Understanding and Leveraging Fact Sets

By

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"If you have an apple and I have an apple and we exchange apples then you and I will still each have one apple. But if you have an idea and I have an idea and we exchange these ideas, then each of us will have two ideas." --- *George Bernard Shaw*

ABSTRACT: The fact set is a natural and useful notion that helps business professionals understand digital financial statements when they create, read, or analyze information from such reports and helps software engineers construct intuitive, high functioning, easy to understand software applications. Further, it is helpful to the management of a report creation processes to mentally break a report into individual pieces, verify that each individual piece is correct and that pieces interact correctly with all other pieces to form the whole report.

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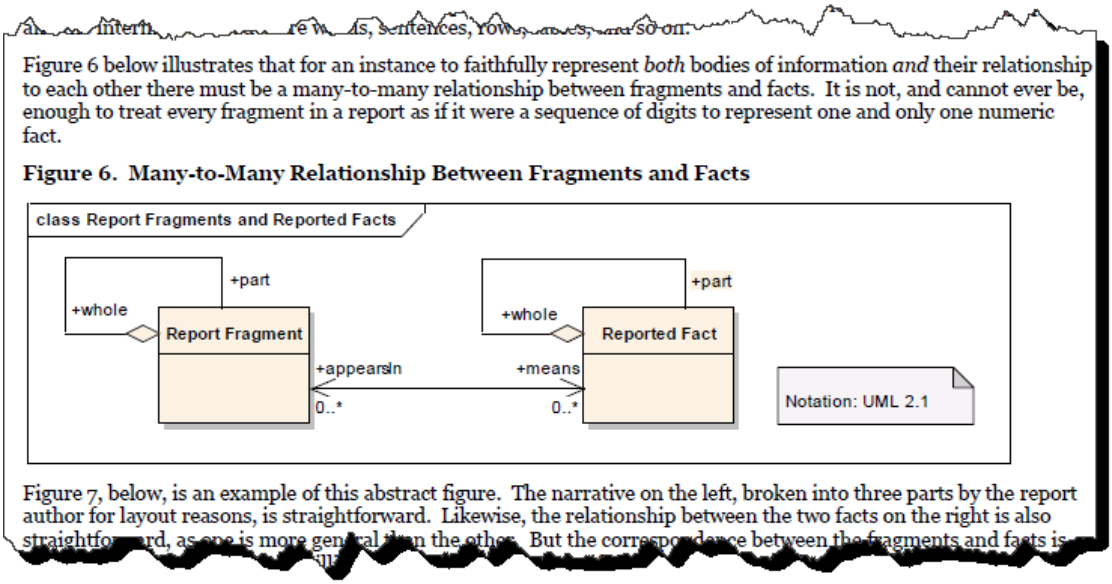
The term **Block**[1] was used to describe a specific type of fragment in XBRL-based digital financial reports. But there is a better term than Block; that term is **Fact Set**. The terms Block and Fact Set as I use them are synonyms.

This document explains what a Fact Set (or Block, I will use the term Fact Set for the rest of the document) is and how that notion can be leveraged when working with an XBRL-based digital financial report.

Decomposing a Financial Report

A full financial **report** is made up of **fragments**, or report fragments as the *US GAAP Financial Reporting Taxonomy Architecture* calls them[2]. The *US GAAP Financial Reporting Taxonomy Architecture* goes on to explain the notion of a **schedule**. The architecture document says, "A 'Schedule' appears as a set of concepts within a relationship group and the root concept of a schedule is a text block.[3]" And then the architecture discusses **facts** and relations between fragments and facts even providing a UML diagram to explain the relationship[4].



[1] *Understanding Block Semantics*, http://xbrlsite.azurewebsites.net/2017/IntelligentDigitalFinancialReporting/UnderstandingBlockSemantics.pdf
[2] FASB, *US GAAP Financial Reporting Taxonomy Architecture Version 2014*, page 4, https://www.fasb.org/cs/ContentServer?c=Document_C&cid=1176163689810&d=&pagename=FASB%2FDocument_C%2FDocumentPage
[3] FASB, *US GAAP Financial Reporting Taxonomy Architecture Version 2014*, page 15, Section 3.2.2 Schedules, https://www.fasb.org/cs/ContentServer?c=Document_C&cid=1176163689810&d=&pagename=FASB%2FDocument_C%2FDocumentPage
[4] FASB, *US GAAP Financial Reporting Taxonomy Architecture Version 2014*, page 13, Figure 6, https://www.fasb.org/cs/ContentServer?c=Document_C&cid=1176163689810&d=&pagename=FASB%2FDocument_C%2FDocumentPage

So, the descriptions of these terms and the relations between the terms is not necessarily clear as provided by the *US GAAP Financial Reporting Taxonomy Architecture*; however, the architecture is trying to articulate the pieces of a financial report, what those pieces do, and how the pieces interact with one another.

I have similarly decomposed the objects of a financial report. The following is a comparison of the terms that I use reconciled to the terms the *US GAAP Financial Reporting Taxonomy Architecture* uses as best as possible:

Definition	My Term	US GAAP Financial Reporting Taxonomy Term
A **report** is information published by a reporting entity at some point in time for some purpose.	Report	Financial Report
A **fragment** is a set of one to many fact sets which go together for some specific purpose within a report.	Fragment	Report Fragment
A **fact set** is a set of facts which go together (tend to be cohesive and share a certain common nature) for some specific purpose within a report.	Fact Set	Schedule
A **fact** is reported. A fact defines a single, observable, reportable piece of information contained within a report contextualized for unambiguous interpretation or analysis by one or more distinguishing aspects.	Fact	Fact

