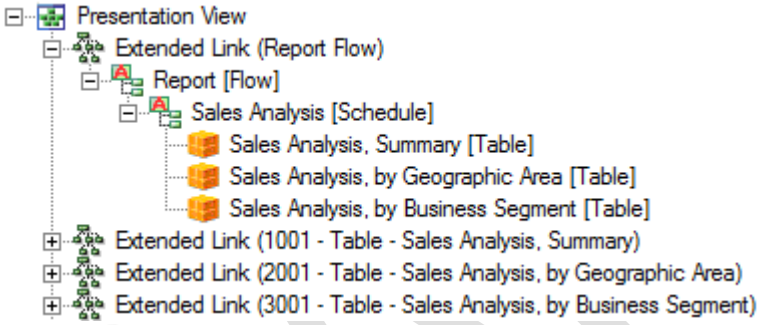
Another approach to articulating sequencing information can be seen by comparing the *Pivot Table* business use case with the *Flow* business use case.

Consider the screen shot below of the Pivot Table business use case:



There are three networks with three tables. Each network and table is unique. Suppose you wanted to articulate the ordering you would prefer for working with this information, how would you do that? You could request the information in the physical order in which it exists within the XBRL taxonomy or you could request the information in alphabetical order, that is about all the options you might have.

Now consider the *Flow* business use case below. The this taxonomy has a network called "Report Flow". Within that network, a hierarchy of the [Table]s which exist in the taxonomy for this business report is provided.



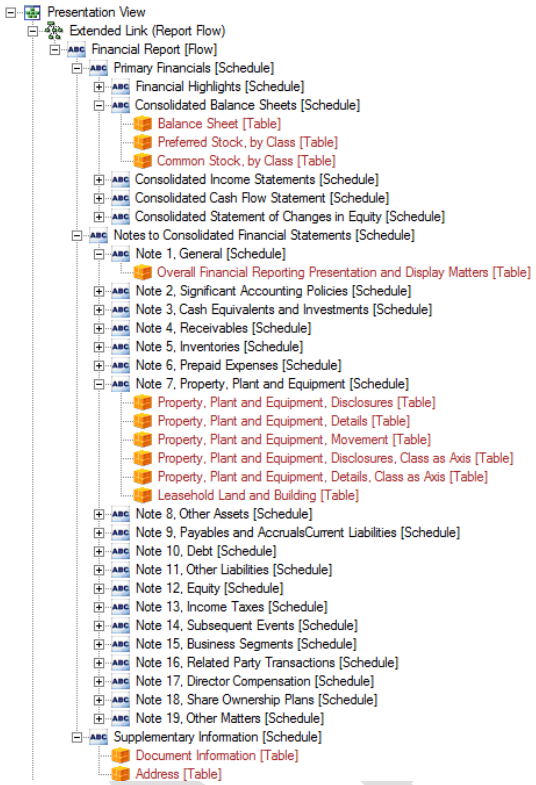
As such, a software application can read that hierarchy and use it within the application to show the summary first, the geographic table second, and the business segment third.

Alternatively, the numbering of the network could be used to achieve the same goal as with the SEC example.

The [Table]s alone can be used, and the networks totally ignored, because each table is unique. By contrast, if each table were called "Sales Analysis, Summary [Table]", then to identify which [Table] you were looking for, you would also need to rely on the network.

11.2.3. Hierarchy of tables and the notion of a schedule

Looking at the report flow of the *Comprehensive Example* shows the possibility of using a presentation hierarchy to organize a digital financial report.



In the example shown above from the *Comprehensive Example*, each [Table] of approximately a total of 52 [Table]s is modelled within a presentation hierarchy in precisely the ordering the creator of the model desires. The notion of a [Schedule] is used to group [Table]s together which are rendered together. For example, the "Consolidated Balance Sheet [Schedule]" shown in the hierarchy above contains the Balance Sheet [Table], the Preferred Stock, by Class [Table] and the Common Stock, by Class [Table].

To make this organization scheme work, all one needs to do is first be sure that every [Table] is unique so the [Table] alone can be used to identify a portion of the digital business report, everything needs to be modelled explicitly within a [Table], and then a hierarchy of every [Table] in the order it should be sequenced can then be created.

11.3. Notion of the "No Table [Table]"

In the section which discusses the report elements which make up a digital business report we explain that everything within a digital financial report exists within a [Table], be that [Table] explicitly articulated using the "[Table]" report element, or the table is implied.

Basically, everything expressed within a network which is not contained within some explicit [Table] can be thought of existing within a pseudo or implicit table called "No Table [Table]". Because you might have more than one "No Table [Table]", you must rely on the network to uniquely identify which "No Table [Table]" you would like to work with. As such, using implicit tables requires you to work with tables just as though you created non-unique tables.

11.4. The "Statement [Table]"

Another approach to defining [Table]s can be seen by examining the "Statement [Table]" within the US GAAP Taxonomy or even better, the "Hypercube [Table]" of the FINREP taxonomy.

The FINREP taxonomy took the most extreme route using one [Table] and one [Table] only throughout their entire taxonomy. They did this to specifically push all semantics of the meaning of a group of information onto the network which contains the hypercube. One can be sure that the network describes the information 100% of the time because (a) each [Table] is called exactly the same thing and (b) because each network could only possibly contain one [Table] because using the same [Table] name within a network would cause modelling conflicts (and remember, all [Table]s have the same name). The bottom line here is that the network carries all semantics for describing the information, there is no confusion.

By contrast, the US GAAP Taxonomy has the "Statement [Table]" which is used on the balance sheet, the income statement, the cash flow statement, and the statement of changes in equity. As such, one can only know which "Statement [Table]" you are working with by using the network.

Further, most but not all other [Table]s in the US GAAP Taxonomy are unique. What is more, not everything is modelled as a explicit [Table] and therefore there are many "No Table [Table]s" (see the preceding section).

11.5. Which Approach is Best?

All this distils down into three possible options:

- **Use explicit unique [Tables]**. This option works well, and in fact it is the option which I believe is the most reasonable. By taking this approach you can ignore networks altogether, relegating networks to the role of syntax needed only for avoiding modelling conflicts. And because you can ignore the network, you can be sure the [Table] describes the information set and each [Table] being unique, each information set is unique.
- **Use explicit but only one [Table] for everything**. This option works well also because it is clear that the network carries all semantics for describing a set of information. The down side is that you have to create metadata such as the "number" and "category" used by the SEC to help organize those networks.
- **Mixed model**. If [Tables] are not unique and if [Table]s are not explicit (i.e. you have "No Table [Table]"s), you have to rely on both networks and tables to identify which information you need to work with. This can be both cumbersome for software and for users. A mixed model such as this does not appear to make much sense and should be avoided, all things considered.

There are no real benefits of having [Table]s names which can be used in more than one place, yet there are significant benefits of unique [Table] names.

12. Comprehensive Example

The *Comprehensive Example* takes the complete set of business use cases, puts them all into one XBRL taxonomy and XBRL instance, and shows how one part of an XBRL taxonomy and XBRL instance interrelates with other parts in one comprehensive digital business report.

Don't be deceived by its apparent simplicity of this example. It would be rare for a real XBRL instance to contain all that this example contains. While it might not look like a real financial report, the example looks enough like a real financial report to help grasp the true issues of expressing information using XBRL but small enough not to be overwhelming.

This example does have the simple and complex issues you would run up against while modeling a real financial report. This is a marvelous learning tool. It is an extremely useful testing tool. It is a valuable prototype to show how to get XBRL to do the things which you will find that you need XBRL to do within your system.

The example strives to walk the tightrope and strike the appropriate balance between easy to understand and so overly complex that you begin to not see the forest for the trees. This example focuses on the perspective of the forest. The metapatterns and business use cases are more helpful in understanding the trees.

12.1. Overview

The comprehensive example can be found at the following URL:

http://www.xbrlsite.com/DigitalFinancialReporting/ComprehensiveExample/2011-07-15/

At that URL you will see an index page which is similar to the index pages of the metapatterns and business use cases and looks as follows:

Comprehensive Example

#	Item	Description
A.	Use Case Name	**ComprehensiveExample**
B.	Description	Consolidation of all business use cases to test integrity between the business use cases. Also, intended to look as much like a financial statement as possible.
C.	Visual example	
D.	Visual example file	PDF
E.	Report elements	HTML | XML Infoset
F.	Report element relations	XSD (Company) | XSD (GAAP) | Relations (HTML) | Relations Infoset (XML)
G.	Report	XBRL | Fact Tables (HTML)| Fact Table Infoset (XML)| Rendering (HTML)
H.	Business rules	XBRL Formulas (Company) | XBRL Formulas (GAAP) | XBRL Formulas Valiation Results | Business rules (HTML) | XBRL Calculation validation results
I.	XBRL technical syntax validation (double check)	HTML (UBmatrix) | HTML (XBRL Cloud)
J.	Recap/Examination prototype tool/viewer	HTML
K.	ZIP Archieve with All Files	ZIP

A good place to start is by reading through the visual example of what is contained in this financial report, item "D" the visual example file which is provided in a PDF format.

12.2. Details of Each Network

The following is a summary of each of the networks contained within the comprehensive example and a mapping to the business use case and/or metapattern and an explanation of what that network is intended to show.

Network	Business Use Case and Other Information
AA, Part 1: Financial Highlights	Flat Hierarchy
BA, Part 1: Balance Sheet	Roll Up
BA, Part 2: Balance Sheet, Classes of Preferred Stock	Simple Compound Fact, shows a class with only one member
BA, Part 3: Balance Sheet, Classes of Common Stock	Simple Compound Fact
BB, Part 1: Income Statement	Roll Up
BB, Part 2: Income Statement, Earnings Per Share	Flat Hierarchy
BC, Part 1: Cash Flow Statement, Direct Method	Roll Forward
BF, Part 1: Changes in Equity, Prior Period Adjustments	Prior Period Adjustment
BF, Part 2: Changes in Equity	Roll Forward
BF, Part 3: Changes in Equity, Preferred Stock, Shares	Roll Forward
BF, Part 4: Changes in Equity, Common Stock, Shares	Roll Forward
BF, Part 5: Changes in Equity [Extra]	
IA, Part 1: Overall Financial Reporting Presentation and Display	Nested Hierarchy
JA, Part 1: Accounting Policies	Nested Hierarchy
JB, Part 1: Cash and Cash Equivalents, Disclosures	Flat Hierarchy
JB, Part 2: Cash and Cash Equivalents, Details	Roll Up
JC, Part 1: Receivables, Disclosures	Flat Hierarchy
JC, Part 2: Receivables, Details, Current/Noncurrent	Roll Up, Multiple Roll Ups
JC, Part 3: Receivables, Details, Gross/Net	Roll Up, Multiple Roll Ups
JC, Part 4: Receivables, Details, by Component	Roll Up, Multiple Roll Ups
JD, Part 1: Inventory, Disclosures	Flat Hierarchy
JE, Part 1: Prepaid Expenses, Disclosures	Flat Hierarchy
KA, Part 1: Property, Plant and Equipment, Disclosures (As Concepts)	Roll Up
KA, Part 2: Property, Plant and Equipment, Details (As Concepts)	Roll Up
KA, Part 3: Property, Plant and Equipment, Movement (As Concepts)	Roll Forward
KF, Part 1: Property, Plant and Equipment, Disclosures (Class as Axis)	Class
KF, Part 2: Property, Plant and Equipment, Details (Class as Axis)	Class Properties
KF, Part 3: Property, Plant and Equipment, Leasehold Land and Buildings	Multiple Periods Compound Fact
KG, Part 1: Other Assets, Disclosures	Flat Hierarchy
KG, Part 2: Other Assets, Details	Roll Up
LA, Part 1: Payables and Accruals, Details	Roll Up
LA, Part 1: Payables and Accruals, Disclosures	Flat Hierarchy
LB, Part 1: Debt, Disclosures	Flat Hierarchy
LB, Part 2: Debt, Details	Roll Up
LB, Part 3: Debt, Maturities	Roll Up, ties to total debt
LB, Part 4: Debt, Instruments	Compound Fact, ties to total debt
LB, Part 5: Debt, Details, Current/Noncurrent Breakdown	Roll Up, ties to total debt
LC, Part 1: Other Liabilities, Disclosures	Flat Hierarchy
LC, Part 2: Other Liabilities, Details	Flat Hierarchy
MA, Part 1: Equity, Disclosures	Flat Hierarchy
NA, Part 1: Income Taxes, Disclosures	Flat Hierarchy
NA, Part 2: Income Tax Expense (Benefit), Details	Roll Up
OA, Part 1: Subsequent Events	Compound Fact
OB, Part 1: Business Segments	Roll Up
OC, Part 1: Related Parties	Nested Compound Fact
OC, Part 2: Related Party Transactions	Nested Compound Fact
OC, Part 3: Director Compensation	Simple Compound Fact
OC, Part 4: Share Ownership Plans	Nested Roll Forward
PB, Part 1: Reconciliation of Cash, Summary	Reconciliation
PB, Part 2: Reconciliation of Cash, Detail	Reconciliation
PC, Part 2: Investments, Details	Grouped Report
PC, Part 3: Sales Analysis	Compound Fact
QA, Part 1: Variance Analysis	Variance
VA, Part 1: Document Information	Flat Hierarchy
VB, Part 1: Address	Flat Hierarchy

13. SEC XBRL Financial Filing Model/Reference Implementation

The *SEC XBRL Financial Filing Model/Reference Implementation* expands on the *Comprehensive Example* by showing an SEC XBRL financial filing modelled using the modelling principles proposed in this document.

In fact, the US GAAP Taxonomy and SEC XBRL financial filings are the basis for this modelling approach in the first place.

The *SEC XBRL Financial Filing Model/Reference Implementation* achieves the same goal as the *Comprehensive Example* in that it shows a complete financial statement modelled using these principles which could be submitted to the SEC and pass Edgar Filer Manual (EFM) validation.

This section explains this sample/example in more detail.

13.1. Overview

The *SEC XBRL Financial Filing Model/Reference Implementation* can be found at the following URL:

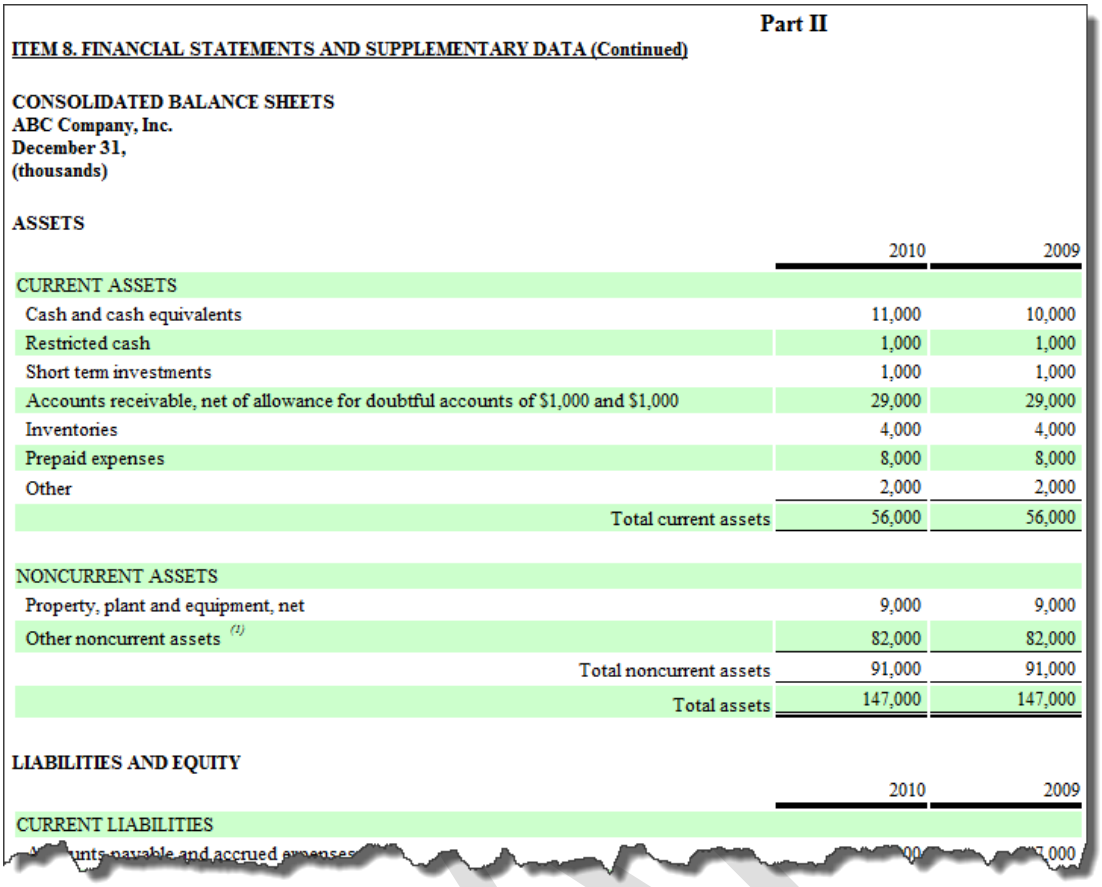
http://www.xbrlsite.com/US-GAAP-2011/ReferenceImplementation/2011-05-15/Landing.html

At that URL you will see an index page which is similar to the index pages of the metapatterns and business use cases and looks as follows:

Reference Implementation, 2011 US GAAP Taxonomy (Permitted, updated 2011-05-15)

Ref	Item	Description
A.	Number	1
B.	Title	**Reference Implementation, SEC XBRL filing using 2011 US GAAP Taxonomy (Permitted)**
C.	Description	An SEC XBRL filing "permitted" by the SEC. XBRL instance financial integrety is properly articulated, XBRL features such as "hypercube jumping" are leveraged, concepts are not duplicated, etc. This is not perfect from an accounting perspective yet, still working on that.
D.	Industry	Commercial and Industrial Companies
E.	HTML Filing	HTML
F.	XBRL Instance (See how to view this using the XBRL viewer add on for Firefox)	XBRL | Human Readable Fact Table Infoset (HTML) | Computer Readable Fact Table Infoset (XML)
G.	XBRL Taxonomy	XSD | Human Readable (HTML) | Computer Readable Infoset (XML)
H. a.	Business Rules (XBRL Calculations)	XML (Linkbase) | Calculation Consistency Check Results
H. b.	Business Rules (Computations, mostly [Roll Forward]s and dimensional aggregations)	XML (Linkbase) | Rendering of Computation Rules | XBRL Formula Validation Results
H. c	Business Rules (Core Financial Integrity)	XML (Linkbase) | Rendering of Core Financial Integrity Rules | Core Financial Integrity Validation Results
H. d	Business Rules (Consistency Checks)	XML (Linkbase) | Consistency Checks Rendering | XBRL Formula Validation Results
I.	Test Submission Files (works with SEC Previewer)	ZIP
J.	Download ALL Files (helps you reverse engineer XBRL instance and XBRL taxonomy)	ZIP
K.	EFM (Edgar Filer Manual) Validation Results (Thank you to XBRL Cloud)	HTML
L.	Fact Tables Analysis	Excel (.xls)
M.	Documentation	PDF | HTML Pages Recap/Examination Utility Output
N.	Examination/Recap Prototype	This prototype tool or viewer allows you to examine an SEC XBRL financial filing.

A good starting point for this example is to look at the HTML version of this SEC financial filing, item E "HTML Filing" from the web page above. This shows what amounts to a typical SEC financial filing. A screen shot of a fragment of the balance sheet is shown below:



Part II

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA (Continued)

CONSOLIDATED BALANCE SHEETS
ABC Company, Inc.
December 31,
(thousands)

ASSETS

	2010	2009
CURRENT ASSETS		
Cash and cash equivalents	11,000	10,000
Restricted cash	1,000	1,000
Short term investments	1,000	1,000
Accounts receivable, net of allowance for doubtful accounts of $1,000 and $1,000	29,000	29,000
Inventories	4,000	4,000
Prepaid expenses	8,000	8,000
Other	2,000	2,000
Total current assets	56,000	56,000
NONCURRENT ASSETS		
Property, plant and equipment, net	9,000	9,000
Other noncurrent assets (1)	82,000	82,000
Total noncurrent assets	91,000	91,000
Total assets	147,000	147,000

LIABILITIES AND EQUITY

	2010	2009
CURRENT LIABILITIES		
unts payable and accrued expenses	00	,000

13.2. Details of Networks

The screenshot of the networks within this SEC XBRL financial filing shows what is contained in the example.

There are approximately 34 networks. Everything in the sample is consistent with both the modelling principles articulated in this document and SEC XBRL financial filing rules.

There is one statement which takes a different approach that most SEC filers but the approach is allowed by EFM filing rules. That section is the statement of changes equity. If you recall from the previous discussions of the Grid metapattern and business use case, this is the reason for the difference.

Basically, it is impossible to model information correctly using the Grid approach to modelling the statement of change in equity because that approach causes two problems to occur. First, duplicate facts are articulated within the digital financial report. Second, incorrect concepts are used if the Grid modelling approach is utilized. These issues are discussed in the metapattern and in the business use case.

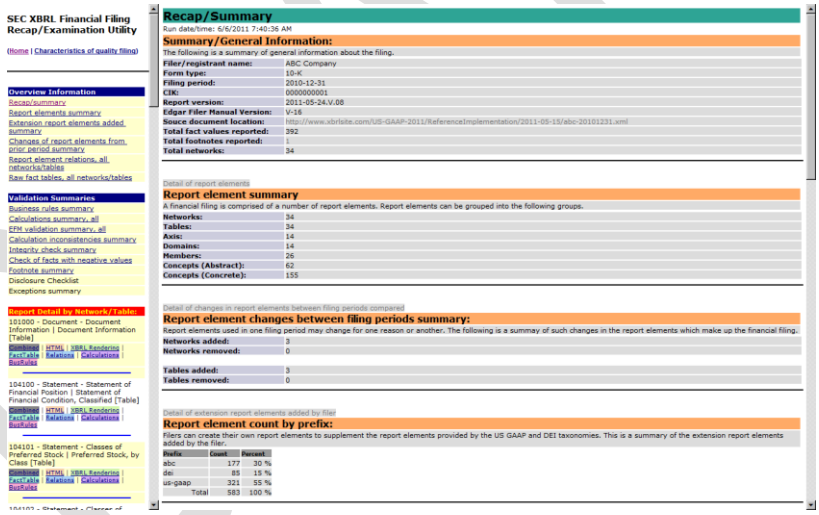
13.3. Other Key Aspects of Example

The following section provides an overview of other key aspects of this example. The items pointed out here also exist for each of the metapatterns, business use cases, and comprehensive example. We explain these in this section to help you understand how to better use the resources provided for each example. Each of these items can be found on the index page for each example.

Be aware that there are some slight differences between this example and other examples provided. This is due to different versions of the tool used.

13.3.1. Recap/examination utility

The screenshot below shows the initial page of the recap/examination utility which is a basically a review tool used to check digital business reports.

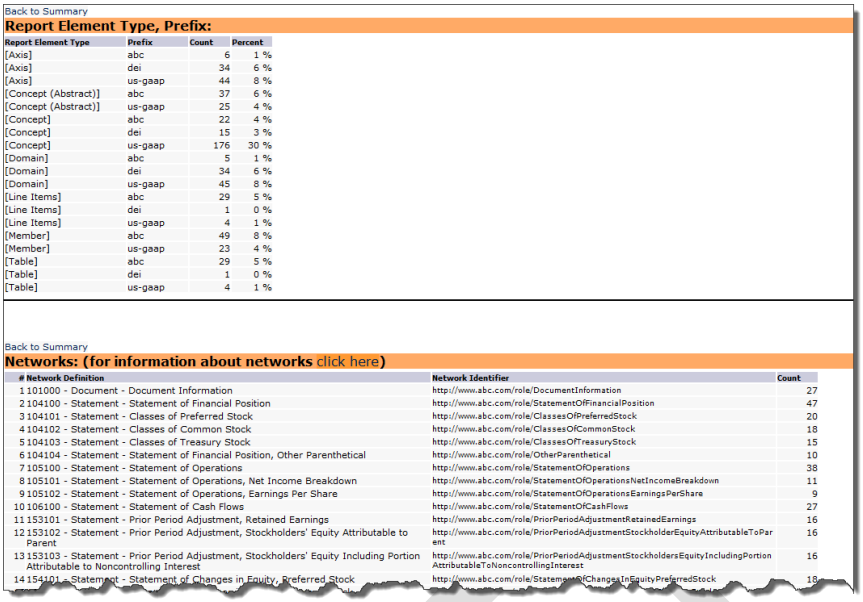


While the tool is helpful in reviewing digital business reports, it is also helpful in understanding the report.

On the left side is a number of different reports available, many of which we will discuss in this section. On the right side is the information for the report you selected. To get a sense for what is available browse the items on this list on the left side.

13.3.2. Report element summary

The report element summary provides a list of the different report elements contained in the business report, helpful summaries, and the ability to navigate to additional detailed information.



Back to Summary

Report Element Type, Prefix:

Report Element Type	Prefix	Count	Percent
[Axis]	abc	6	1 %
[Axis]	dei	34	6 %
[Axis]	us-gaap	44	8 %
[Concept (Abstract)]	abc	37	6 %
[Concept (Abstract)]	us-gaap	25	4 %
[Concept]	abc	22	4 %
[Concept]	dei	15	3 %
[Concept]	us-gaap	176	30 %
[Domain]	abc	5	1 %
[Domain]	dei	34	6 %
[Domain]	us-gaap	45	8 %
[Line Items]	abc	29	5 %
[Line Items]	dei	1	0 %
[Line Items]	us-gaap	4	1 %
[Member]	abc	49	8 %
[Member]	us-gaap	23	4 %
[Table]	abc	29	5 %
[Table]	dei	1	0 %
[Table]	us-gaap	4	1 %

Back to Summary

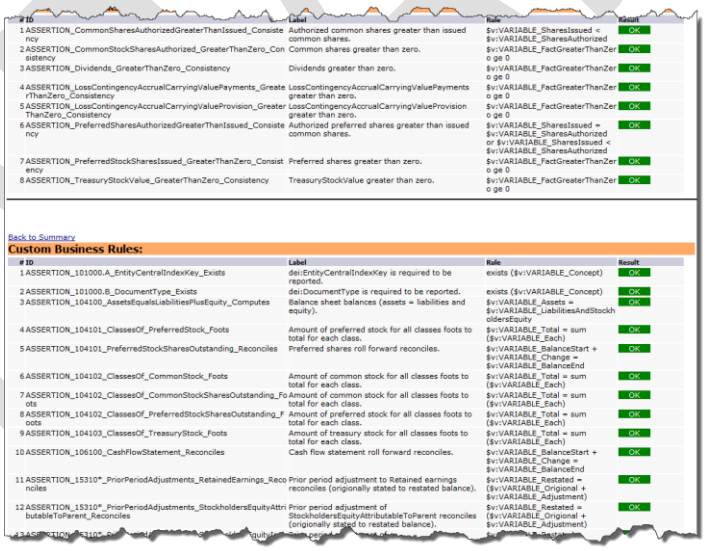
Networks: (for information about networks click here)

#	Network Definition	Network Identifier	Count
1	101000 - Document - Document Information	http://www.abc.com/role/DocumentInformation	27
2	104100 - Statement - Statement of Financial Position	http://www.abc.com/role/StatementOfFinancialPosition	47
3	104101 - Statement - Classes of Preferred Stock	http://www.abc.com/role/ClassesOfPreferredStock	20
4	104102 - Statement - Classes of Common Stock	http://www.abc.com/role/ClassesOfCommonStock	18
5	104103 - Statement - Classes of Treasury Stock	http://www.abc.com/role/ClassesOfTreasuryStock	15
6	104104 - Statement - Statement of Financial Position, Other Parenthetical	http://www.abc.com/role/OtherParenthetical	10
7	105100 - Statement - Statement of Operations	http://www.abc.com/role/StatementOfOperations	38
8	105101 - Statement - Statement of Operations, Net Income Breakdown	http://www.abc.com/role/StatementOfOperationsNetIncomeBreakdown	11
9	105102 - Statement - Statement of Operations, Earnings Per Share	http://www.abc.com/role/StatementOfOperationsEarningsPerShare	9
10	106100 - Statement - Statement of Cash Flows	http://www.abc.com/role/StatementOfCashFlows	27
11	153101 - Statement - Prior Period Adjustment, Retained Earnings	http://www.abc.com/role/PriorPeriodAdjustmentRetainedEarnings	16
12	153102 - Statement - Prior Period Adjustment, Stockholders' Equity Attributable to Parent	http://www.abc.com/role/PriorPeriodAdjustmentStockholderEquityAttributableToParent	16
13	153103 - Statement - Prior Period Adjustment, Stockholders' Equity Including Portion Attributable to Noncontrolling Interest	http://www.abc.com/role/PriorPeriodAdjustmentStockholdersEquityIncludingPortionAttributableToNoncontrollingInterest	16
14	154101 - Statement - Statement of Changes in Equity, Preferred Stock	http://www.abc.com/role/StatementOfChangesInEquityPreferredStock	18

As you make your way through the report, note that you can click on the name of each report element to bring up a new page with additional information about the selected report element.

13.3.3. Business rules summary

The business rules summary shows all the business rules which supports verifying the integrity of the digital business report. This example has approximately 50 business rules.



#	ID	Label	Rule	Result
1	ASSERTION_CommonSharesAuthorizedGreaterThanIssued_Consistency	Authorized common shares greater than issued common shares.	$v:VARIABLE_SharesIssued < $v:VARIABLE_SharesAuthorized	OK
2	ASSERTION_CommonStockSharesAuthorized_GreaterThanZero_Consistency	Common shares greater than zero.	$v:VARIABLE_FactGreaterThanZero = 0 ge 0	OK
3	ASSERTION_Dividends_GreaterThanZero_Consistency	Dividends greater than zero.	$v:VARIABLE_FactGreaterThanZero = 0 ge 0	OK
4	ASSERTION_LossContingencyAccrualCarryingValuePayments_GreaterThanZero_Consistency	LossContingencyAccrualCarryingValuePayments greater than zero.	$v:VARIABLE_FactGreaterThanZero = 0 ge 0	OK
5	ASSERTION_LossContingencyAccrualCarryingValueProvision_GreaterThanZero_Consistency	LossContingencyAccrualCarryingValueProvision greater than zero.	$v:VARIABLE_FactGreaterThanZero = 0 ge 0	OK
6	ASSERTION_PreferredSharesAuthorizedGreaterThanIssued_Consistency	Authorized preferred shares greater than issued common shares.	$v:VARIABLE_SharesIssued = $v:VARIABLE_SharesAuthorized or $v:VARIABLE_SharesIssued < $v:VARIABLE_SharesAuthorized	OK
7	ASSERTION_PreferredStockSharesIssued_GreaterThanZero_Consistency	Preferred shares greater than zero.	$v:VARIABLE_FactGreaterThanZero = 0 ge 0	OK
8	ASSERTION_TreasuryStockValue_GreaterThanZero_Consistency	TreasuryStockValue greater than zero.	$v:VARIABLE_FactGreaterThanZero = 0 ge 0	OK

Back to Summary

Custom Business Rules:

#	ID	Label	Rule	Result
1	ASSERTION_101000.A_EntityCentralIndexKey_Exists	dei:EntityCentralIndexKey is required to be reported.	exists ($v:VARIABLE_Concept)	OK
2	ASSERTION_101000.B_DocumentType_Exists	dei:DocumentType is required to be reported.	exists ($v:VARIABLE_Concept)	OK
3	ASSERTION_104100_AssetsEqualsLiabilitiesPlusEquity_Computes	Balance sheet balances (assets = liabilities and equity).	$v:VARIABLE_Assets = $v:VARIABLE_LiabilitiesAndStockholdersEquity	OK
4	ASSERTION_104101_ClassesOf_PreferredStock_Foots	Amount of preferred stock for all classes foots to total for each class.	$v:VARIABLE_Total = sum ($v:VARIABLE_Each)	OK
5	ASSERTION_104101_PreferredStockSharesOutstanding_Reconciles	Preferred shares roll forward reconciles.	$v:VARIABLE_BalanceStart + $v:VARIABLE_Change = $v:VARIABLE_BalanceEnd	OK
6	ASSERTION_104102_ClassesOf_CommonStock_Foots	Amount of common stock for all classes foots to total for each class.	$v:VARIABLE_Total = sum ($v:VARIABLE_Each)	OK
7	ASSERTION_104102_ClassesOf_CommonStockSharesOutstanding_Foots	Amount of common stock for all classes foots to total for each class.	$v:VARIABLE_Total = sum ($v:VARIABLE_Each)	OK
8	ASSERTION_104102_ClassesOf_PreferredStockSharesOutstanding_Foots	Amount of preferred stock for all classes foots to total for each class.	$v:VARIABLE_Total = sum ($v:VARIABLE_Each)	OK
9	ASSERTION_104103_ClassesOf_TreasuryStock_Foots	Amount of treasury stock for all classes foots to total for each class.	$v:VARIABLE_Total = sum ($v:VARIABLE_Each)	OK
10	ASSERTION_106100_CashFlowStatement_Reconciles	Cash flow statement roll forward reconciles.	$v:VARIABLE_BalanceStart + $v:VARIABLE_Change = $v:VARIABLE_BalanceEnd	OK
11	ASSERTION_15310*_PriorPeriodAdjustments_RetainedEarnings_Reconciles	Prior period adjustment to Retained earnings reconciles (originally stated to restated balance).	$v:VARIABLE_Restated = ($v:VARIABLE_Original + $v:VARIABLE_Adjustment)	OK
12	ASSERTION_15310*_PriorPeriodAdjustments_StockholdersEquityAttributableToParent_Reconciles	Prior period adjustment of StockholdersEquityAttributableToParent reconciles (originally stated to restated balance).	$v:VARIABLE_Restated = ($v:VARIABLE_Original + $v:VARIABLE_Adjustment)	OK

13.3.4. Extension report elements summary

For SEC XBRL financial filings in particular, a summary of the extension report elements added by a filer is helpful, a specific report is provided for this purpose.