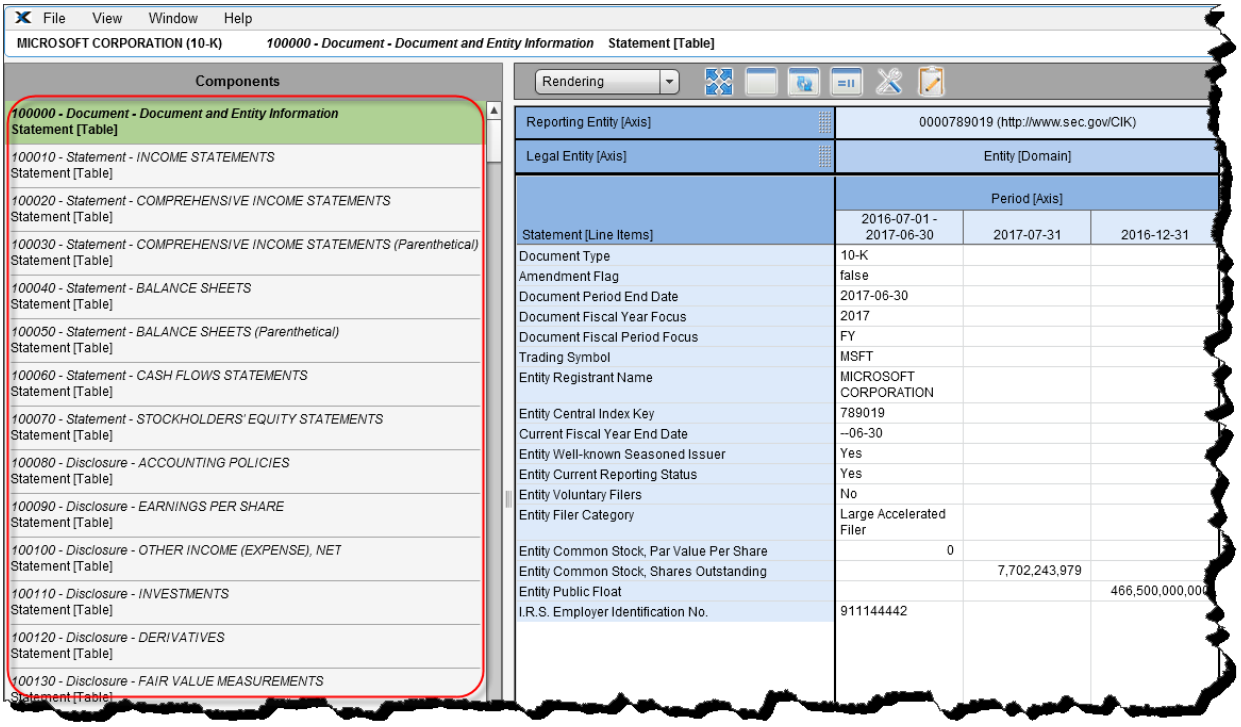
All the terms correlate pretty well with the possible exception of “fact set” and “schedule”. The way the US GAAP Financial Reporting Taxonomy Architecture uses the term schedule is not as clear as it needs to be. While I did not provide the complete logical model of a financial repot above, understanding that complete model is helpful. You can find the *Logical Theory Describing a Business Report*[5].

Example Decomposition

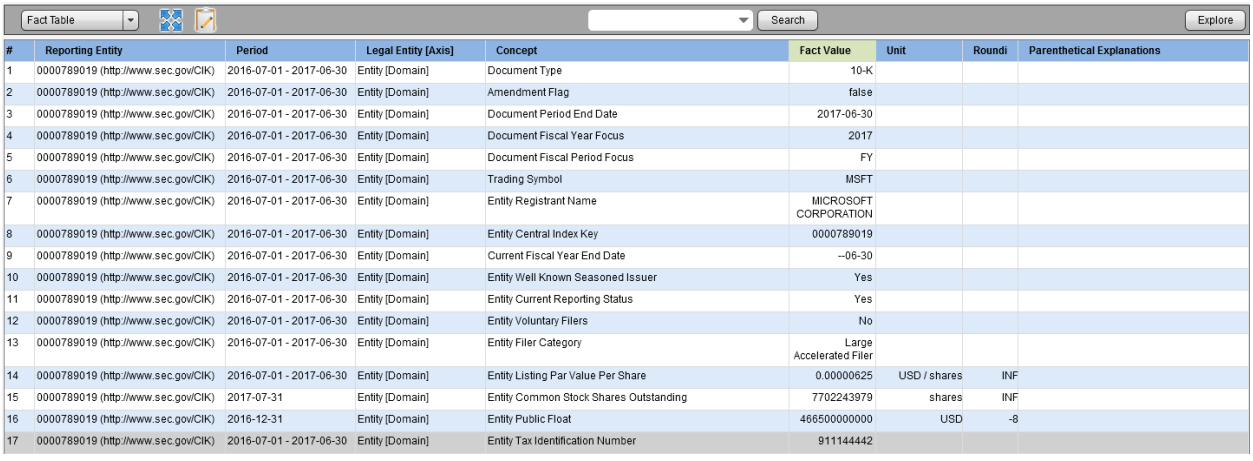
To better solidify the understanding of these terms let me provide a specific example. I will use the Microsoft 2017 10-K[6] report to explain the difference between a report, fragment, fact set, and fact. You can use the SEC Interactive Data Viewer[7], the freely available XBRL Cloud Viewer[8], or any tool of your choice that provides the sorts of information I will show you in this section.

[5] Charles Hoffman, CPA and Rene van Egmond, *Logical Theory Describing a Business Report*, http://xbrlsite.azurewebsites.net/2019/Library/LogicalTheoryDescribingBusinessReport.pdf
[6] Microsoft 10-K for 2017, https://www.sec.gov/Archives/edgar/data/789019/000156459017014900/0001564590-17-014900-index.htm
[7] Microsoft 10-K in SEC Interactive Data Viewer, https://www.sec.gov/cgi-bin/viewer?action=view&cik=789019&accession_number=0001564590-17-014900&xbrl_type=v
[8] Microsoft 10-K in XBRL Cloud Viewer, https://edgardashboard.xbrlcloud.com/flex/viewer/XBRLViewer.html#instance=http://www.sec.gov/Archives/edgar/data/789019/000156459017014900/msft-20170630.xml

So here is a partial view of the Microsoft 10-K report. You see the fragments of that report in a list on the left circled in red. You see the rendering of the selected fragment on the right.



If you change to the "Fact Table" view you see what the XBRL Cloud viewer calls that Fact Table; I call this same thing the "Fact Set". It is simply the individual facts that make up the selected report fragment.



#	Reporting Entity	Period	Legal Entity [Axis]	Concept	Fact Value	Unit	Roundi	Parenthetical Explanations
1	0000789019 (http://www.sec.gov/CIK)	2016-07-01 - 2017-06-30	Entity [Domain]	Document Type	10-K			
2	0000789019 (http://www.sec.gov/CIK)	2016-07-01 - 2017-06-30	Entity [Domain]	Amendment Flag	false			
3	0000789019 (http://www.sec.gov/CIK)	2016-07-01 - 2017-06-30	Entity [Domain]	Document Period End Date	2017-06-30			
4	0000789019 (http://www.sec.gov/CIK)	2016-07-01 - 2017-06-30	Entity [Domain]	Document Fiscal Year Focus	2017			
5	0000789019 (http://www.sec.gov/CIK)	2016-07-01 - 2017-06-30	Entity [Domain]	Document Fiscal Period Focus	FY			
6	0000789019 (http://www.sec.gov/CIK)	2016-07-01 - 2017-06-30	Entity [Domain]	Trading Symbol	MSFT			
7	0000789019 (http://www.sec.gov/CIK)	2016-07-01 - 2017-06-30	Entity [Domain]	Entity Registrant Name	MICROSOFT CORPORATION			
8	0000789019 (http://www.sec.gov/CIK)	2016-07-01 - 2017-06-30	Entity [Domain]	Entity Central Index Key	0000789019			
9	0000789019 (http://www.sec.gov/CIK)	2016-07-01 - 2017-06-30	Entity [Domain]	Current Fiscal Year End Date	--06-30			
10	0000789019 (http://www.sec.gov/CIK)	2016-07-01 - 2017-06-30	Entity [Domain]	Entity Well Known Seasoned Issuer	Yes			
11	0000789019 (http://www.sec.gov/CIK)	2016-07-01 - 2017-06-30	Entity [Domain]	Entity Current Reporting Status	Yes			
12	0000789019 (http://www.sec.gov/CIK)	2016-07-01 - 2017-06-30	Entity [Domain]	Entity Voluntary Filers	No			
13	0000789019 (http://www.sec.gov/CIK)	2016-07-01 - 2017-06-30	Entity [Domain]	Entity Filer Category	Large Accelerated Filer			
14	0000789019 (http://www.sec.gov/CIK)	2016-07-01 - 2017-06-30	Entity [Domain]	Entity Listing Par Value Per Share	0.00000625	USD / shares	INF	
15	0000789019 (http://www.sec.gov/CIK)	2017-07-31	Entity [Domain]	Entity Common Stock Shares Outstanding	7702243979	shares	INF	
16	0000789019 (http://www.sec.gov/CIK)	2016-12-31	Entity [Domain]	Entity Public Float	466500000000	USD	-8	
17	0000789019 (http://www.sec.gov/CIK)	2016-07-01 - 2017-06-30	Entity [Domain]	Entity Tax Identification Number	911144442			

You will get a better appreciation of the difference between a fragment and a fact set when we look at the balance sheet. So switching over to the SEC Interactive Data viewer because with that I can see the entire balance sheet, you see the following:

BALANCE SHEETS - USD ($) $ in Millions	Jun. 30, 2017	Jun. 30, 2016
Current assets:		
Cash and cash equivalents	$ 7,663	$ 6,510
Short-term investments (including securities loaned of $3,694 and $204)	125,318	106,730
Total cash, cash equivalents, and short-term investments	132,981	113,240
Accounts receivable, net of allowance for doubtful accounts of $405 and $426	19,792	18,277
Inventories	2,181	2,251
Other	4,897	5,892
Total current assets	159,851	139,660
Property and equipment, net of accumulated depreciation of $24,179 and $19,800	23,734	18,356
Equity and other investments	6,023	10,431
Goodwill	35,122	17,872
Intangible assets, net	10,106	3,733
Other long-term assets	6,250	3,416
Total assets	241,086	193,468
Current liabilities:		
Accounts payable	7,390	6,898
Short-term debt	9,072	12,904
Current portion of long-term debt	1,049	0
Accrued compensation	5,819	5,264
Income taxes	718	580
Short-term unearned revenue	34,102	27,468
Securities lending payable	97	294
Other	6,280	5,949
Total current liabilities	64,527	59,357
Long-term debt	76,073	40,557
Long-term unearned revenue	10,377	6,441
Deferred income taxes	531	1,476
Other long-term liabilities	17,184	13,640
Total liabilities	168,692	121,471
Commitments and contingencies		
Stockholders' equity:		
Common stock and paid-in capital – shares authorized 24,000; outstanding 7,708 and 7,808	69,315	68,178
Retained earnings	2,648	2,282
Accumulated other comprehensive income	431	1,537
Total stockholders' equity	72,394	71,997
Total liabilities and stockholders' equity	$ 241,086	$ 193,468

The balance sheet fragment is made up of two fact sets. The first fact set is the set of facts that makes up the *Assets [Roll Up]*. The second fact set is the set of facts that makes up the *Liabilities and Equity [Roll Up]*. Now, this may not make a lot of sense. You might ask, "Why would you ever use half of the balance sheet, you need both the assets roll up and the liabilities and equity roll up to work with the balance sheet." And you would be right, you typically work with both the assets and liabilities and equity roll ups when you work with the balance sheet. But, for other report fragments, this is not true.

Further, the facts for the balance sheet all fit into one fact set or fact table. Why would you need to separate those out? Well, in this case that is a good question because we do not need to separate the assets roll up and liabilities and equity roll up facts. Except, when we do. We do want to separate the balance sheet fragment when we only want to work with the assets roll up facts.