36	Stockholders' Equity, Including Portion Attributable to Noncontrolling Interest, Period Increase (Decrease) [Roll Up]	Abstract concept used for organization only	abc:StockholdersEquityIncludingPortionAttributableToNoncontrollingInterestPeriodIncreaseDecreaseRollUp
37	Treasury Stock [Roll Forward]	Abstract concept used for organization only	abc:TreasuryStockRollForward

Concepts (Concrete) added by filer: (for information about concepts click here)

#	Label	Data Type	Period Type	Balance Type	Prefix	Documentation	Name (Click nam
1	Additional Paid-in Capital, Period Increase (Decrease)	Monetary	For Period (duration)	Credit	abc	Total changes in additional paid-in capital	abc:AdditionalP
2	Common Stock, Shares Outstanding, Period Increase (Decrease)	Shares	For Period (duration)		abc	Total changes in common shares	abc:CommonSto ase
3	Common Stock, Value, Outstanding, Period Increase (Decrease)	Monetary	For Period (duration)	Credit	abc	Total changes in common stock value	abc:CommonSto se
4	Correction of Prior Period Error	Monetary	As of (instant)	Credit	abc	Correction of a prior period error	abc:CorrectionO
5	Effect of Mandatory Change in Accounting Policy for Adoption of FAS XXX	Monetary	As of (instant)	Credit	abc	Effect of mandatory change in accounting policy from FAS XXX	abc:EffectOfMan ionOfFasXxx
6	Effect of Voluantary Change in Accounting Policy	Monetary	As of (instant)	Credit	abc	Effect of voluantary change in accounting policy	abc:EffectOfVolu
7	Preferred Stock, Shares Outstanding, Period Increase (Decrease)	Shares	For Period (duration)		abc	Total change in preferred stock shares	abc:PreferredSto ease
8	Preferred Stock, Value, Outstanding, Period Increase (Decrease)	Monetary	For Period (duration)	Credit	abc	Total change in preferred stock value	abc:PreferredSto ase
9	Retained Earnings (Accumulated Deficit), Period Increase, Period Increase (Decrease)	Monetary	For Period (duration)	Credit	abc	Total changes in retained earnings	abc:RetainedEar riodIncreaseDec
10	Retained earnings, Adjustments	Monetary	As of (instant)	Credit	abc	Total adjustments to retained earnings	abc:RetainedEar
11	Stockholders' Equity Attributable to Noncontrolling Interest, Period Increase (Decrease)	Monetary	For Period (duration)	Credit	abc	Total changes in noncontrolling interest	abc:Stockholder stPeriodIncreas
12	Stockholders' Equity Attributable to Parent, Adjustments	Monetary	As of (instant)	Credit	abc	Total adjustments to parent equity	abc:Stockholder
13	Stockholders' Equity Attributable to Parent, Period Increase (Decrease)	Monetary	For Period (duration)	Credit	abc	Total changes in parent equity	abc:Stockholder eDecrease
14	Stockholders' Equity, Including Portion Attributable to Noncontrolling Interest, Adjustments	Monetary	As of (instant)	Credit	abc	Total adjustments to noncontrolling interest	abc:Stockholder controllingInteres
15	Stockholders' Equity, Including Portion Attributable to Noncontrolling Interest, Period Increase (Decrease)	Monetary	For Period (duration)	Credit	abc	Total changes in equity	abc:Stockholder controllingInteres
16	Treasury Stock, Period Increase (Decrease)	Monetary	For Period (duration)	Debit	abc	Total changes in treasury stock	abc:TreasurySto

13.3.5. Combined report

While most reports provides lists of components of a digital business report, the combined report compiles the same information but organizes the pieces by component of the report. As such, all information for a network/table is provided together to facilitate reviewing each report section.

Combined Report for Network/Table

Network:	309020 - Disclosure - Note I. Geographic Areas (http://www.abc.com/role/GeographicAreas)
Table:	Revenues by Geographic Area [Table] (abc:RevenuesByGeographicAreaTable)

HTML Rendering

Geographic Areas

Revenues by geographic areas were as follows for the years ended December 31 (thousands):

	2010	2009
NORTH AMERICA:		
United States	4,000	4,000
Canada	2,000	2,000
Total North America	6,000	6,000
EUROPE:		
United Kingdom	2,000	2,000
Germany	2,000	2,000
Total Europe	4,000	4,000
Total	10,000	10,000

13.3.6. Other information

There is a lot of additional information, more than what can be shown in this document. The point of the brief introduction is not to provide a comprehensive understanding of this information, but rather to serve as an introduction to help jumpstart your exploration.

14. Special or Specific Modelling Considerations

This section summarizes special and specific considerations when modelling an SEC XBRL financial filing. The key piece of information this section provides are subtleties which are often overlooked when working with specific types of structures of a financial report.

14.1. Notion of [Line Items] Key Concepts

Within a [Table]'s set of [Line Items], certain concepts are required or the set of [Line Items]s provided will simply make no sense. For example consider the following disclosure of nonmonetary transactions:

22	**Nonmonetary Transaction [Line Items]**	[Line Items]		
23	Details of Nonmonetary Transactions [Table Text Block]	[Concept] Text Block (HTML)	For Period	
24	Nonmonetary Transaction [Hierarchy]	[Abstract]		
25	Nonmonetary Transaction, Basis of Accounting for Assets Transferred	[Concept] Text/String	For Period	
26	Nonmonetary Transaction, Name of Counterparty	[Concept] Text/String	For Period	
27	Nonmonetary Transaction, Gain (Loss) Recognized on Transfer	[Concept] Monetary	For Period	Credit
28	Nonmonetary Transaction, Amount of Barter Transaction	[Concept] Monetary	For Period	Credit
29	Nonmonetary Transaction, Fair Value Not Determinable	[Concept] Text/String	For Period	
30	Nonmonetary Transaction, Gross Operating Revenue Recognized	[Concept] Monetary	For Period	Credit

The concept on line 28, the amount of the transaction, is clearly required as that is what is being disclosed. All other information provides additional descriptive information about that amount. This descriptive information may, or may not, be required to be disclosed depending on the financial reporting rules. Filers can add additional descriptive information. But in all cases the amount will exist because the fundamental information being communicated makes no sense without it.

These "required concepts" are not clearly indicated within the US GAAP taxonomy, however they are VERY clearly documented within US GAAP. A financial reporting disclosure checklist is used by accountants to make sure they don't leave anything out. Many of these relations (if you have this, then you have to disclose this; if you disclose this then you likewise need to disclose this) used within a financial reporting disclosure checklist can be checked using software.

14.2. Deciding Between Isomorphic and Polymorphic Tables

There are three different ways [Table]s can be articulated in a taxonomy:

- Unique tables (i.e. all tables isomorphic or each table has a unique meaning)
- Only one table for everything (i.e. every [Table] has the same name)
- Mixture (i.e. some tables are unique, some are used to mean the same thing, for example how "Statement [Table]" is used in the US GAAP Taxonomy; polymorphic tables)

Isomorphic tables have some advantages, polymorphic tables have no advantage what-so-ever. For more information, see this analysis:

http://www.xbrlsite.com/Examples/Dimensions/

14.3. Modeling Classes with Only One Member

This example focuses on one specific point. As you can see in the screenshot below of information about classes of preferred stock and common stock; the common stock has two classes whereas the preferred stock has only one:

Classes of Preferred Stock

Class	Par Value	Share Subscriptions	Shares Authorized	Shares Issued	Shares Outstanding	Amount 2010	Amount 2009
company:ClassAPreferredStockMember	1	20000	20000	20000	6000	2,000	1,000
				Total all Classes	6000	2,000	1,000

Classes of Common Stock

Class	Par Value	Share Subscriptions	Shares Authorized	Shares Issued	Shares Outstanding	Amount 2010	Amount 2009
company:ClassACommonStockMember	1	10000	10000	10000	3000	500	500
company:ClassBCommonStockMember	1	10000	10000	10000	3000	500	500
				Total all Classes	6000	1,000	1,000

How would or should having only one [Member] in a breakdown impact the modelling of information? The question should not really be about whether one specific company has one class of two or more classes of something; but rather modelling should be driven by the possibility of ever having either only one or one-to-many [Member]s of some class of information.

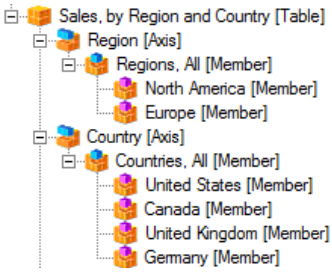
The point here is that an entity could have more than one class of preferred stock and a class of preferred stock can have a number of properties. Both the details of the class and the total of all classes, in the case shown above the total and the class are the same because there is only one member within the class; however, the total and the amount for each class are two different pieces of information.

14.4. Modeling as Nested Domain Members

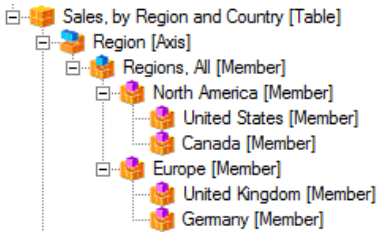
Consider the example below which breaks down revenues by region and country:

	2010	2009
NORTH AMERICA:		
United States	4,000	4,000
Canada	2,000	2,000
Total North America	6,000	6,000
EUROPE:		
United Kingdom	2,000	2,000
Germany	2,000	2,000
Total Europe	4,000	4,000
Total	10,000	10,000

There are two obvious options which might come to mind for modelling this information. The first option is to model a Region [Axis] and a Country [Axis]. That approach might look something like this:



Alternatively, one Region [Axis] with members for both the region and the country might be modelled. This approach might look as follows:



The question is, which is the more appropriate approach, one [Axis] with nested members or two [Axis]?

Today, the best approach would be to avoid nested hierarchies of [Member]s as XBRL is silent on articulating how to aggregate such nested hierarchies of [Member]s.

If you find yourself repeating information within members your modelling is more than likely incorrect. For example, modelling "North America, United States" and then "North America, Canada" packs two meanings into one [Member] which should generally be avoided.

14.5. Choosing Between Modeling as Concepts or Member of Axis

At times a choice needs to be made as to whether information should be modelled by modelling information as a concept and part of the set of [Line Items] or as a [Member] or an [Axis]. The *Roll Up*, *Class* and *Class Properties* business use cases help understand the dynamics at play and how they will impact your model.

In those business use cases the choices may not be so obvious. Let's look at a more clear cut example. Consider this breakdown of revenues by geographic area.

Geographic Areas

Revenues by geographic areas were as follows for the years ended December 31 (thousands):

	2010	2009
NORTH AMERICA:		
United States	4,000	4,000
Canada	2,000	2,000
Total North America	6,000	6,000
EUROPE:		
United Kingdom	2,000	2,000
Germany	2,000	2,000
Total Europe	4,000	4,000
Total	10,000	10,000

This information could be modelled by creating 7 concepts such as:

- Revenues, North America
- Revenues, United States
- Revenues, Canada
- Revenues, Europe
- Revenues, United Kingdom
- Revenues, Germany
- Revenues

Looking at those concepts, you see that the concepts have two pieces of descriptive information: "revenues" which describes the type of concept and geographic type information.

This type of pattern tends to scream out for the use of an [Axis] for the geographic areas which could be used to characterize the one concept "Revenues".

Other factors which should be considered when trying to determine the best approach to model this information is:

- How the information aggregates to other information in your model.
- How the information ties to other information within your model.
- Other modelling decisions which you have already made which push you toward one specific option or another.

15. Semantic Models

This section provides information for adding an additional layer, a semantic layer, on top of the logical layer. The benefit of a semantic layer is additional ease of use and control of the model. This section explains the benefits of a semantic layer by using financial reporting as an example. However, a semantic model can be created for any domain.

15.1. Difference between Logical and Semantic Models

The logical model described in this document uses terms such as Table, Axis, Line Items, Concept. These terms tend to be general in nature. The reason for this is that the logical model is intended to be broadly used to solve many different types of business reporting problems.

A semantic model is more specific and relates to one specific reporting situation. An example of a specific reporting situation is external financial reporting under US GAAP. The more specific the definition, the more specific the semantics.

A semantic model is basically a set of business rules specific to the domain to which the semantic model relates. As such, a semantic model is more specific and the terminology used within the model is likewise more specific. A semantic model for external financial reporting might use terms such as balance sheet, income statement, accounting policies, disclosures and assets, net income, and net cash flows.

The up side is that a semantic model is significantly easier for a business user to relate to. The down side is that a semantic model is very specific. You can look at a logical model as somewhat of a Swiss Army Knife and a semantic model more like one specific knife in your collection of kitchen knives, specialized for a specific task which it performs extremely well.

15.2. Semantic Model for Financial Reporting, Background

US GAAP, in part (it does much more), describes disclosure rules for financial reporting. Today these disclosure rules are summarized in the form of an inherent understanding of financial reporting rules by accountants such as that the balance sheet balances, in disclosure checklists, and in tools such as the AICPA's popular Accounting Trends and Techniques. In this way, all these different pieces constitutes what amounts to a schema which financial reports must follow.

Imagine if many of these rules could be articulated in a form which is readable by a computer software application. If both the rules and the financial report were articulated in a form which a computer could read, then a computer could validate the financial report against the financial reporting rules because both the report and the rules are understandable and useable by a computer software application.

XBRL is a global standard structured syntax readable by a computer application. Part of XBRL is XBRL Formula which is a powerful language for expressing business rules. Both are globally accepted standards which makes them even better because they can be exchanged with others. The US GAAP taxonomy is a global standard dictionary of concepts and other metadata which is used to create financial reports and is likewise readable and useable by computer applications.

Anyone familiar with XBRL and financial reporting understands that a financial report created for a company, say an SEC XBRL financial filing, can be validated using XBRL Formula. Not every possible thing can be validated such as whether

the proper US GAAP concept was used and the if the value of the fact which reports the concept ties to the general ledger system of the company. However, there is much which can be validated using the features of XBRL including XBRL Formula. So what this means is that an individual SEC XBRL financial filing has a schema which is enforceable by business rules which can prove whether that SEC XBRL financial filing is correctly created against those rules, whatever those rules might be.

The question is are there any standard business rules which can be used across all SEC XBRL financial filings which are all made in US GAAP. If there are, then this constitutes a schema which could be applied to every SEC XBRL financial filing.

Additionally, there is other information which is commonly used in financial reporting and which helps in the financial reporting process. This information, called metadata, may or may not be expressed using XBRL, but if articulated in some structured format, preferably a standard structured format, then computers can leverage this metadata in the process of financial report creation and analysis of such digital financial reports.

Well, the fact is that there are many such rules and much metadata.

15.3. FASB/IASB Financial Reporting Conceptual Framework

The FASB and IASB are creating a common framework for financial reporting (see http://goo.gl/4fSqO). The framework is not complete, but it does offer insight into the pieces of a financial report.

Two pieces in particular of the common framework offer help in defining the pieces of a financial report, definitions of "financial statements" and the "elements of financial statements".

Financial statements
Balance sheet
Income statement
Cash flow statement
Statement of changes in shareholders' equity
Related disclosures

Elements of financial statements
Assets
Liabilities
Equity
Investment by owners
Distributions to owners
Revenues
Expenses
Gains
Losses
Comprehensive income

The category "related disclosures" is broad; the FASB Accounting Standards Codification (ASC) offers a way to break these disclosures into useful categories:

FASB ASC Categories of "Related Disclosures"
Organization
Consolidation
Presentation of financial statements and basis of reporting
Significant accounting policies
Disclosures, financial statement accounts
Disclosures, broad transaction categories

These terms are quite familiar to accountants and others who work with financial reports. These terms are found in books and other publications used by those working with financial reports. But what if these terms, and other information, were expressed in a form understandable by a computer software application. Here is much of this information expressed in either XBRL or RDF/OWL:

http://digitalfinancialreporting.wikispaces.com/

Will everything be done by every company creating a financial report in exactly the same way? Surely not, and this misses the point. The point is, a framework can be created. The question is to what extent is the framework the same for every reporting entity and to what extent is it different. Even more concisely, to what extent can this conceptual framework for US GAAP and IFRS be leveraged.

15.4. Notion of Financial Report Keystones

There are certain keystones or corner stones which exist in financial reporting. This is a summary of such keystones. These keystones can be seen by looking at SEC XBRL financial filings. See the appendix of this document for an analysis of 1474 such financial filings which supports the notion of these keystones.

But regardless of whether all financial reports supporting exactly the same keystones, the real questions are: What keystones does your report support? To what extent are your keystones similar to the keystones of other financial reports?

The answer to those two questions will determine the amount of leverage which can be provided by the metadata of financial reporting.

These business rules for financial reporting would be expressed in a computer readable form. Here is an example of these business rules articulated using XBRL Formula:

http://www.xbrlsite.com/US-GAAP-2011/ReferenceImplementation/2011-05-15/abc-20101231_formula-core-financial-integrity.xml

Here is what the rules might look like to a human:

http://www.xbrlsite.com/US-GAAP-2011/ReferenceImplementation/2011-05-15/abc-20101231_formula-core-financialIntegrity.html

And here is the results of testing a financial report against such rules:

http://www.xbrlsite.com/US-GAAP-2011/ReferenceImplementation/2011-05-15/abc-20101231_FormulaTrace-financialIntegrity.html

15.4.1. Balance sheet

The balance sheet of a corporation always has the concepts "Assets" and "Liabilities and Equity". The value of both of those concepts MUST have the same value (i.e. the balance sheet balances.). Depending on the industry you might have "Current Assets" and "Current Liabilities" (i.e. a classified balance sheet). Or, in some circumstances a balance sheet may be organized in the form of "Net Assets". The computations for "Assets" and "Liabilities and Equity" foot.