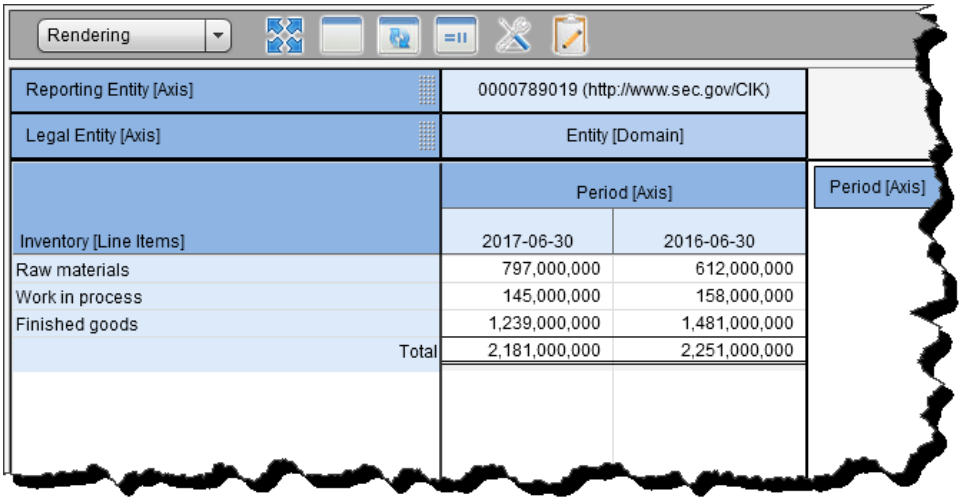
Fact Table Search

#	Reporting Entity	Period	Legal Entity [Axis]	Concept	Fact Value	Unit	Roundi
1	0000789019 (http://www.sec.gov/CIK)	2016-06-30	Entity [Domain]	Cash And Cash Equivalents At Carrying Value	6510000000	USD	-6
2	0000789019 (http://www.sec.gov/CIK)	2017-06-30	Entity [Domain]	Cash And Cash Equivalents At Carrying Value	7663000000	USD	-6
3	0000789019 (http://www.sec.gov/CIK)	2017-06-30	Entity [Domain]	Available For Sale Securities Current	125318000000	USD	-6
4	0000789019 (http://www.sec.gov/CIK)	2016-06-30	Entity [Domain]	Available For Sale Securities Current	106730000000	USD	-6
5	0000789019 (http://www.sec.gov/CIK)	2016-06-30	Entity [Domain]	Cash Cash Equivalents And Short Term Investments	113240000000	USD	-6
6	0000789019 (http://www.sec.gov/CIK)	2017-06-30	Entity [Domain]	Cash Cash Equivalents And Short Term Investments	132981000000	USD	-6
7	0000789019 (http://www.sec.gov/CIK)	2017-06-30	Entity [Domain]	Accounts Receivable Net Current	19792000000	USD	-6
8	0000789019 (http://www.sec.gov/CIK)	2016-06-30	Entity [Domain]	Accounts Receivable Net Current	18277000000	USD	-6
9	0000789019 (http://www.sec.gov/CIK)	2016-06-30	Entity [Domain]	Inventory Net	2251000000	USD	-6
10	0000789019 (http://www.sec.gov/CIK)	2017-06-30	Entity [Domain]	Inventory Net	2181000000	USD	-6
11	0000789019 (http://www.sec.gov/CIK)	2017-06-30	Entity [Domain]	Other Assets Current	4897000000	USD	-6
12	0000789019 (http://www.sec.gov/CIK)	2016-06-30	Entity [Domain]	Other Assets Current	5892000000	USD	-6
13	0000789019 (http://www.sec.gov/CIK)	2017-06-30	Entity [Domain]	Assets Current	159851000000	USD	-6

Let's go back to the first fragment we looked at, the document and entity information. Take a close look at what you see. First, the name is a dead giveaway, "Document and Entity Information". So, this is really two fact sets that you have no way of separating unless you want to separate the "document information" from the "entity information" and you can even say that there are three categories because you also have "entity listing information" in that one fact set.

Document and Entity Information - USD ($) $ / shares in Units, $ in Billions	12 Months Ended Jun. 30, 2017	Jul. 31, 2017	Dec. 31, 2016
Document Type	10-K		
Amendment Flag	false		
Document Period End Date	Jun. 30, 2017		
Document Fiscal Year Focus	2017		
Document Fiscal Period Focus	FY		
Trading Symbol	MSFT		
Entity Registrant Name	MICROSOFT CORPORATION		
Entity Central Index Key	0000789019		
Current Fiscal Year End Date	--06-30		
Entity Well-known Seasoned Issuer	Yes		
Entity Current Reporting Status	Yes		
Entity Voluntary Filers	No		
Entity Filer Category	Large Accelerated Filer		
Entity Common Stock, Par Value Per Share	$ 0.00000625		
Entity Common Stock, Shares Outstanding		7,702,243,979	
Entity Public Float			$ 466.5
I.R.S. Employer Identification No.	911144442		

So let's walk through all the parts of a fact set by looking at a significantly smaller fact set, components of inventory. Here is the rendering of the components of inventory:



Rendering

Reporting Entity [Axis]	0000789019 (http://www.sec.gov/CIK)	
Legal Entity [Axis]	Entity [Domain]	
	Period [Axis]	Period [Axis]
Inventory [Line Items]	2017-06-30	2016-06-30
Raw materials	797,000,000	612,000,000
Work in process	145,000,000	158,000,000
Finished goods	1,239,000,000	1,481,000,000
Total	2,181,000,000	2,251,000,000

Here is the fact table (fact set) of the components of inventory:

#	Reporting Entity	Period	Legal Entity [Axis]	Concept	Fact Value	Unit	Roundi
1	0000789019 (http://www.sec.gov/CIK)	2016-06-30	Entity [Domain]	Inventory Raw Materials Net Of Reserves	612000000	USD	-6
2	0000789019 (http://www.sec.gov/CIK)	2017-06-30	Entity [Domain]	Inventory Raw Materials Net Of Reserves	797000000	USD	-6
3	0000789019 (http://www.sec.gov/CIK)	2017-06-30	Entity [Domain]	Inventory Work In Process Net Of Reserves	145000000	USD	-6
4	0000789019 (http://www.sec.gov/CIK)	2016-06-30	Entity [Domain]	Inventory Work In Process Net Of Reserves	158000000	USD	-6
5	0000789019 (http://www.sec.gov/CIK)	2017-06-30	Entity [Domain]	Inventory Finished Goods Net Of Reserves	1239000000	USD	-6
6	0000789019 (http://www.sec.gov/CIK)	2016-06-30	Entity [Domain]	Inventory Finished Goods Net Of Reserves	1481000000	USD	-6
7	0000789019 (http://www.sec.gov/CIK)	2016-06-30	Entity [Domain]	Inventory Net	2251000000	USD	-6
8	0000789019 (http://www.sec.gov/CIK)	2017-06-30	Entity [Domain]	Inventory Net	2181000000	USD	-6

And here is the information model definition for the components of inventory disclosure:

Label	Report Element Class	Period	Balance	Name
Inventory, Current [Table]	[Table]			us-gaap:InventoryCurrentTable
Legal Entity [Axis]	[Axis]			dei:LegalEntityAxis
Entity [Domain]	[Member]			dei:EntityDomain
Inventory [Line Items]	[Line Items]			us-gaap:InventoryLineItems
Raw materials	[Concept] Monetary	As Of	debit	us-gaap:InventoryRawMaterialsNetOfReserves
Work in process	[Concept] Monetary	As Of	debit	us-gaap:InventoryWorkInProcessNetOfReserves
Finished goods	[Concept] Monetary	As Of	debit	us-gaap:InventoryFinishedGoodsNetOfReserves
Total	[Concept] Monetary	As Of	debit	us-gaap:InventoryNet

Then you have the business rules that define the roll up of the inventory line items:

Label	Report Element Class	Period	Balance	Name
Inventory	[Concept] Monetary	As Of	debit	us-gaap:InventoryNet
Raw materials	[Concept] Monetary	As Of	debit	us-gaap:InventoryRawMaterialsNetOfReserves
Work in process	[Concept] Monetary	As Of	debit	us-gaap:InventoryWorkInProcessNetOfReserves
Finished goods	[Concept] Monetary	As Of	debit	us-gaap:InventoryFinishedGoodsNetOfReserves

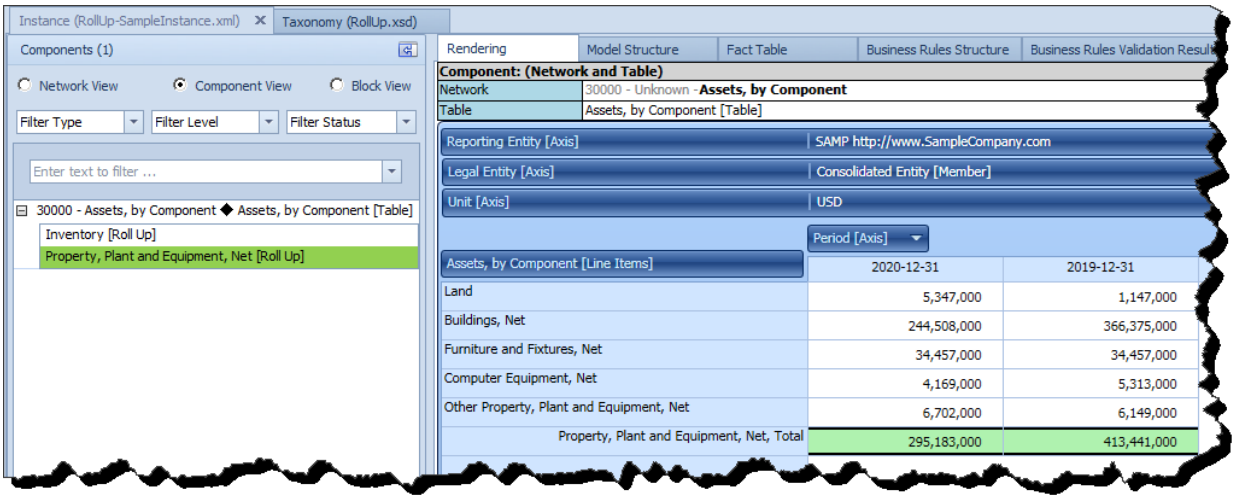
So all that is straight forward. You have a fragment, components of inventory, which has exactly one fact set. Leveraging the fact set, the information model definition, the concept arrangement pattern, and the XBRL calculation relations, a very nice and readable rendering for the fact set can be created.

But what if a company did what is shown below? What you see is one fragment that has two roll ups; a roll up for the components of property, plant, and equipment and a roll up of the components of inventory. What prevents a public company from creating this type of fragment? Nothing prevents this and, in fact, it is done all the time.

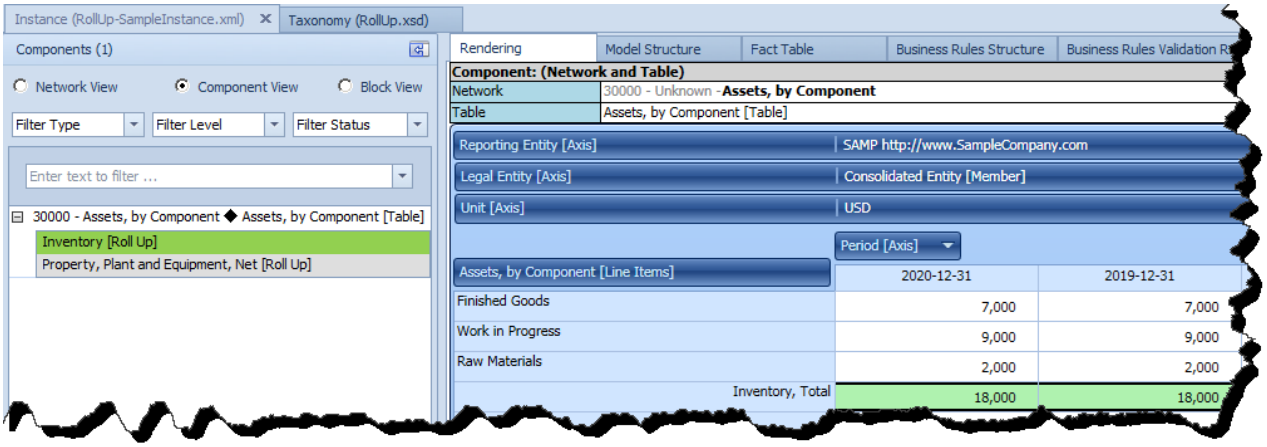
Reporting Entity [Axis]	SAMP http://www.SampleCompany.com	
Legal Entity [Axis]	Consolidated Entity [Member]	
Unit [Axis]	USD	
	Period [Axis]	
Assets, by Component [Line Items]	2020-12-31	2019-12-31
Land	5,347,000	1,147,000
Buildings, Net	244,508,000	366,375,000
Furniture and Fixtures, Net	34,457,000	34,457,000
Computer Equipment, Net	4,169,000	5,313,000
Other Property, Plant and Equipment, Net	6,702,000	6,149,000
Property, Plant and Equipment, Net, Total	295,183,000	413,441,000
Finished Goods	7,000	7,000
Work in Progress	9,000	9,000
Raw Materials	2,000	2,000
Inventory, Total	18,000	18,000

So while the creator if this information might want to put these two roll ups together into one fragment; you might want to work with these two pieces of this one fragment separately; and that is exactly the sort of functionality the fact set provides.