Reporting entities can hang other concepts from "Assets" and from "Liabilities and Equity"; but you definitely have those two concepts and anything that does hang off those concepts adds up correctly. (i.e. the line items add up to the totals for "Assets" and "Liabilities and Equity".)

In the US GAAP Taxonomy, a different concept is provided for the equity of a partnership: "Partners' Capital". When the US GAAP Taxonomy is expanded to include proprietorships, it is likely that a concept such as "Owners' Equity" will be added. The US GAAP taxonomy could have used one concept for all types of

equity, "Equity", and then differentiating the equity via the line items of equity for corporations, partnerships, proprietorships, etc. But, that choice was not made and thus the total amount of "Liabilities and Equity" could be represented by a finite number of different concepts.

There are obviously other balance sheet rules, but these give you a sense of how the semantics of a balance sheet can be articulated and leveraged.

15.4.2. Income statement

It seems reasonable that and empirical evidence shows that an SEC XBRL financial filing would always have the following two line items: "Net Income (Loss) from Continuing Operations Before Tax" and "Net Income (Loss)". The following is rational for this belief. First, it would seem reasonable to assume that a company would more likely than not have continuing operations. In terms of "Net Income (Loss)"; that could be broken down by the portion attributable to the parent and the portion attributable to the noncontrolling interest, but a company should always have "Net Income (Loss)". "Net Income (Loss) Available to Common Shareholders" is a breakdown of "Net Income (Loss)", only if a filer has preferred dividends or other adjustments.

There is a "step down" in the income statement, companies only have the steps if they have that component. The components are: Income from Equity Method Investments; Discontinued Operations; Extraordinary Items; Income Tax (Benefit); Net Income (Loss) from Noncontrolling Interest; Preferred Dividends or other Adjustments.

15.4.3. Cash flow statement

The cash flow statement is very consistent. Every company reported the concept which has the standard label "Cash and Cash Equivalents, Period Increase (Decrease)" which communicates "Net Cash Flows" from operating, financing, and investing activities. That concept can be broken down into three other concepts: Net cash flows from operating activities, Net cash flows from investing activities, and Net cash flows from financing activities.

Companies will highly likely have operating cash flows, it could be that they have no financing or investing cash flows. It is conceivable that they don't have operating cash flows because they are not operating companies. There are two other things which could be included in "Net Cash Flows": Effect of Exchange Rate on Cash and Cash Equivalents and Net Cash Provided by (Used in) Discontinued Operations. Now, discontinued operations could be configured in a number of different ways, but it is always a part of "Net Cash Flows".

Effect of Exchange Rate on Cash is a different story; I am getting two different messages. One of two things must be true. Either it is ALWAYS part of "Net Cash Flows" (this is what I see in 99.99% of filings) or it could be part of the reconciliation of cash (i.e. not part of "Net Cash Flow").

One or both of these business rules must be true: "Beginning Cash + Net Cash Flows = Ending Cash". Or, alternatively, if exchange gain is NOT part of "Net Cash Flows"; then: "Beginning Cash + Net Cash Flows + Effect of Exchange Rate on Cash = Ending Cash". It could be the case that the few filers who are using the alternative are making a mistake in their computation.

Net Cash Provided by (Used in) Operating Activities could be broken down using one of two approaches: the indirect method which is used by most entities and the direct method which is used less often.

There are two approaches to expressing information about Net Cash Flows from Discontinued Operations. One approach is to include cash flow information relating to discontinued operations as sub components of operating, investing, and financing cash flows. The alternate approach is to combined all net cash flows from discontinued operations as an additional sibling to net cash flows from operating, investing, and financing activities, "Net Cash Provided by (Used in) Discontinued Operations".

There is an unresolved issue surrounding the use of "Net Cash Provided by (Used in) Operating Activities" as opposed to being more specific and using "Net Cash Provided by (Used in) Operating Activities, Continuing Operations" if a filer ONLY has cash flows from continuing operations. This is not an issue if discontinued operations are reported as using either approach, cash flows from continuing and discontinued operations needs to be differentiated.

15.4.4. Statement of changes in equity

The beginning and ending balances of the statement of changes in equity tie to the balance sheet equity section. Net income shown in this [Roll Forward] ties to the income statement (the statement of changes in equity is a collection of [Roll Forward]s for each balance sheet equity account). (All the statement of changes in equity is, is a bunch of [Roll Forward]s.

The different breakdowns of Net Income (Loss) appear in specific columns of the statement of changes in equity: Net Income (Loss) Attributable to Parent, Net Income (Loss) Attributable to Noncontrolling Interest, Net Income (Loss) Including Portion Attributable to Noncontrolling Interest.

There is a [Roll Forward] for every equity account and shares and there is a [Roll Forward] for all the periods shown on the balance sheet.

15.4.5. Basis of reporting

The basis of reporting provides information about the entity and over arching reporting and presentation issues used by the financial report.

15.4.6. Significant accounting policies

Some policies relate to financial statement line items. Some don't. If they do tie to a line item, the fact that it does tie should be expressed.

15.4.7. Disclosures, financial statement accounts

> HINT: Jon Rowden and Mike Willis make the following statement in their white paper Making Sense of XBRL In the US and the UK, "The accountants' skill and expertise can then be applied to and focused on disclosures where there is a problem, rather than turning each disclosure note into something resembling the accounting equivalent of a hand-crafted work of art."

Financial statement disclosures, in some cases should be a hand-crafted work of art. But not in most cases. Most accountants do not desire to be artists, rather they endeavour to comply with financial reporting rules and XBRL can help accountants achieve this desire. There are some required disclosures. Other disclosures are required if you have certain financial statement line items. Other financial statement disclosures are required if the financial statement line item has certain specific characteristics. Other financial statement disclosures are common practice or purely optional. This information can be organized in different ways. Financial statement disclosures are not random.

As there are price differences between hand-crafted furniture and the furniture which you might purchase at IKEA or at a high end furniture store, there are different prices or costs incurred to taking different approaches to creating financial statement disclosures.

Some disclosures relate to financial statement line items. Some don't. The ones that do tie to those line items (i.e. they are the same XBRL concept in the statement and in the disclosure). If the disclosure is supposed to foot, some business rule exists to show that (either an XBRL calculation or an XBRL formula). Things that should be tied together are tied together, be they because they relate to the same class of stock, same entity, same class of some other line item, or in some other thing which should be tied together.

Generally disclosures for financial statement accounts are made if a line item of such account appears on a primary financial statement.

15.4.8. Disclosures, broad transaction categories

US GAAP requires disclosures of specific types of transactions if those transactions exist. These transactions can be organized by category of such transaction.

Disclosures relating to broad transaction categories must be made if such transactions exist.

15.5. Disclosure Checklist

A disclosure checklist is basically a human readable set of business rules often categorized as "reportability rules". Reportability rules communicate what must be reported. These are generally along the lines of, "If you have this, then you must report this…" Computers are quite good at automating these type of if, then relations.

15.6. Articulating Business Characteristics using [Axis]

Key to comparability is an explicit understanding of the characteristics of a reported fact. These business-related characteristics are communicated using [Axis]. [Axis] can be put into two broad groups: general use and specific use.

Fundamentally, when you think of [Axis] or characteristics, think in business terms, not technical terms. It is business information which is being expressed. You can ignore the XBRL syntax which instantiates these business semantics.

15.6.1. General use axis

General use [Axis] tend to be used on all [Table]s within an SEC XBRL financial filing or on more than one [Table]. Here are the common [Axis] used within an SEC XBRL financial filing and the implied values of the [Axis] does not explicitly exist.

- **Reporting Entity [Axis]**. Every fact reported is associated with a reporting entity. For SEC XBRL filers that entity is identified by the filers CIK number. This [Axis] is explicitly articulated using the XBRL syntax as the "entity identifier" and is required by XBRL.
- **Period [Axis]**. Every fact reported is also explicitly associated with a period as this is likewise required by XBRL. This period can only be articulated in a "calendar period" form. It would be good to be able to articulate fiscal period information, but the XBRL syntax cannot accommodate this need in its current form. So, this period is really a

calendar period only, it is always required, and is expressed in the XBRL syntax as the "period" portion of a context.

- **Report Date [Axis]**. The report date is the date of the SEC or the date of the auditor's report. There is ambiguity surrounding using this [Axis], but the safe way to go is to use this strategy in my view. If you do not have a prior period adjustment, then everything in the report relates to the date of your filing or auditor report can be implied. If you do have a prior period adjustment, then you need to explicitly use the Report Date [Axis] to differentiate originally reported and restated values.
- **Legal Entity [Axis]**. The legal entity of a fact is implied to relate to the consolidated entity unless it is explicitly associated with some other legal entity such as a parent holding company in SEC XBRL filings. Providing no Legal Entity [Axis] means the same thing as explicitly providing the "Legal Entity [Axis]" onto a [Table] and providing only the "Entity [Domain]" (which really means "Consolidated Entity [Domain]").
- **Business Segment [Axis]**. When breaking your filing information out by business segment, you need to use the business segment [Provided]. If this does not exist, then total for all business segments is implied.
- **Geographic Areas [Axis]**. When breaking your filing information out by geographic areas, you need to use the geographic area [Axis]. If this does not exist, then total for all geographic areas is implied.
- **Reporting Scenario [Axis]**. Sometimes you might need to differentiate information which is actual, budgeted, forecast, etc. This is what the Reporting Scenario [Axis] is for. If you don't explicitly use it, then facts are implied to be actual.
- **Operating Activities [Axis]**. This [Axis] helps you differentiate continuing operations and discontinued operations. If it does not exist, facts are implied to relate to continuing operations.
- **Products and Services [Axis]**. This lets you break information down by product/service. If it does not exist, it is implied to mean all products and services.
- **Major customers [Axis]**. This lets you break information down by customer. If it does not exist, all customers are implied.

15.6.2. Specific use axis

Specific use [Axis] tend to be used on only one [Table] within an SEC XBRL financial filing and are always explicitly provided. There are several hundred specific use type [Axis]. Here is an example of some:

- Equity Interest Issued or Issuable Type [Axis]
- Extraordinary Item [Axis]
- Registration Payment Arrangement [Axis]

15.6.3. Axis aggregation models

[Axis] aggregation models should be flat as XBRL has no [Axis] aggregation rules. Until such time as XBRL Formulas can be used to articulate these rules, [Member]s of an [Axis] should avoid hierarchy. See the SEC XBRL Primer Axis Aggregation section for more information.

For more information see the logical model and the appendix section which discusses [Axis] aggregation models in more depth.

16. Verifying Digital Business Reports Using Automated Validation

It is easy to validate a financial report which is created on paper. All you need to do is give the report to a competent accountant, hand them a 10-key and green eye shades, give them a paper disclosure checklist and your worries are over; the accountant will make sure it is correct. The problem is that this process is labor intensive, the knowledge of accountants can vary widely, it is time consuming because it is labor intensive and it is costly because it is labor intensive. Further, because accountants are human they can make mistakes.

SEC XBRL financial filings changes this equation. The XBRL format can be read by software applications and many of the verification processes can be automated as a result. You will never be able to do away will all human involvement. In fact, because the mindless work of making sure everything foots and cross casts and otherwise ticks and ties; the knowledge of an accountant can be applied to other important areas of verification which were never performed because the analysis budget was used up on the mindless tasks and these more important tasks can never be automated, they take human judgment.

Further, even this "automated verification" will be rendered obsolete when software applications perform these tests as you create your financial report within a software application which understands the semantics of a financial statement.

16.1. Automated verification a computer can perform

The following are the automated verification or validation which XBRL can perform. Humans still play a role in some of these. I will cross reference the type of validation to a set of four categories which I have heard automated validation placed into: **correctness**, **completeness**, **consistency**, and **accuracy**. I will also provide examples of this validation where I can.

- **Edgar filer manual (EFM) validation**. This is the only validation required to pass a filing into the SEC. But this is far from what is necessary to tell whether your financial information is correct.
- **Vender specific EFM validation (such as XBRL Cloud validation)**. There are different interpretations in SEC EFM validation. That is why XBRL Cloud validation is different than SEC XBRL validation required for submission. As SEC EFM validation is not compete and as there is no standard and complete SEC EFM validation conformance suite, XBRL Cloud validation is one publically available interpretation of SEC EFM validation rules which should be considered. This covers XBRL syntax validation, SEC specific validation requirements which includes meta data related, some light semantics. (Relates to: correctness, consistency, completeness)
- **Information model validation**. Tests to be sure you are creating things such as your [Table]s, [Roll Forward]s, roll ups, and hierarchies consistent with the US GAAP Taxonomy. Doing so is specified in the US GAAP Taxonomy Architecture. This helps make sure your extension taxonomies are consistent with the US GAAP Taxonomy and with other SEC XBRL filers. For example, section 4.5 covers how [Table]s are to be created. I don't have a validation report for this, but this shows what the reference implementation taxonomy looks like which follows the US GAAP Taxonomy information model. (Relates to: consistency)

- **Domain partition model validation**. The aggregation model used by the domain of an axis, sometimes referred to as dimensional aggregations, is both expressed by XBRL Formulas and validated by XBRL Formulas. (Relates to: correctness)
- **Extension points and extensibility rules validation**. Tests to see if where you are extending the US GAAP Taxonomy is appropriate and if you are creating logical extensions. For example, putting an income statement line item on the balance sheet is illogical. Or, adding a concept at the same level as "Assets" and "Liabilities and Equity" on the balance sheet might not make much sense. (Relates to: consistency)
- **Financial integrity validation within a [Table]**. Tests to be sure that each [Table], be that [Table] explicitly defined or implied, is "internally consistent and correct". Financial integrity is discussed here. For example, does your balance sheet have "Assets", "Liabilities and Equity", does your balance sheet balance, and do all the line items add up correctly? That is financial integrity, just like a paper based financial statement. (Relates to: correctness, consistency, completeness, accuracy)
- **Financial integrity validation between [Table]s**. Tests to be sure that explicit/implicit [Table]s are properly related to one another. For example, the balance sheet ties to the statement of changes in equity. The cash flow statement cash account needs to tie to the balance sheet. Disclosure details need to tie the financial statement line items. (Relates to: correctness, consistency, accuracy)
- **Internal consistency**. When I originally created my reference implementation I did not have access to the XBRL US consistency suite. I asked that model be run through that suite of tests and the consistency suite pointed out that the reported issued shares was less than the reported authorized shares, which is impossible. Internal consistency relates to the consistency between reported facts within an XBRL report.
- **Computations validation**. A type of consistency is whether all the numbers foot, cross cast or otherwise tick and tie. XBRL calculations offers some help here, for example here is the validation report for the reference implementation which shows that things add up. But there are things that XBRL calculations cannot test, something else must be used. For example, [Roll Forwards], dimensional aggregations (see axis aggregation model above), and other more complex computations. Need to be verified whether the SEC tests these or not. This XBRL Formula linkbase is used to test the reference implementation, here are the passing results. (Relates to: accuracy)
- **Consistency with prior period filings**. The ending balances in your period 1 filing will become the beginning balances in your period 2 filing. Automated validation tests to see if the current period filing beginning balances tie to the prior period filing ending balances are possible. (Relates to: correctness, consistency, completeness, accuracy)
- **Disclosure checklist validation**. Also sometimes referred to as reportability rules, these tests help to make sure your disclosures are complete. For example, if PPE is reported, you have to include your PPE policies and PPE disclosures. This has less value for a financial which is already complete, when making modifications for new disclosures this can add value. (Relates to: completeness)

- **Industry standards validation**. Are industry practices being followed if the applicable industry is different than US GAAP for commercial and industrial companies. (Relates to: correctness, consistency, completeness)
- **Rendering validation**. Does your SEC filing render correctly, using the SEC previewer for SEC filings. Test to see how the XBRL instance renders within the SEC previewer. (Relates to: consistency)
- **Comparability validation**. Tests to see how well an XBRL filing can be compared to a similar XBRL filing. (Relates to: consistency)
- **Key performance indicators validation**. Tests for wild fluctuations against internal benchmarks and industry averages. Much like an auditor's variance analysis. (Relates to: correctness, consistency, accuracy)
- **Best practices validation**. Other common practices. (Relates to: correctness, consistency, completeness, accuracy)
- **Style, spelling and grammar checking**. The US GAAP taxonomy uses a specific style. For example, "Long term debt" could be spelled "Long-term Debt" or "Long-Term Debt". Automated style, spelling, and grammar checking can help in creating SEC XBRL filings.

16.2. Dealing with Differing Validation Results

Different validation results from different sources are caused by two things. First, they are caused by differences between the Edgar Filer Manual and the validation tests provided by the SEC. Second, they are determined by additional validation rules created by someone which are correct so people pay attention to them, but they go beyond what the SEC validation process performs when you submit an SEC XBRL filing.

XBRL Cloud's Edgar Dashboard believes that they have implemented the Edgar Filing Manual correctly, and because the results seem reasonable people pay attention to the results.

The XBRL US Consistency suite also appears to be good and accurate tests of SEC XBRL instances and people also pay attention to that.

Both XBRL Cloud and XBRL US charge fees for their validation.

If all this sounds confusing and if it seems better if there were one set of validation tests that everyone complies with, you would be right. The SEC could, and we believe should, be the referee but until they do, which set of validation you should use can be a little confusing. But that is not the way it is today. This will all be sorted out eventually, but yes; this is confusing today.

17. Analysis and Comparison of Digital Business Information

The ultimate test as to whether a model-based digital business report is properly created is its utility in terms of being analyzed and/or compared. This section uses the example of financial reports and more specifically SEC financial filings in order to discuss the use and analysis of model-based digital business reports. This section places no judgments as to what *should* be comparable. What this section does is shows common types of uses of SEC XBRL financial filings and want is *necessary* for comparability to occur. Decisions as to where comparability should exist is a question which the reporting supply chain participants must answer.

Use of digital financial information should not be equated the techniques used to gather and use information today. Consider the following is a video of one analysis software application which leverages XBRL as an example of the possibilities available:

http://www.sqlpower.ca/consulting/page/xbrl-analytics

17.1. Financial Reporting Analysis Use Cases

These are the general use cases for information reported in SEC XBRL financial filings:

- **Analysis of a single filing**. Analysis of one financial filing from one filing entity.
- **Time series analysis for a filer**. Two or more financial filings from the same filing entity.
- **Comparative analysis across filers**. Two or more financial filings from different filing entities using different subsets of information.
- **Ratio analysis**. An analysis of a single filing, a time series analysis, or a comparative analysis using ratios.

17.2. Two Approaches to Comparing Information

There are two general approaches to enabling a comparison:

- **Top down**. Using a top down approach high level structures are used as the basis for comparison. For example, networks, [Table]s, or components could be used as the basis for comparison.
- **Bottom up**. Using a bottom up approach, the characteristics or concepts contained within a component are used to define the structure being compared. Another term for this approach is prototype theory.

17.3. Top Down Comparison

The following model SEC XBRL financial filing is constructed to be very comparable from both the top down and bottom up approaches:

http://www.xbrlsite.com/US-GAAP/ReferenceImplementation/Comparison/Index.html

Notice how the networks and tables can be leveraged in order to compare information across the three digital documents.

SEC XBRL financial filings cannot be compared top down because every network is unique for each filer, components are not consistently identified, [Table]s are not guaranteed unique so they could mean different things, and there are no other such "handles" which can be used to grab the pieces one desires to compare.

17.4. Bottom Up Comparison: Fundamentals of Prototype Theory

> HINT: This information is inspired by the book *Everything is Miscellaneous: the power of the new digital disorder*, by David Weinberger, chapter 9, pages 173 to 198. That chapter has detailed explanations and reasoning which supports prototype theory.

Fundamentally there are two perspectives to understanding what something is:

- Aristotle's definition view perspective was that "A thing is a member of a category if it satisfies the definition of the thing."
- The second perspective, prototype theory, is that we can know what something means even if it can't be clearly defined and even if its boundaries cannot be sharply drawn; concepts can be clear without having clear definitions if they're organized around undisputed examples, or prototypes, as Eleanor Rosch the inventor of **prototype theory** calls them.

As an example, one can understand that something is a "chair" by understanding as many properties as possible about the thing you are looking at, looking at the properties of a chair as defined by a prototype (the undisputed example), and then predicting whether the thing you are looking at is a "chair" by comparing the properties you are looking at with the properties of a chair.

By contrast, the definitional view "draws sharp lines" whereas the prototype view works because "things can be sort of, kind of, in a category. Prototype theory relies on our implicit understanding and does not assume that we can even make that understanding explicitly.

17.4.1. Issues identifying components within SEC XBRL financial filings

SEC XBRL filings provide basically no top level foundation for comparability, no "handles" as they are sometimes referred to. Two candidates as a basis for comparison are networks and [Table]s.

However, each SEC XBRL filing defines its own networks and no two networks are the same per SEC XBRL filing rules. That rules out networks as a basis of comparison. Besides, networks are more presentation mechanisms within SEC XBRL filings, used to put pieces in order and get pieces to render in a specific section of the SEC interactive data viewer.

Within an SEC XBRL filer extension taxonomy, [Table]s could be used for expressing different sets of information. However these are ruled out because [Tables] are not guaranteed unique. For example the "Statement [Table]" is used on the balance sheet, income statement, statement of cash flows, and a number of other statements. Other [Table]s are used multiple times within the US GAAP taxonomy and define different sets of information. One could combine the network and the [Table] to create a unique handle, but then you run into the first problem, the networks cannot help you.

There are other problems with [Table]s. Many "tables" are implied (i.e. they don't physically exist as a [Table]. Another problem is that [Table]s are too big,

they contain too many components. There are others, but you can probably get the point already.

17.4.2. Other issues

Looking at this situation from the bottom up, there are approximately 15,000 concepts within the US GAAP taxonomy, too detailed a perspective for any useful comparison at the individual concept level. There is no middle "level" between the 15,000 concepts which is too granular and too large and the [Table]s which are too few, most time not identifiable as they are implicit and have no explicit handle to grab onto.

To exacerbate this situation, SEC filers can extend the US GAAP taxonomy adding additional networks, explicit [Table]s, implicit tables (i.e. everything within a network which is not within an explicit table is within an unnamed implicit table), [Axis], [Line Items] or concepts, and so forth.

When an SEC XBRL filer expresses their information, they create new networks which are comparable to no other network, they define [Table]s which could be used to express many different sets of information, tables could be defined implicitly or explicitly, and the [Axis] on each information set have no real pattern.

This problem seems unsolvable.

17.4.3. Looking deeper in to SEC XBRL financial filings

If you look deeper into financial filings you realize some things which are quite useful in grabbing handles to allow for meaningful comparisons of information. For example, consider this small fragment of the US GAAP Taxonomy which is used to disclose nonmonetary transactions. This is a the network 840000 – Disclosure – Nonmonetary Transactions which has been remolded:

Network: Nonmonetary Transactions (http://fasb.org/us-gaap/role/disclosure/NonmonetaryTrans

Line	Label	Object Class
1	**Nonmonetary Transactions**	[Network]
2	Nonmonetary Transactions [Abstract]	[Abstract]
3	**Nonmonetary Transaction, by Type [Table]**	[Table]
4	**Legal Entity [Axis]**	[Axis]
5	Consolidated Entity [Domain]	[Domain]
6	**Nonmonetary Transaction Type [Axis]**	[Axis]
7	Nonmonetary Transaction Type [Domain]	[Domain]
8	Receipt of Assets in Satisfaction of Debt [Member]	[Member]
9	Acquisition of Content Rights in Exchange for Future Services [Member]	[Member]
10	Contribution of Nonmo… …aritable Organization [Member]	…ember]
20	Inven…ory … …ember]	[Memb…
21	Goods and Services Exchanged for Equity Instrument [Member]	[Member]
22	**Nonmonetary Transaction [Line Items]**	[Line Items]
23	Details of Nonmonetary Transactions [Table Text Block]	[Concept] Text Block (HTML)
24	Nonmonetary Transaction [Hierarchy]	[Abstract]
25	Nonmonetary Transaction, Basis of Accounting for Assets Transferred	[Concept] Text/String
26	Nonmonetary Transaction, Name of Counterparty	[Concept] Text/String
27	Nonmonetary Transaction, Gain (Loss) Recognized on Transfer	[Concept] Monetary
28	Nonmonetary Transaction, Amount of Barter Transaction	[Concept] Monetary
29	Nonmonetary Transaction, Fair Value Not Determinable	[Concept] Text/String
30	Nonmonetary Transaction, Gross Operating Revenue Recognized	[Concept] Monetary

Look at the fragment above and consider the following:

- A filer could report their nonmonetary transaction information at two levels: block tagged or detailed tagged. If the information is block tagged, the concept on line 23 would be used, "Details of Nonmonetary Transactions [Table Text Block]. If the information were detailed tagged a filer would use come combination of concepts in the component "Nonmonetary Transaction [Hierarchy]. But either way, the information is

the same. The only difference is that one might be block tagged, the other would be detailed tagged.

- The concepts within the "Nonmonetary Transaction [Line Items] are used nowhere else in the US GAAP Taxonomy. As such, if one sees one or more of these concepts on a fact within an SEC XBRL filing; then one can assume with a high level of confidence that the component which contains one or more of those concepts is highly likely to be a nonmonetary transaction. As such, you really don't need the "Nonmonetary Transactions [Table]" explicitly identified.
- The [Axis] "Nonmonetary Transaction Type [Axis]" is used in only one place and for one thing in the US GAAP taxonomy. As such, that too could be used to identify the disclosure of nonmonetary transactions. Combining both the [Axis] and the concepts increases probability even more.
- Financial reporting rules and logic demand that certain concepts be present. For example, this component would make little sense without the "Nonmonetary Transaction, Amount of Barter Transaction". In financial reporting rules certain information is always required to be disclosed, certain information is required to be disclosed if a certain event or circumstance occurs during a financial period, certain information is common practice, and certain information is reported at the option of the filer. Some base set of information will always exist, it will always be logical based on financial reporting disclosure requirements and logic. For example, an SEC filer would be highly unlikely to report "Nonmonetary Transaction, Fair Value Not Determined" as the only concept within a nonmonetary transaction.
- If additional required disclosures which expand the base disclosure is presented, if common practice disclosures are provided, or additional optional information is disclosed; it will always exist with that base, supplementing that base disclosure.
- Additional information in the form of XBRL calculations or other business rules enhances the relationships between information within a set of reported information and providing additional clues.

The point of all this is to say that the pieces of a disclosure provide a highly reliable mechanism for discovering the component you are looking for, whatever someone may have called that component. The only thing which is necessary to use this approach is a prototype of what you call the component you desire to work with.

17.4.4. Prototypes for creation and analysis are the same

These prototypes are useful for not only analysis but also for creation of SEC XBRL filings. The prototypes serve as examples or templates or stencils; whatever term you might like to call them. These prototypes can be hard to see within the US GAAP Taxonomy because that taxonomy tends to be inconsistent, not uniform, and the appropriate component layer is not clearly identified. However, by reorganizing the US GAAP taxonomy it is much easier to see the components and the prototypes. This URL takes you too such a reorganized version:

http://www.xbrlsite.com/US-GAAP-2011/Exemplars/Viewer.html

Look at the networks and tables with which you may be more familiar. But the most interesting pieces is the "Component". This is an example:

Components (ordered by Component label)	
470000 Tree	Accelerated Share Repurchases [Hierarchy]
470000 Tree	Accelerated Share Repurchases [Table Text Block]
250000 Tree	Accounting Changes and Error Corrections [Hierarchy]
400000 Tree	Accounts Payable and Accrued Liabilities [Roll Up]
400000 Tree	Accounts Payable and Accrued Liabilities Disclosure [Text Block]
400000 Tree	Accounts Payable and Accrued Liabilities, Current [Roll Up]
400000 Tree	Accounts Payable and Accrued Liabilities, Current [Roll Up]
400000 Tree	Accounts Payable and Accrued Liabilities, Noncurrent [Roll Up]
400000 Tree	Accounts Payable, Accrued Liabilities, and Other Liabilities Disclosure, Current [Text Block]
400000 Tree	Accounts Payable, Accrued Liabilities, and Other Liabilities Disclosure, Noncurrent [Text Block]

While a flat, alphabetized list may be useful for some things, what is more interesting is that you can reorganize the components any way you choose rather than being locked into one view. For example:

- **TOPIC> Postretirement Pension Costs**
  - **Table>** Postemployment Benefits [Table]
    - [Hierarchy] > Postemployment Benefits [Hierarchy]
    - [Text Block] > Postemployment Benefits Disclosure [Text Block]
    - [Roll Up] > Supplemental Unemployment Benefits [Roll Up]
- **TOPIC> Other Expenses**
  - **Table>** Other Income and Expenses Disclosures [Table]
    - [Roll Up] > Interest and Other Income [Roll Up]
    - [Text Block] > Interest and Other Income [Table Text Block]
    - [Text Block] > Interest and Other Income [Text Block]
    - [Hierarchy] > Other Cost and Expense Disclosure, Operating [Hierarchy]
    - [Hierarchy] > Other Expense Disclosure, Nonoperating [Hierarchy]
    - [Roll Up] > Other Income [Roll Up]
    - [Text Block] > Other Income and Other Expense Disclosure [Text Block]
    - [Hierarchy] > Other Income Disclosure, Nonoperating [Hierarchy]
    - [Roll Up] > Other Nonoperating Income (Expense) [Roll Up]
    - [Text Block] > Schedule of Other Nonoperating Income (Expense) [Table Text Block]
  - **Table>** Component of Other Expense, Nonoperating [Table]
    - [Hierarchy] > Component of Other Expense, Nonoperating [Hierarchy]
    - [Text Block] > Schedule of Other Nonoperating Expense, by Component [Table Text Block]
  - **Table>** Component of Other Income, Nonoperating [Table]
    - [Hierarchy] > Component of Other Income, Nonoperating [Hierarchy]
    - [Text Block] > Schedule of Other Nonoperating Income, by Component [Table Text Block]
  - **Table>** Component of Other Operating Cost and Expense [Table]
    - [Hierarchy] > Component of Operating Other Cost and Expense [Hierarchy]
    - [Text Block] > Schedule of Other Operating Cost and Expense, by Component [Table Text Block]
- **TOPIC> Research and Development Costs**
  - **Table>** Research, Development, and Computer Software [Table]
    - [Roll Up] > Capitalized Computer Software, Net [Roll Up]
    - [Roll Forward] > Movement in Capitalized Computer Software, Net [Roll Forward]
    - [Roll Up] > Research and Development Expense [Roll Up]
    - [Hierarchy] > Research, Development, and Computer Software [Hierarchy]
    - [Text Block] > Research, Development, and Computer Software Disclosure [Text Block]

For the section of the US GAAP Taxonomy which was remodeled, 1104 components were identified. This is the true level at which users interact with the taxonomy to create SEC XBRL financial filings. The network and table level is too

high level, but helpful in getting close to what you are looking for and the concepts themselves of which there are about 15,000 is too many to work with.

17.4.5. Exemplar theory and prototype theory

Prototype theory is one way of identifying something by its components. Another approach is exemplar theory. With prototype theory you generally have one prototype. With exemplar theory you can have multiple prototypes for the same thing.

It is not the case that there is only one "undisputed example", nor does their need to be. For example, there are many different types of balance sheets: classified, unclassified, deposit based operations, insurance based operations, securities based operations, and others for specific industries and financial reporting needs. However, it is not the case that there are an infinite number of balance sheets. Financial information is not random or infinite in nature.

Specific undisputed examples can be created and even cross referenced with additional information. Another way of saying this is that there is no need to have only one undisputed example for any piece of a financial report. Further, this idea applies to each piece of a financial report and to the full set of pieces which an SEC XBRL filer might create.

It can be hard to understand how to model your SEC XBRL financial filing extension taxonomy by using the US GAAP Taxonomy. Having multiple specific examples can be better. For example, consider this sample of exemplars:

http://www.xbrlsite.com/US-GAAP-2011/Exemplars/Viewer3.html

This shows models for:

- A balance sheet with and without a noncontrolling interest.
- An income statement with each of the "steps" you might have including: income from equity method investments, income from discontinued operations, income from noncontrolling interest, extraordinary items, and preferred dividends or other adjustments
- A cash flow statement with or without discontinued options and different approaches for disclosing discontinued options.

Cognitive psychologists have begun to explore the idea that the prototype and exemplar models form two extremes.

17.4.6. For more information

The following are resources for more information:

- http://en.wikipedia.org/wiki/Prototype_theory
- http://courses.umass.edu/psy315/prototype.html
- http://en.wikipedia.org/wiki/Concept_learning

18. Remodelled US GAAP Taxonomy and Exemplars

This section explains a partially remodelled US GAAP Taxonomy which helps to see the logical model articulated by this document. In addition the notion of an exemplar or prototype or "undisputed example" is explained in this section.