Here is the property, plant, and equipment roll up:



Here is the inventory components roll up:



And so, how did the software application separate the two fact sets within the one fragment and be able to work with them individually? (Try this in most software applications and you will not be able to do this.)

The answer to the question is that the software above does understand what a fact set is and it uses information from the model description to break the two fact sets out from the one fragment. What is the information that provides this metadata reliably? The XBRL calculation relations. Each roll up has XBRL calculation relations and each set of XBRL calculation relations has one root element. It is that one root element that (a) tells you the name of the fact set (see on the left) and which facts go into the fact set (or fact table). See:

Property, plant and equipment components fact set:

#	Reporting Entity	Period	Concept	Legal Entity [Axis]	Fact Value	Unit	Rounding
1	SAMP http://www.SampleCompany.com	2020-12-31	Land	Consolidated Entity [Member]	5347000	USD	0
2	SAMP http://www.SampleCompany.com	2019-12-31	Land	Consolidated Entity [Member]	1147000	USD	0
3	SAMP http://www.SampleCompany.com	2020-12-31	Buildings, Net	Consolidated Entity [Member]	244508000	USD	0
4	SAMP http://www.SampleCompany.com	2019-12-31	Buildings, Net	Consolidated Entity [Member]	366375000	USD	0
5	SAMP http://www.SampleCompany.com	2020-12-31	Furniture and Fixtures, Net	Consolidated Entity [Member]	34457000	USD	0
6	SAMP http://www.SampleCompany.com	2019-12-31	Furniture and Fixtures, Net	Consolidated Entity [Member]	34457000	USD	0
7	SAMP http://www.SampleCompany.com	2020-12-31	Computer Equipment, Net	Consolidated Entity [Member]	4169000	USD	0
8	SAMP http://www.SampleCompany.com	2019-12-31	Computer Equipment, Net	Consolidated Entity [Member]	5313000	USD	0
9	SAMP http://www.SampleCompany.com	2020-12-31	Other Property, Plant and Equipment, Net	Consolidated Entity [Member]	6702000	USD	0
10	SAMP http://www.SampleCompany.com	2019-12-31	Other Property, Plant and Equipment, Net	Consolidated Entity [Member]	6149000	USD	0
11	SAMP http://www.SampleCompany.com	2020-12-31	Property, Plant and Equipment, Net	Consolidated Entity [Member]	295183000	USD	0
12	SAMP http://www.SampleCompany.com	2019-12-31	Property, Plant and Equipment, Net	Consolidated Entity [Member]	413441000	USD	0

Inventory components fact set:

#	Reporting Entity	Period	Concept	Legal Entity [Axis]	Fact Value	Unit	Rounding
13	SAMP http://www.SampleCompany.com	2020-12-31	Finished Goods	Consolidated Entity [Member]	7000	USD	0
14	SAMP http://www.SampleCompany.com	2019-12-31	Finished Goods	Consolidated Entity [Member]	7000	USD	0
15	SAMP http://www.SampleCompany.com	2020-12-31	Work in Progress	Consolidated Entity [Member]	9000	USD	0
16	SAMP http://www.SampleCompany.com	2019-12-31	Work in Progress	Consolidated Entity [Member]	9000	USD	0
17	SAMP http://www.SampleCompany.com	2020-12-31	Raw Materials	Consolidated Entity [Member]	2000	USD	0
18	SAMP http://www.SampleCompany.com	2019-12-31	Raw Materials	Consolidated Entity [Member]	2000	USD	0
19	SAMP http://www.SampleCompany.com	2020-12-31	Inventory	Consolidated Entity [Member]	18000	USD	0
20	SAMP http://www.SampleCompany.com	2019-12-31	Inventory	Consolidated Entity [Member]	18000	USD	0

So while the fragment that holds the two fact set contains the property, plant, and equipment components facts and the inventory components facts; you can also separate the facts into the individual fact sets.

Things you May Not Realize about Representing Information using XBRL

This section gets a little bit technical because I have to explain a few things about how XBRL is employed to represent information. If you want to understand this section, please read through the basic *XBRL Technical Primer*[9].

In XBRL, an information model description is created by creating Networks, putting Tables (hypercubes) in those Networks, and then putting other report elements within those Tables. Alternatively, you might not explicitly define a Table within a Network. And so if you do not explicitly provide a Table and put any report elements within a Network; essentially what you are doing is creating a single implied table that contains each report element that is not represented within a Table within a Network.

And so, Networks and Tables (explicitly defined or implied) are used to represent the information model description of a report.

Sometimes you MUST separate things using Networks to avoid conflicts; other times you get too choose whether to separate things using Networks. Tables work the same way; sometimes you MUST use a Table to separate fact sets and other times you get to choose whether you want to (a) use an existing Table or (b) create a new Table to represent some piece of a report.

A representation of information can have exactly four possible states or features:

1. An information representation is ***logically represented*** and ***easy to comprehend***.
2. An information representation is ***logically represented*** and ***hard to comprehend***.
3. An information representation is ***illogically represented*** and ***easy to comprehend (but illogical)***.
4. An information representation is ***illogically represented*** and ***hard to comprehend (but illogical)***.

States #3 and #4 are incorrect by definition. Information that is defined illogically is simply wrong.

State #2 is not incorrect, but neither is it a best practice. State #1 is the only best practice, information that is logically represented and as easy to read as possible. A **best practice** is a method or technique that has been generally accepted as superior to any other known alternatives because it produces results that are superior to those results achieved by other means or because it has become a standard way of doing something.