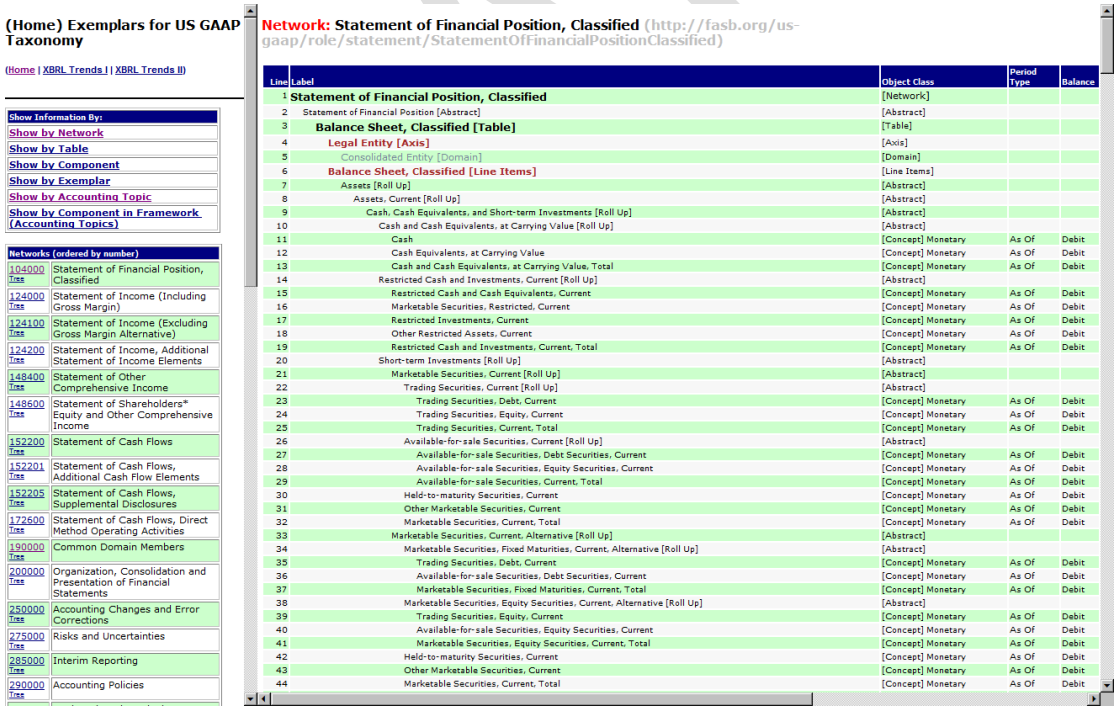
[CSH: Note that there are some differences between this reference model and the metapatterns, business use cases, and comprehensive example. The biggest difference is the use of [Domain] in this model, similar to the US GAAP Taxonomy and SEC XBRL financial filings. This approach will be phased out of the US GAAP Taxonomy, per our understanding.]

18.1. Remodeled US GAAP Taxonomy to Conform to Logical Model

It is hard to see the logical model by looking at the version of the US GAAP Taxonomy (2011) released by the FASB. But, if you reorganize the US GAAP Taxonomy, these models are quite easy to see. This is exactly what was done for a section of the US GAAP Taxonomy which can be found here:

http://www.xbrlsite.com/US-GAAP-2011/Exemplars/Viewer.html

This is a screen shot of what you will find at this location:



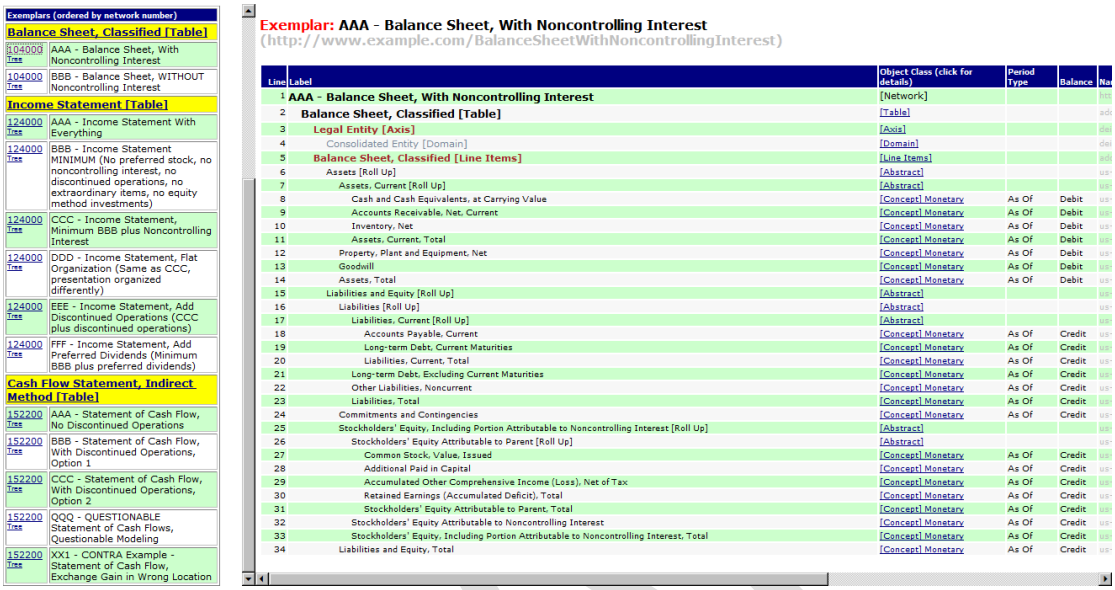
On the left you can see a list of approximately 57 US GAAP Taxonomy networks which have been reorganized along the lines of the logical model articulated in this document. No meaning has been changed from the modelling of the FASB version of the US GAAP Taxonomy, only reorganized and made more consistent.

18.2. Exemplars, or Prototypes; "Undisputed Examples"

Included with the remodelled US GAAP Taxonomy are a set of exemplars prototypes or "undisputed examples" which both point out ambiguities in the US GAAP Taxonomy and how to overcome the ambiguities. You can see these exemplars here:

http://www.xbrlsite.com/US-GAAP-2011/Exemplars/Viewer3.html

This is a screen shot of what you will find:



Exemplars (ordered by network number)	
Balance Sheet, Classified [Table]	
104000 Tree	AAA - Balance Sheet, With Noncontrolling Interest
104000 Tree	BBB - Balance Sheet, WITHOUT Noncontrolling Interest
Income Statement [Table]	
124000 Tree	AAA - Income Statement With Everything
124000 Tree	BBB - Income Statement MINIMUM (No preferred stock, no noncontrolling interest, no discontinued operations, no extraordinary items, no equity method investments)
124000 Tree	CCC - Income Statement, Minimum BBB plus Noncontrolling Interest
124000 Tree	DDD - Income Statement, Flat Organization (Same as CCC, presentation organized differently)
124000 Tree	EEE - Income Statement, Add Discontinued Operations (CCC plus discontinued operations)
124000 Tree	FFF - Income Statement, Add Preferred Dividends (Minimum BBB plus preferred dividends)
Cash Flow Statement, Indirect Method [Table]	
152200 Tree	AAA - Statement of Cash Flow, No Discontinued Operations
152200 Tree	BBB - Statement of Cash Flow, With Discontinued Operations, Option 1
152200 Tree	CCC - Statement of Cash Flow, With Discontinued Operations, Option 2
152200 Tree	QQQ - QUESTIONABLE Statement of Cash Flows, Questionable Modeling
152200 Tree	XX1 - CONTRA Example - Statement of Cash Flow, Exchange Gain in Wrong Location

Exemplar: AAA - Balance Sheet, With Noncontrolling Interest
(http://www.example.com/BalanceSheetWithNoncontrollingInterest)

Line	Label	Object Class (click for details)	Period Type	Balance
1	**AAA - Balance Sheet, With Noncontrolling Interest**	[Network]		
2	**Balance Sheet, Classified [Table]**	[Table]		
3	**Legal Entity [Axis]**	[Axis]		
4	Consolidated Entity [Domain]	[Domain]		
5	**Balance Sheet, Classified [Line Items]**	[Line Items]		
6	Assets [Roll Up]	[Abstract]		
7	Assets, Current [Roll Up]	[Abstract]		
8	Cash and Cash Equivalents, at Carrying Value	[Concept] Monetary	As Of	Debit
9	Accounts Receivable, Net, Current	[Concept] Monetary	As Of	Debit
10	Inventory, Net	[Concept] Monetary	As Of	Debit
11	Assets, Current, Total	[Concept] Monetary	As Of	Debit
12	Property, Plant and Equipment, Net	[Concept] Monetary	As Of	Debit
13	Goodwill	[Concept] Monetary	As Of	Debit
14	Assets, Total	[Concept] Monetary	As Of	Debit
15	Liabilities and Equity [Roll Up]	[Abstract]		
16	Liabilities [Roll Up]	[Abstract]		
17	Liabilities, Current [Roll Up]	[Abstract]		
18	Accounts Payable, Current	[Concept] Monetary	As Of	Credit
19	Long-term Debt, Current Maturities	[Concept] Monetary	As Of	Credit
20	Liabilities, Current, Total	[Concept] Monetary	As Of	Credit
21	Long-term Debt, Excluding Current Maturities	[Concept] Monetary	As Of	Credit
22	Other Liabilities, Noncurrent	[Concept] Monetary	As Of	Credit
23	Liabilities, Total	[Concept] Monetary	As Of	Credit
24	Commitments and Contingencies	[Concept] Monetary	As Of	Credit
25	Stockholders' Equity, Including Portion Attributable to Noncontrolling Interest [Roll Up]	[Abstract]		
26	Stockholders' Equity Attributable to Parent [Roll Up]	[Abstract]		
27	Common Stock, Value, Issued	[Concept] Monetary	As Of	Credit
28	Additional Paid in Capital	[Concept] Monetary	As Of	Credit
29	Accumulated Other Comprehensive Income (Loss), Net of Tax	[Concept] Monetary	As Of	Credit
30	Retained Earnings (Accumulated Deficit), Total	[Concept] Monetary	As Of	Credit
31	Stockholders' Equity Attributable to Parent, Total	[Concept] Monetary	As Of	Credit
32	Stockholders' Equity Attributable to Noncontrolling Interest	[Concept] Monetary	As Of	Credit
33	Stockholders' Equity, Including Portion Attributable to Noncontrolling Interest, Total	[Concept] Monetary	As Of	Credit
34	Liabilities and Equity, Total	[Concept] Monetary	As Of	Credit

Of course you are asking, "What the heck is an exemplar?" An exemplar is a $50 word for example. When I was trying to figure out the right word to use, I considered these three terms:

- **Exemplar**: A model or pattern to be copied or imitated. A typical example or instance. An original or archetype.
- **Archetype**: The original pattern or model from which all things of the same kind are copied or on which they are based; a model or first form; prototype.
- **Prototype**: The original or model on which something is based or formed. Someone or something that serves to illustrate the typical qualities of a class; model; exemplar.

The three definitions seem a bit circular, each one referencing the other. Reading all three gives you a really good idea of what an exemplar is and why these might be quite useful for the creation of SEC XBRL financial filings. Think of an exemplar as an "undisputed example".

Reading the US GAAP Taxonomy itself will not help you create a proper SEC XBRL filing. The taxonomy takes exactly the opposite approach of what is needed in my view. It packs every option into one model and you have to figure out which one to use from that.

Looking at other SEC XBRL financial filings can be helpful, but today it is hard to differentiate a good filing from a not-so-good filing. Eventually I see actual filing serving as models. This is just like Accounting Trends and Techniques is used today.

These examples of exemplars will help give you an understanding of what they are and how they can be used.

18.2.1. Balance sheet exemplars

Look at the US GAAP Taxonomy and figure out how to model a balance sheet for an entity which does not have a noncontrolling interest. If the entity does have a noncontrolling interest it is easy to understand how to model the entity. But if it does not, there are two options as to which concept should be used to express total equity. These two balance sheet exemplars help make this point.

- **104000 Tree AAA** - Balance Sheet, With Noncontrolling Interest
- **104000 Tree BBB** - Balance Sheet, WITHOUT Noncontrolling Interest

In the appendix is an analysis of 1474 SEC XBRL financial filings and the two different approaches being used by filers can be clearly seen.

18.2.2. Income statement exemplars

The set of exemplars for the income statement make the issues of determining which concepts to choose if a reporting entity does not have all the different steps which are included in the US GAAP Taxonomy.

- **124000 Tree AAA** - Income Statement With Everything
- **124000 Tree BBB** - Income Statement MINIMUM (No preferred stock, no noncontrolling interest, no discontinued operations, no extraordinary items, no equity method investments)
- **124000 Tree CCC** - Income Statement, Minimum BBB plus Noncontrolling Interest
- **124000 Tree DDD** - Income Statement, Flat Organization (Same as CCC, presentation organized differently)
- **124000 Tree EEE** - Income Statement, Add Discontinued Operations (CCC plus discontinued operations)
- **124000 Tree FFF** - Income Statement, Add Preferred Dividends (Minimum BBB plus preferred dividends)

Again the appendix is an analysis of 1474 SEC XBRL financial filings shows how different filers are making different choices in seemingly areas where how information should be modelled.

18.2.3. Cash flow statement exemplars

The cash flow statement examples helps understand how cash flows from continuing and discontinued operations should be modelled. There are also a number of other examples.

- **152200 Tree AAA** - Statement of Cash Flow, No Discontinued Operations
- **152200 Tree BBB** - Statement of Cash Flow, With Discontinued Operations, Option 1
- **152200 Tree CCC** - Statement of Cash Flow, With Discontinued Operations, Option 2
- **152200 Tree QQQ** - QUESTIONABLE Statement of Cash Flows, Questionable Modelling
- **152200 Tree XX1** - CONTRA Example - Statement of Cash Flow, Exchange Gain in Wrong Location

Once again, the appendix contains an analysis of 1474 filings which shows both the consistencies in real world filings and the inconsistencies.

19. APPENDIX: Analysis of 1474 SEC XBRL Filings

An analysis of 1474 SEC XBRL financial filings between 2010-07-28 and 2011-02-28 was undertaken to examine how filers were using the US GAAP Taxonomy in order to make recommendations on how to use and improve the taxonomy. Information about this analysis can be found here:

http://www.xbrlsite.com/2011/Analysis/

The list of filings analyzed was obtained from reading the XBRL Cloud Edgar Dashboard as of approximately February 28, 2011. The list of filers represents approximately one quarter worth of SEC XBRL filings.

For the analysis, I looked for a number of financial concepts which I would have expected to find to see if they did or did not exist.

My conclusion is that at this core level, there is a very high probability that the expected concepts were found as anticipated.

19.1. Assets

Of the 1474 filings, 1472 (99 plus percent) used the concept "us-gaap:Assets" to express total assets on the balance sheet. Of the two filings which did not, one reported "us-gaap:AssetsNet" (used a net assets approach on balance sheet) and the other was a trust.

19.2. Liabilities and Equity

Of the 1474 filings, 1470 (99 plus percent) used the concept "us-gaap:LiabilitiesAndStockholdersEquity" (1) or "us-gaap: LiabilitiesAndPartnersCapital" (2) to express total liabilities and equity on the balance sheet. Of the four filings which did not, one used the concept "us-gaap:Assets" and the concept "us-gaap:Liabilities", but created its own concept for total liabilities and equity which is rather odd. The other three were trusts.

19.3. Equity

Of the 1474 filings, 834 (57 percent) used the concept "us-gaap:StockholdersEquityIncludingPortionAttributableToNoncontrollingInterest" (1); 606 (41 percent) used the concept "us-gaap:StockholdersEquity" (2); 24 (2 percent) used the concept "us-gaap:PartnersCapital" (3); for a total of 1464 (99 percent) to express total equity on the balance sheet. Of the ten other filings which did not, 4 appear to be regulated energy companies created a concept similar to "Common Stockholders' Equity"; one was a partnership and created a concept "Total Members' Equity" and 4 were trusts.

19.4. Income from Continuing Operations before Tax

Of the 1474 filings, 1070 (73 percent) used the concept "us-gaap:IncomeLossFromContinuingOperationsBeforeIncomeTaxesMinorityInterestAndIncomeLossFromEquityMethodInvestments" (1); The remaining 404 did a number of different things, the number is too high to analyze at this point. Of those 404, 98 had "Gross Profit" on their income statement. I have seen at least 10 filings which created a their own concept and called it something similar to "Income from continuing operations before tax" or something to that affect.

19.5. Net Income (Loss)

Of the 1474 filings, 1247 (85%) used the concept "us-gaap:ProfitLoss" and their label "Net Income (Loss)" (the US GAAP Taxonomy concept with the standard label "Net Income (Loss), Including Portion Attributable to Noncontrolling Interest" to express what amounted to "Net Income (Loss)". There were two common mistakes. The first common mistakes were to use "Net Income (Loss) Attributable to Parent" (the concept us-gaap:NetIncomeLoss) if they did not have a noncontrolling interest. The second common mistake was to use ""Net Income (Loss) Attributable to Common Stockholders" (the concept us-gaap: NetIncomeLossAvailableToCommonStockholdersBasic) which is a subtotal which should only be used should preferred dividends of other adjustments are reported.

19.6. Revenue

Of 1474 filings, 1383 (94 percent) used one of the following 8 concepts to express revenues:

- us-gaap:Revenues
- us-gaap:SalesRevenueNet
- us-gaap:SalesRevenueServicesNet
- us-gaap:SalesRevenueGoodsNet
- us-gaap:InterestAndDividendIncomeOperating
- us-gaap:HealthCareOrganizationRevenue
- us-gaap:RealEstateRevenueNet
- us-gaap:RegulatedAndUnregulatedOperatingRevenue

The remaining 91 filings (6 percent) used a wide variety of more detailed concepts to express revenues such as:

- us-gaap:RevenueOilAndGasServices
- us-gaap:ContractsRevenue
- us-gaap:AdvertisingRevenue
- us-gaap:ElectricUtilityRevenue

This appears to be two different strategies for expressing revenues.

19.7. Cost of Goods Sold

Of 1474 fiings, 972 (66 percent) used one of the following concepts to express cost of goods sold:

- us-gaap:CostOfGoodsSold
- us-gaap:CostOfGoodsAndServicesSold
- us-gaap:CostOfServices
- us-gaap:CostsAndExpenses

19.8. Gross Profit

Of 1474 filings, 544 (37 percent) used us-gaap:GrossProfit. This seems to indicate that approximately one-third of filers use a multi-step income statement format and two-thirds use a single step format.