[9] Charles Hoffman, CPA and Rene van Egmond, XBRL Technical Primer, http://xbrlsite.azurewebsites.net/2017/IntelligentDigitalFinancialReporting/Part00_Chapter01.2_XBRLPrimer.pdf

And so, let's have another look at the report rendering that I showed earlier where property, plant, and equipment components roll up and the inventory components roll up are combined into one report fragment:

Reporting Entity [Axis]	SAMP http://www.SampleCompany.com	
Legal Entity [Axis]	Consolidated Entity [Member]	
Unit [Axis]	USD	
	Period [Axis]	
Assets, by Component [Line Items]	2020-12-31	2019-12-31
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
Property, Plant and Equipment, Net, Total	295,183,000	413,441,000
Finished Goods	7,000	7,000
Work in Progress	9,000	9,000
Raw Materials	2,000	2,000
Inventory, Total	18,000	18,000

Now, look at this almost identical representation of the same information and note the slight difference. In the report above, a root presentation relation which is an [Abstract] concept that holds all of the other concepts from the property, plant, and equipment [Roll up] and distinguishes those concepts from the inventory [Roll Up].

Reporting Entity [Axis]	SAMP http://www.SampleCompany.com	
Legal Entity [Axis]	Consolidated Entity [Member]	
Unit [Axis]	USD	
	Period [Axis]	
Assets, by Component [Line Items]	2020-12-31	2019-12-31
Property, Plant and Equipment [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
Property, Plant and Equipment, Net, Total	295,183,000	413,441,000
Inventory [Roll Up]		
Finished Goods	7,000	7,000
Work in Progress	9,000	9,000
Raw Materials	2,000	2,000
Inventory, Total	18,000	18,000

So, is the first rendering at the top of the page without those two [Abstract] concepts wrong and the second rendering at the bottom right? No, that is not what I am saying. Both the top and the bottom representations are logically correct. But at the same time I point out that if the second representation is easier to read than the first, then the second is a better practice that the first.

You might think that this discussion is silly and that as long as the representation is logical, you can represent XBRL-based information however you want. And yes, it is true that you can do that, represent information however you want as long as the information is not illogical.

However, if you are a software engineer that is constructing software that helps business professionals do things right or to automatically follow best practices or to not let software users to things wrong; this is incredibly helpful information.

Further, have a look at this fragment from an XBRL-based financial report of a public company submitted to the SEC:

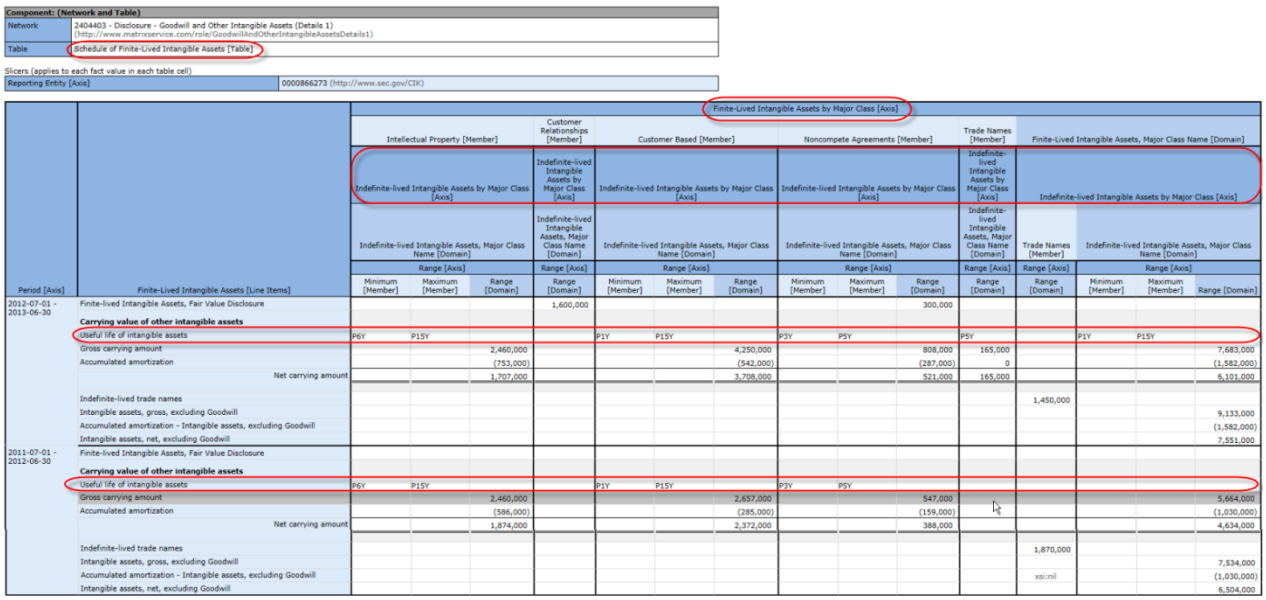
Commitments (Details) (USD $) In Millions, unless otherwise specified	12 Months Ended		
	Oct. 31, 2012	Oct. 31, 2011	Oct. 31, 2010
Commitments			
Rent expense	$ 1,012	$ 1,042	$ 1,062
Sublease rental income	37	38	46
Property under capital lease	882	577	
Accumulated depreciation on property under capital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

That representation you see above is from an actual XBRL-based report created by a public company to the U.S. Securities and Exchange Commission. While logically, the information is 100% correct, the rendering of the information is hideous and downright ugly.

I have provided you with one simple, basic use of fact sets. This basic explanation is useful in that it helps you get a true sense of what a fact set really is. But it is only a basic example; there are many other uses for the notion of fact sets.

So, one use of fact sets is to avoid hideous, ugly, and unreadable information representations such as these two examples:

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



Component: (Network and Table)
Network: 2404403 - Disclosure - Goodwill and Other Intangible Assets (Details 1) (http://www.matrixservice.com/role/GoodwillAndOtherIntangibleAssetsDetails1)
Table: Schedule of Finite-Lived Intangible Assets [Table]

Slicers (applies to each fact value in each table cell)
Reporting Entity [Axis]: 0000866273 (http://www.sec.gov/CIK)

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

There are two strong arguments for not creating ugly, hideous renderings. First, for every one bad example of a rendering, there are 50 or 100 or good examples. The good examples are best practices, the bad examples are not. Second, if you can help software engineers the problems you are having representing information using XBRL and making it right; the software engineers can help you be more successful.