19.9. Operating Income (Loss)

Of 1474 filings, 1120 (76 percent) used us-gaap:OperatingIncomeLoss.

19.10. Net Changes in Cash

Of the 1474 filings, 1464 (99 plus percent) used the concept "us-gaap:CashAndCashEquivalentsPeriodIncreaseDecrease" to express the net changes in cash. Of the 10 which did not, one was a trust and a disproportionate number were insurance companies most of which created their own concept. One insurance company did not show net changes in cash on the cash flow statement. Two companies reported discontinued operations.

19.11. Cash and Cash Equivalents

Of 1474 filings, 1421 (96 percent) used us-gaap: CashAndCashEquivalentsAtCarryingValue to express "Cash and Cash Equivalents" on their balance sheet and cash flow statement. Of the other 53 filers, 52 of them used one of the following concepts:

- us-gaap:CashCashEquivalentsAndFederalFundsSold
- us-gaap:CashCashEquivalentsAndShortTermInvestments
- us-gaap:CashAndDueFromBanks
- us-gaap:Cash
- us-gaap:FederalFundsSoldAndSecuritiesPurchasedUnderAgreementsToResell

Interestingly, only two filer created an extension concept for cash. One filer, while they labelled their concept "Cash and Cash Equivalents", the name was aro:CashAndCashEquivalentsIncludingCreditCardReceivables. (see http://www.sec.gov/Archives/edgar/data/1168213/000116821310000075)

The other filer labeled their concept "Cash" and named it "dfg:RestrictedAndUnrestrictedCash" (see http://www.sec.gov/Archives/edgar/data/859139/000095012310103206) with the documentation "Restricted and Unrestricted cash available for day-to-day operating needs."

In 100% of all cases, the cash concept used on the balance sheet and the cash concept used on the cash flow statement appear to be the same concept which is what I would have expected.

21. APPENDIX: Report Element Properties

This section provides the properties of report elements. See the section on the logical model report elements for a summary overview.

21.1. Network

A **network** is a one approach to break an SEC XBRL 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.

Property	Meaning/Definition	Example
Identifier	Uniquely identifies the Network. Used mainly by software applications.	http://xasb.org/roles/BalanceSheet
Number	Provides a way to order the network	100000
Category	A network must be either: document, statement, disclosure	Statement
Label	Human readable label for Network	"Balance Sheet"
Table (Collection)	A Network has a collection of Tables. Tables may be explicitly defined or implicitly defined.	All the Facts which are used by the "Balance Sheet" network.

21.2. 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.

> HINT: Because of the way SEC XBRL works in that tables do not have to be unique within an extension taxonomy, the table plus the network must be used to uniquely identify a table. This is because a table of the same name such as "Statement [Table]" can be used for multiple information sets (such as the balance sheet, income statement, and cash flow statement) and therefore the combination network and table is needed to uniquely identify a specific table. One way to get around this is to implement tables uniquely within a taxonomy. This model suggests that all tables be unique within a taxonomy.

Property	Meaning/Definition	Example
Identifier	Uniquely identifies the Table. Used mainly by software applications.	Unique identifier is the name such as "us-gaap:BalanceSheetTable". Would distinguish from other Tables such as the "Income Statement [Table]", "Maturities of Long term Debt [Table]", "Related Party Transactions [Table]"
Label	Human readable label for Table	"Balance Sheet [Table]"
Documentation	Explanation of the table	Reports the collection of concepts which make up the balance sheet of the reporting entity.
Axis (Collection)	Collection of one to many axis which make up a table. NOTE: A table always has an entity axis. NOTE: A table always has a period axis.	Set of: Period, Entity, Legal Entity [Axis]

Property	Meaning/Definition	Example
Line Items (Collection)	A table has a collection of line items. Line items are comprised of one or more concepts.	Cash and Cash Equivalents, Receivables, Inventory, Prepaid Expenses (i.e. all concepts)

21.3. Axis

An **axis** is a means of providing information about the characteristics of the concepts for the line items within a table regardless of whether that table is explicitly or implicitly defined.

Term	Meaning/Definition	Example
Identifier	Uniquely identifies the Axis. Used mainly by software applications.	us-gaap:LegalEntityAxis
Label	Human readable label for axis	"Legal Entity [Axis]"
Documentation	Explanation of the axis	Used to indicate which legal entity the fact relates.
Domain (relation to)	Has exactly one domain.	"Geographic Area, All Areas [Domain]"
Member (collection), optional	A possible (i.e. allowed) value for a Measure property.	Europe Geographic Area, Asia Geographic Area, Pharmaceuticals Business Segment;
Business rules (collection)	Zero to many business rules which articulate the aggregation model of the axis.	The value of each geographic area [Member] equals the value of the geographic areas [Domain].

21.4. Domain

A **domain** is a set of members. Domains have partitions. A partition is collectively exhaustive and mutually exclusive set of members within a domain. Partitions do not overlap. Give a set X, a partition is a division of X into non-overlapping and non-empty "parts" or "blocks" or "cells" that cover all of X. More formally, these "cells" are both collectively exhaustive and mutually exclusive with respect to the set being partitioned. Domains always has at least one partition and may have many partitions.

Term	Meaning/Definition	Example
Member (collection)	A collection of possible members	Europe Geographic Area, Asia Geographic Area, Pharmaceuticals Business Segment;

21.5. 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 member expresses the value of the axis or characteristic being described. For example, the "Consolidated Entity [Member]" might be the value of the characteristic "Legal Entity [Axis]".

Term	Meaning/Definition	Example
Identifier	Uniquely identifies the Domain. Used mainly by software applications.	dei:ParentCompanyMember
Label	Human readable label for Member	Parent Company [Member]
Documentation	Explanation of the member	Used to indicate that the fact relates to the parent company of the reporting entity.

21.6. Domain Partition Aggregation Models

The **members** of a **domain** have relations to one another. These relations are referred to as **domain partition aggregation models**. There are two dynamics which impact domain aggregation. The first is whether you have a **partial set** or a **complete set** represented by the domain members. The second dynamic is whether the set aggregates or adds up. Axis which express partial sets and describe the characteristics of non-numeric concepts cannot aggregate.

Term	Meaning/Definition	Example
Partial set (or no aggregation)	A partial set is a set which is incomplete so it can never aggregate or a set which describes non-numeric concepts which could never aggregate. A set of numeric concepts which could be aggregated but the aggregated value is illogical or never used is considered a partial set.	A partial set of the classes of cash, a set which describes the accounting policies such as the depreciation method of useful lives of each class. Subsequent events (which are never aggregated) are a partial set. The aggregate value of the useful lives of PPE (a numeric value) is a partial set as the value is illogical.
Complete flat set	A complete flat set is a set which is both complete and characterizes a numeric concept which can be aggregated. A complete flat set is similar to a [Roll Up] information model. The aggregation scheme is that the members of the list aggregate to the parent of those members.	A value of all classes of property, plant and equipment and the value of each class of property, plant and equipment is a complete flat set.
Complete hierarchical set	A complete hierarchical set is a set comprised of a collection of complete flat sets. A business rule will always describe the aggregation scheme.	A breakdown of revenues by geographic area whereby the domain of geographic areas has a hierarchy of geographic regions such as "North America" which makes up one hierarchy and countries such as "United States" and "Canada" which comprise a second hierarchy nested within the first hierarchy.
Complex set	A complex set is a set which has some other set of complex relations expressed within a business rule.	Some complex disclosure.

21.7. Line Items

Line items are a set of concepts which can be reported by an entity, they can contain values.

Line items is what amounts to a special type of axis or characteristic. Because the concepts within a set of line items can report fact values, they have data types such as string, monetary, etc. They may also have a balance type (debit or credit), a period type (as of a point in time, for some period, etc), and a few other attributes.

Term	Meaning/Definition	Example
Identifier	Uniquely identifies the Line Items. Used mainly by software applications.	us-gaap:BalanceSheetLineItems
Label	Human readable label for Table	"Balance Sheet [Line Items]"
Documentation	Explanation of the line items	Contains all the line items of the balance sheet.
Component (Collection)	Has a collection of one or more components.	

21.8. Component

A **component** is a sub set of line items which have the same information model and go together for some specific purpose. A component is an abstract report element in that it is more of an idea for convenience than a necessary report element.

For example, the balance sheet has two components: "Assets [Roll Up]" and "Liabilities and Equity [Roll Up]".

Term	Meaning/Definition	Example
Identifier	Uniquely identifies the Line Items. Used mainly by software applications.	us-gaap:AssetsAbstract
Label	Human readable label for Table	"Assets [Roll Up]"
Documentation	Explanation of the line items	The set of all assets of a company.
Concepts (Collection)	Has a collection of one or more components.	

21.9. Information Model

An **information model** describes the organization or relation between concepts within a component.

Concepts are not interspersed randomly within a table; they have patterns. Said another way, concepts are organized into different information models. A component is a set of concepts which have the same information model pattern or metapattern which are organized and used together for some specific purpose.

Term	Meaning/Definition	Example
[Hierarchy]	A hierarchy information model denotes a hierarchy of concepts with no numeric relations. If no numeric relations exist, then the information model of the component is a hierarchy. Basically, anything can be modeled as a hierarchy. It is the addition of additional relations, typically computations, which turns a hierarchy into some other metapattern.	Accounting policies; Miscellaneous numbers which have no computation relation to other numbers
[Roll Up]	A roll up information model computes a total from a set of other concepts. This information model is commonly referred to a "roll up", or the equation A + B = C. All concepts involved in this information model have the same set of characteristics and all must be numeric.	Calculations of a balance sheet (all concepts); breakdown of assets by business segment.
[Roll Forward]	A roll forward information model reconciles the balance of a concept between two points in time. This information model is commonly referred to a "roll forward" or "movement analysis" or the equation: beginning balance + changes = ending balance. In this equation period [Axis] is as of two different points in time and the changes occur during the period between those two points in time.	Movements in property, plant, and equipment; Cash flow statement; Reconciliation of the change in the number of employees.

Term	Meaning/Definition	Example
[Compound Fact]	A compound fact information model is characterized by the fact that some set of other concepts or some other information model exists for a set of characteristics expressed by one or more [Axis]. For example, the salary information for the directors of an entity is a compound fact. The salary information is made up of salary, bonuses, director fees which roll up into total salary and this set of compound facts can be expressed for any number of directors, the director being the characteristic or axis of the compound fact.	For example, the salary information for the directors of an entity is a compound fact. The salary information may be made up of salary, bonuses, and director fees which roll up into total salary. This set of compound facts can be expressed for any number of directors; the director being the characteristic or axis of the compound fact.
[Adjustment]	An adjustment information model reconciles an originally stated balance to a restated balance, the adjustment being the total change, between two different report dates. An adjustment is similar to a roll forward in that it is a reconciliation, however rather than the period [Axis] changing; it is the Report Date [Axis] which changes: originally reported balance + adjustment = restated balance.	Restatements: Originally stated balance + adjustments = Restated balance.
[Variance]	A variance information model reconciles some reporting scenario with another reporting scenario, the variance between reporting scenarios being the variance or changes. For example, a sales analysis which reconciles the concept sales for the reporting scenarios of actual and budgeted is a variance. The equation is: actual – budget = variance.	For example, a sales analysis which reconciles the concept sales for the reporting scenarios of actual and budgeted is a variance. The equation is: actual - budget = variance.
[Complex Computation]	A complex computation information model can be thought of as a hierarchy plus a set of commutations between different concepts within that hierarchy which are challenging to model as the parent/child relations of a graph. The type of computations can vary significantly, thus the challenging in modeling. For example, the computation of earnings per share is a complex computation.	Earnings per share (Net income / shares outstanding) because it is a division
[Text Block]	A text block information model is an information model which contains, by definition, only one concept and that concept expresses what amounts to a narrative or prose as escaped HTML within that one concept. For example, the narrative associated with a set of accounting policies expressed as a list or a table presentation format is a text block. As there is only one concept, there can be no relations within the information model.	An accounting policy, a complex disclosure, an HTML table of information which is disclosed but not "detailed tagged."

Term	Meaning/Definition	Example
[Grid]	A grid information model is a pseudo metapattern which uses the presentation characteristics of the columns and rows of a table to model information. Because the grid models presentation information and not business semantics, it cannot be considered a metapattern. However, the grid is included in this list because the US GAAP Taxonomy uses a grid information model to model the statement of changes in equity.	Statement of changes in equity within the US GAAP taxonomy
Other information models	Some other information model	(Have no examples, from what I can see all information models fit into one of the above)

Additional information model metapatterns could be added if the needs is determined to exist.

21.10. Concepts (concrete)

A **concept** refers to a financial reporting concept or a non-financial concept which can be reported as a fact within an SEC XBRL financial filing. A concept is sometimes referred to as a concrete concept, as compared to an abstract concept.

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).

Term	Meaning/Definition	Example
Identifier	A unique identifier of a concept, it's name. (i.e. not the id attribute)	us-gaap:CashAndCashEquivalents
Standard Label	The standard label of a concept. (Note that concepts MAY also have other labels, but they MUST have one standard label. The "labels collection" is different than the standard label. But, this is part of the labels collection from a syntax perspective.)	Cash and Cash Equivalents
Data type	The data type of a concept which the value must take.	String, monetary, decimals, Boolean, etc.
Period type	The period type of a concept allowed such as as of a point in time, for a period of time, or forever.	Instant, duration, forever
Balance type	The balance type of a concept such as debit or credit. Applies only to certain monetary concepts.	Debit, credit
Documentation	The documentation or definition of the meaning of the concept.	Cash includes ....
References	References to one or more external sources of documentation or definitions. This is a collection.	References to the authoritative financial reporting standards.

HINT: the Period type of instant is equivalent to what an accountant refers to as "As of" a point in time. The duration is equivalent to "For Period Ended".

Note that it is the US GAAP taxonomy standard label which should be the primary interface into a concept, not the name of the concept. So, rather than a user seeing "us-gaap:CashAndCashEquivalents" they would see "us-gaap:Cash and Cash Equivalents". Names are meaningless tokens whose only use is to serve as a unique identifier to the actual concept.

21.11. Concepts (abstract)

Concepts are may only be used within line items and may never be reported have the following properties.

Term	Meaning/Definition	Example
Identifier	A unique identifier of a concept, it's name. (i.e. not the id attribute)	us-gaap:BalanceSheetAbstract
Label	The standard label of a concept. (Note that concepts MAY also have other labels, but they MUST have one standard label. The "labels collection" is different than the standard label. But, this is part of the labels collection from a syntax perspective.)	Balance Sheet [Abstract]
Documentation	The documentation or definition of the meaning of the concept.	Balance sheet includes ....
Reference (collection)	References to one or more external sources of documentation or definitions. This is a collection.	References to the authoritative financial reporting standards.

21.12. Business rules

A **business rule** is a relation between concepts. Business rules can be used to validate the values of facts contained within a report.

Taking the notion that concepts are not randomly placed within a set of line items further than just the information model; certain information models have financial integrity. A balance sheet always has "Assets" and "Liabilities and Equity". A balance sheet always balances. The line items of Assets will always foot. The line items of "Liabilities and Equity" will always foot. These characteristics, or the balance sheets financial integrity, are expressed using business rules.

Term	Meaning/Definition	Example
Identifier	A unique identifier of a concept, it's name. (i.e. not the id attribute)	Assertion_RollForward_CashFlows_Reconciles
Label	The standard label of a concept. (Note that concepts MAY also have other labels, but they MUST have one standard label. The "labels collection" is different than the standard label. But, this is part of the labels collection from a syntax perspective.)	Roll forward: the concept us-gaap:CashAndCashEquivalents for the beginning of the period plus us-gaap:CashNetChange reconciles to the balance of cash at the end of the period.
Network	The network which the business rule is associated.	http://www.Company.com/CashFlowStatement
Rule	Variable_Cash(beginning) + Variable_ChangeInCash = Variable_Cash (ending)	The actual business rule.

21.13. Labels

Additional labels (i.e. beyond the standard label) for a concept, axis, table, domain, member, line items, other than the standard label which is required and a property of the element.

Term	Meaning/Definition	Example
Identifier	Uniquely identifies the label.	us-gaap_CashAndCashEquivalents
Label	The standard label of a concept. (Note that concepts MAY also have other labels, but they MUST have one standard label. The "label collection" is different than the standard label.) (This is a collection)	Cash and Cash Equivalents, Beginning Balance
Language	Language of the label	en-US
Label Role	What the label is used for, for example: standard label, beginning period label, ending period label, terse label, negated label, etc.	http://www.xbrl.org/2003/role/period-start

HINT: Labels can have different roles. Common roles are the standard role, beginning period labels, ending period labels, terse labels, negated labels.

21.14. References

A concept, table, domain, member, line items may be described by a collection of references. US GAAP taxonomy concepts have references. Extension concepts will not have references.

Term	Meaning/Definition	Example
Identifier	Uniquely identifies the reference.	us-gaap_CashAndCashEquivalents
Reference Role	What the reference is used for, for example: comment, general information, measurement, etc	
Reference part (collection)	Collection of reference parts	Chapter, page, section, line, etc.

21.15. Fact

A **fact** is a single, observable, reported piece of information which could be numeric, non-numeric (i.e. strings), or narrative (i.e. Text Block).

A fact is a single observable, reported piece of information (numeric, string, narrative) that is described by the axis collection, fact value, fact attribute collection. A fact must exist within a table. A fact can be used on one or more table within a business report. A fact MUST exist in at least one table, they do not exist "on their on", independently of a table.

Term	Meaning/Definition	Example
Fact	Fact value is an abstract notion which is broken into two possible concrete possibilities: numeric value or non-numeric value.	11,000 rounded to the nearest thousands, expressed in US Dollars
ID	Optional. Uniquely identifies the fact. (Required if footnotes are used because they connect the footnote to the fact.)	ID-0001
Concept	A fact is associated with a concept	us-gaap:CashAndCashEquivalents
Axis (collection)	A notion that represents the collection of information properties which describe the meaning and context of a fact. The axis collection identifies the fact.	Cash and Cash Equivalents on December 31, 2010, Audited, for ACME Company, Actual, etc.
Fact attributes (collection)	Collection of fact attributes which further describe numeric facts and are not involved with dimensional processing	rounded to the nearest thousands

Term	Meaning/Definition	Example
Fact value	Fact value is an abstract notion which is broken into two possible concrete possibilities: numeric value or non-numeric value.	11,000; Or the text "FIFO".
Table (collection)	A fact exists within a table. A fact is associated with one or more tables. A Table is a set of facts which have the same collection of axis properties and fact value properties and is used together for some purpose.	

21.16. Fact attributes

Fact attributes is the notion that a value may have one or more pieces of information associated with it which should not (does not) impact or not be impacted by dimensional processing.

Term	Meaning/Definition	Example
Textual (for non-numeric facts)	The value of a non-numeric fact. Could be text, narrative, prose, textual information which would be converted into an image (base 64), or other legal XBRL type. A notion that groups the properties of a value (of a fact), that apply to non numeric values.	"FIFO", a line of text, several paragraphs of text or escaped XHTML which populates a text box.
Amount (for numeric facts)	The value of a numeric fact. A notion that groups the properties of a value (of a fact), that apply to numeric values only	100,000
Rounding (for numeric facts)	The rounding of a numeric fact. Applies only to facts with concepts which are numeric.	Rounded to thousands, millions, billions; rounded to hundredths
Unit (for numeric facts)	The unit of a numeric fact. Applies only to facts with concepts which are numeric.	The currency of a monetary value, "shares" for a decimal value.
Footnotes (collection)	Zero or more footnotes which can be associated with a fact to further describe the fact.	

21.17. Integrity Models

Integrity models express the semantic relations between the components of one [Table] and the components of another [Table]. [Table]s within an information set, be that information set within one business report or across many business reports you are comparing have relations.

Term	Meaning/Definition	Example
[Table]s which are unrelated	A [Table] has no relation to any other [Table].	Subsequent events and nonmonetary transactions tables do not relate to other tables
[Table]s related by [Line Items]	A [Table] shares one or more [Line Items] concept with another [Table].	A breakdown of the classes of inventory which ties to the balance sheet.
[Table]s related by [Axis]	A [Table] shares one or more [Axis] with another [Table].	Accounting policies and property, plant and equipment components breakdown which both share the class of property, plant, and equipment axis.

Term	Meaning/Definition	Example
[Table]s related by both [Line Items] an and by [Axis]	A [Table] shares both [Line Items] and [Axis] with another [Table].	Geographic area and business segments breakdowns.

21.18. Flow Models

Flow is the notion of relations between networks and/or [Table]s for the purpose of ordering or sequencing information contained in a digital financial report.

Term	Meaning/Definition	Example
Networks with numbers and categories	Use information contained within the definition or label of a network to order information.	Use a number and category similar to the SEC approach
List of tables	Flat list of tables	
Hierarchy of tables	Organize tables into a hierarchy	

21.19. Footnote

Facts may also have **footnotes** (comments, don't confuse this with notes to the financial statements) which provide addition information about the fact.

Term	Meaning/Definition	Example
Identifier	Uniquely identifies the footnote.	FN-00001
Footnote Role	Category into which the footnote fits	
Footnote	The actual footnote	For additional information see Note B to the financial statements.

22. APPENDIX: Top XBRL Technical Syntax Related Modeling Tips

The following is a summary of the top 10 XBRL taxonomy and XBRL instance creation tips which will help you create quality systems which make use of XBRL, helping a business domain achieve what they are striving to achieve.

Generally business users will never need to deal with these sorts of issues as software will hide the issues from users. However, today software does not hide these XBRL technical syntax related issues. As such, we point them out.

22.1. Create a clear, unambiguous, formally documented information model

Create a clear, unambiguous, formally documented information model. One of the biggest problems XBRL taxonomies have is inconsistent information models. An information model is simply how the relations within a taxonomy are structured. This is of particular importance when extensibility is employed within your system. For example, the US GAAP Taxonomy creates structures such as [Table]s, [Roll Forward]s, and other such structures. They explain how these structures are to be created. You should do the same in order to be able to evaluate how your taxonomy is created and in order to explain how your taxonomy should be extended. Taxonomies are simply not random. Make yours clear, unambiguous, and formally document it so those extending your taxonomy can follow the rules.

22.2. Don't mix dimensional and non-dimensional models

Don't mix dimensional and non-dimensional models; personally I prefer a dimensional model. If you use XBRL Dimensions, then every concept should be attached to a hypercube thus requiring the dimensions of the concept to be explicitly identified. Mixing a dimensional model and a non-dimensional model causes headaches which can be avoided by simply using one model or the other. Since business information is inherently dimensional anyway, I personally prefer a dimensional model, using XBRL Dimensions consistently throughout your XBRL taxonomy. Mixing models also make using XBRL Formula much trickier.

22.3. Make each hypercube unique (use isomorphic hypercubes)

Make each hypercube unique. There are advantages to making each hypercube in an XBRL taxonomy unique. Take a look at this taxonomy. Search for the line items which say "Statement [Table]". You can see what I am talking about more clearly by looking at this. What is the point of using the same hypercube for each set of dimensions and concepts? Why not use a different unique hypercube name for each hypercube? This has a number of benefits, including making the extended link as any form of semantics unnecessary. The FINREP taxonomy makes each hypercube unique.

22.4. Close all hypercubes

Be sure to require that all hypercubes be closed. All hypercubes you create which have an "all" role should be closed (and all your hypercubes which have a "notAll" role should be open if you happen to use those). Leaving a hypercube open

basically lets anything exist in the context. What is the point of that? Be explicit and close all your hypercubes.

22.5. Clearly differentiate members and concepts

Always clearly differentiate dimension values and concepts. When creating an XBRL taxonomy you don't want users of the taxonomy to mix up what is a dimension value (such as a domain or a member) and what is a concept which can be used to report a value. The US GAAP Taxonomy differentiates domains and members by appending "[Domain]" or "[Member]" to such dimension values and assigning those types of elements to a special type value of "domainItemType". You could also use the substitutionGroup to differentiate these two types of XML Schema elements. That way, users don't get confused.

22.6. Use either segment or scenario, there is no real reason to use both

Use either segment or scenario, there is no real reason to use both. Eliminating unnecessary options makes things easier. There is no semantic difference between using the segment context element and the scenario context element. Besides, if different XBRL instance creators use different elements, comparability then becomes an issue. You can avoid both of these problems by simply using one or the other. Which is as easy as tossing a coin really. Using scenario seems to be the best, but the US GAAP Taxonomy suggests segment. You can pick.

22.7. Use XBRL Dimensions or use tuples, don't use both in the same XBRL taxonomy

Tuples and XBRL Dimensions are redundant in that they are basically two syntaxes for doing what amounts to the same thing. Each has its pros and cons. Pick and use one or the other; personally I prefer XBRL Dimensions. The biggest problem with using both tuples and XBRL Dimensions is explaining when to use one and when to use the other. The primary reason I don't like tuples is because they significantly inhibit extensibility. Basically, tuples add back the XML content model with XBRL worked to remove. XBRL Dimensions can do everything that tuples can do, but tuples are not nearly as functional as XBRL Dimensions.

22.8. Use decimals or precision, don't allow both

Precision and decimals are redundant, pick and use one or the other; personally I prefer decimals. The precision and decimals attribute on a fact value serves the same purpose. There is pretty much universal agreement that only one of these should have been created. Having both causes more work when working with XBRL instance information which contains both. FRTA suggests that decimals be used. So does the US GAAP Taxonomy. I agree and suggest using decimals because it is easier for business users to understand.

22.9. Avoid complex typed members unless you really need them

Don't use complex typed dimensions unless you really need them. Complex typed members allow literally any XML you can think of as a possible value, except for XBRL itself. It is way too much to ask for a software application to implement something like this. Further, using it to compare to entities effectively can be quite challenging. You can achieve the same results by using a number of simple typed members, which are much easier to build an interface for and easier to

make work. Complex typed members for dimension values are far more trouble than they are worth and should be avoided.

22.10. Be explicit, consistent and concise when expressing taxonomy information

Don't be redundant in expressing taxonomy information. If you express things twice in two different ways, you create work in that you now have to make sure the two things you are expressing are in sync. For example, expressing information in a presentation linkbase and also in a definition linkbase causes such redundant information. The FINREP taxonomy figured this out and does not make a presentation linkbase available with its taxonomy. In the short term this can be a bit of a challenge to effectively do because most software applications rely on the presentation linkbase. Overtime and as software gets better, this will not be an issue. First, realize that you are creating redundant information. Second, if you can, you may want to consider not making this redundant information available in your XBRL taxonomy.

22.11. Consider ditching XBRL calculations

Give serious consideration to using XBRL Formula rather than XBRL calculations. XBRL Formula is several orders of magnitude more powerful that XBRL calculations. Also, XBRL calculations have their idiosyncrasies. More and more people are moving to XBRL Formula. You may want to give strong consideration to abandoning XBRL calculations and using XBRL Formula instead. XBRL calculations can be easier in certain situations. The tradeoffs should be understood and evaluated in making your decision.

22.12. Realize that XBRL instance contexts and XBRL Dimensions hypercubes constrain facts differently

XBRL has two mechanisms for defining contextual information and those two ways work differently. The two ways are XBRL contexts and XBRL Dimensions hypercubes. Two specific pieces of an XBRL context, entity identifier and period, must exist on every XBRL Fact. They are unconstrained and not impacted by any context constrains defined by an XBRL Dimensions hypercube. Segment and scenario information not defined by XBRL Dimensions works this way also. XBRL Dimensions hypercubes is another way of constraining information, basically the dimensions or Measures associated with a Fact.

23. APPENDIX: Restricting Data Types

XBRL can use XML Schema Part 2, Datatypes (see the specification at http://www.w3.org/TR/xmlschema-2/) to restrict what creators of business reports can use as fact values. This can be quite useful in maintaining data quality.

For example, here are some types of restrictions which could be used:

- Setting a specific length, a minimum length, or a maximum length of a fact value, such as limiting the value to 10 characters
- Providing an enumerated lists of specific values which can be provided, such as the enumerated list: red, blue, green, orange.
- Providing a specific pattern for example the pattern of a phone number (XXX-XXX-XXXX) or of a social security number (XXX-XX-XXXX).

Going into details is beyond the scope of this document. However, we did want to mention this powerful features availability should you feel you need it.

24. APPENDIX: Understanding Calculation Inconsistencies

Generally you do not want calculation inconsistencies (they are really called inconsistencies, not errors) in your SEC XBRL filing. Many SEC filers can avoid all calculation inconsistencies. Sometimes though you cannot. The technical reason for this is that certain facts reported with certain periods sometimes get included in calculations which they should not actually be included in. This is a known situation in XBRL and is unavoidable. This is not the same thing as calculations which should add up but don't.

Some people think that using dimensions causes calculation errors. This is not the case. Using dimensions or not using dimensions does not cause calculation errors. Using dimensions incorrectly can lead to calculation errors.

These are the following reasons that a calculation linkbase error (actually the more correct term is calculation inconsistencies) might show up:

1. Because there truly are calculation inconsistencies.
2. Because of a taxonomy modelling error such as erroneously mixing two dimensional models together.
3. Due to SEC constraints imposed upon XBRL instance creation.
4. Due to "stray facts" being used by an XBRL processor in computations of a network where there is no intension that the fact value should be used. (This is a known issue with XBRL and caused by the lack of constraints on typically the period context, but it could also be caused by the entity identifier context.)

If "1" is the case, then the calculation inconsistency should clearly be fixed and this would resolve any issue of calculation inconsistencies showing up.

An example of "2" is on the balance sheet, modelling all balance sheet line items as concepts and then switching to model the classes of stock as [Axis] of a concept, for example if a company has two classes of stock, Class A common and Class B common. The way to avoid calculation inconsistencies is to create a concept for Class A common and a concept for Class B common; then there would be no calculation inconsistency. But see the discussion on point "3".

The SEC states that if information is not shown on the HTML financial statement then it should not be present in the XBRL instance. Using the classes of stock example where a company has two classes of stock, from a data modelling perspective, the class of stock breakdown would be something like:

Class A Common	100
Class B Common	200
Total Common	300

The value "300" is never really reported on a financial statement. However, from a data modelling perspective it is the true link between two [Table]s, the "Balance Sheet [Table]" and the "Classes of Common Stock [Table]". Class of stock information other than the value of each class of stock is shown such as par value, shares authorized, shares issued, shares outstanding, etc. That information does not fit into a balance sheet model, it fits into the class of stock model. If one things of all this from a "presentation" perspective, one reaches different conclusions as to how the information should be modelled. From a data modelling perspective, the conclusions reached would be different. If the

information is modelled correctly from a data modelling perspective, it is a trivial task for a computer application to take the information needed from the Class of Stock [Table] and render it correctly on the Balance Sheet [Table]. However, if the information is modelled from a presentation perspective, the connection between the balance sheet and the class of stock information does not exist.

The bottom line for points "2" and "3" are that how people think about the information in an XBRL instance, from a presentation perspective or from a data modelling perspective will highly likely mature when users realize that modelling information from a data modelling perspective really does not hurt their ability to present the information how they desire to present it; but modelling information from a presentation perspective hurts the ability to analyze the information.

There is a known issue with XBRL which point "4" shows. Say a company shows a balance sheet with two periods, December 31, 2010 and 2009. There are concepts relating to each balance sheet for those periods and the calculations for both of those periods work correctly. But, in another area of the financial statement, "Cash and cash equivalents", "Receivables", and "Current Assets" is disclosed for 2008. What an XBRL processor will try to do is put the concepts together and try and create a balance sheet and validate that balance sheet for the period 2008, but the calculations will not be consistent because there is no "Inventory" or "Prepaid expenses" disclosed which would be needed to actually confirm that the "Current Assets" value is correct. This is a known problem which occurs in XBRL which is due to the lack of a way to constrain the period (and also the entity identifier) from a network of concepts (i.e. an extended link of a specific role), and therefore calculation inconsistencies may occur which you cannot remove from your XBRL instance.

25. APPENDIX: Why SEC May Move to Inline XBRL

Another approach to using XBRL is Inline XBRL (iXBRL). There are advantages to iXBRL. Here is a summary of the advantages of iXBRL:

- **Decouples presentation and data model**. Using Inline XBRL allows for the "decoupling" of two things which, when dealt with together, cause problems. Inline XBRL allows the HTML aspect to deal with presentation, and therefore the creator of the data model is free to create a good data model and not try and get the presentation they are seeking by using the XBRL taxonomy. For example, SEC XBRL filers seek a certain presentation and to get that they leverage the only thing they think they have at their disposal with is the XBRL taxonomy. Using Inline XBRL for the presentation gives one precise control of the presentation. Not having to worry about the differences in presentation and presentation nuances allows for more "freedom" in creating a sound data model.
- **Document of record**. Inline XBRL offers the possibility of having a "document of record" which is readable by both humans (i.e. the HTML aspect of Inline XBRL) and computers (i.e. the XBRL aspect of Inline XBRL). One does need to be careful to ensure that the information communicated and viewed as HTML is identical to the information a computer application reads, both should be in sync. But that does not seem that challenging and it is certainly easier than what SEC XBRL filers have to do which is keep separate HTML and XBRL documents in sync.
- **Evolutionary path**. Inline XBRL seems to offer a nice evolutionary path which a lot of people seem to need. Personally, I am very confident that most people will eventually never use that HTML rendering in favor of the dynamic or "interactive" aspects of XBRL. For example, consider what I call the "hypercube jumping" (really has more to do with dimensions) and discuss in this blog post. But Inline XBRL does not take away the possibility of these dynamic features, they are still there to use, even if the XBRL is buried in an HTML document.
- **Zero difference between XBRL and Inline XBRL**. To a computer application trying to read the information, there is zero difference between a plain ole XBRL instance and an Inline XBRL document (instance, not sure what to call it). From the computer's perspective, they are 100% interchangeable. Now, I am sure that there are probably interoperability issues and bugs which might need working through, but that is all part of the process of getting things to work on a global scale.

Because of these advantages, there is enough of a probability that the SEC could move to iXBRL at some point in the future. This is worth keeping in the back of ones mind.