Better Understanding the Utility of a Fact Set and a Slot

It is pretty clear that a financial report is made up of lots of smaller pieces and those pieces interact with one another in specific ways. If you give those pieces names, you can use the pieces to perform useful work.

A **fact set** is a part of a fragment that participates in the same *concept arrangement pattern*[10]. By definition, all the concepts participate in the same Member Arrangement Pattern of a component (Network + Table) simply because they exist in the same Table. A roll up, roll forward, adjustment, and set (hierarchy) are all types of concept arrangement patterns. Every XBRL-based public company financial report is essentially a set of fact sets. I estimate that there are about 754,430 fact sets in the set of approximately 6,000 public company reports that I analyzed. 16% are roll ups, 5% are roll forwards, 24% are sets (hierarchies), and 54% are text blocks[11]. I know this because I measured the reports that I analyzed to figure out that fact sets exist.

An **information model** definition is the combined *concept arrangement pattern* and *member arrangement pattern* of a fact set.

Fact sets have something called a "slot"[12]. A **slot** is simply the idea of an allotted place where something can be logically and sensibly placed in a fact set. For example, a roll up has exactly *one* total and so *a second total* could never logically be added to a roll up.

Fact sets and slots are in no way random. Fact sets are used to represent information that is disclosed in a financial report in consistent patterns. Balance sheets and the other primary financial statements are made up of fact sets, long-term debt maturities disclosure and other disclosures are made up of fact sets. Every fragment of a financial report is a set of one or many fact sets. As I pointed out, fact sets have very specific *concept arrangement patterns*: roll up, roll forward, text block, adjustment, variance, set (hierarchy). Fact sets are related to other fact sets in very specific ways.

Basic fact set

Here is an example of a fact set that represents a roll up (the concept arrangement pattern) which has no non-core [Axis] added and therefore the most basic member arrangement pattern:

[10] See page 11, http://www.xbrlsite.com/2015/Analysis/AnalysisSummary2014_PiecesOfReoprt.pdf#page=11

[11] I have a document that summarizes this information.

[12] See section 5.5. Understanding the notion of slot or opening, http://www.xbrlsite.com/DigitalFinancialReporting/Book2015/DigitalFinancialReporting-2015-04-29-C05.pdf#page=3

Property, Plant and Equipment, by Component [Line Items]	Period [Axis]	
	2010-12-31	2009-12-31
Property, Plant and Equipment, by Component [Roll Up]		
Land	1,000,000	1,000,000
Machinery and equipment, gross	2,000,000	2,000,000
Furniture and fixtures, gross	6,000,000	6,000,000
Accumulated depreciation	(1,000,000)	(1,000,000)
Property, plant and equipment, net	8,000,000	8,000,000

You cannot add a second total to a roll up as a roll up has only one total. It would not make logical sense to add a second total to a roll up. Therefore, adding second totals to a roll up should be (could be) disallowed within a software application.

It does make sense to add another concept to the set of line items which aggregate to the total. It also does make sense to add an entirely new period characteristic. A slot is simply a logical location where something can be added to a fact set. Exactly where slots exist in a fact set depends on the *concept arrangement pattern* and *member arrangement pattern* of the fact set. Every fact set in every report fragment in every report works in exactly this same way.

If you are a professional accountant you innately understand how information is related in a set of information such as what is represented in the example shown above. And there are many, many other such report fragments within a financial report. But professional accountants don't call these pieces of information "fact set" because they never needed to explain the mechanics and dynamics that are at work to a computer before. But to represent a financial report digitally and to interact with software applications that provide these digital representations of a financial report describing these mechanics and dynamics is necessary.

Slightly more complex fact set

Below is a slightly more complex fact set. The fact set below is made up of two roll ups and has a whole-part relation which semantically is similar to a roll up. Professional accountants understand that the disclosure below both "foots" and "cross casts". However, the software vendor creating this application does not provide the single underscores and double underscores that explicitly show the mathematical relations. I have added green arrows to show the mathematical relations and green check marks to show that all the information does in fact foot and cross cast as expected:

	0000000001			
	31-Dec-2011			
	All Available-for-Sale Debt and Equity Securities [Domain]	Treasury bills [Member]	Corporate bonds [Member]	Sovereign debt securities [Member]
Available-for-sale Securities, Contractual Maturities [Table]				
Available-for-sale Securities, Contractual Maturities [Line Items]				
Available-for-sale securities at amortized cost [Roll Up]				
Due in one year or less	$300,000,000	$100,000,000	$100,000,000	$100,000,000
Due after one year through five years	$300,000,000	$100,000,000	$100,000,000	$100,000,000
Due after five years through ten years	$300,000,000	$100,000,000	$100,000,000	$100,000,000
Due after ten years	$300,000,000	$100,000,000	$100,000,000	$100,000,000
No contractual maturity dates	$300,000,000	$100,000,000	$100,000,000	$100,000,000
Available-for-sale securities at amortized cost	$1,500,000,000	$500,000,000	$500,000,000	$500,000,000
Available-for-sale securities at estimated fair value [Roll Up]				
Due in one year or less	$300,000,000	$100,000,000	$100,000,000	$100,000,000
Due after one year through five years	$300,000,000	$100,000,000	$100,000,000	$100,000,000
Due after five years through ten years	$300,000,000	$100,000,000	$100,000,000	$100,000,000
Due after ten years	$300,000,000	$100,000,000	$100,000,000	$100,000,000
No contractual maturity dates	$300,000,000	$100,000,000	$100,000,000	$100,000,000
Available-for-sale securities at estimated fair value	$1,500,000,000	$500,000,000	$500,000,000	$500,000,000

The fragment above has two fact sets. Each fact set has a roll up concept arrangement pattern. Each fact set shares the same member arrangement pattern which happens to be a whole-part relation. Logically, the whole-part member arrangement pattern relation is identical to the roll up concept arrangement pattern. It still makes sense to add concepts to the roll up. It still makes sense to add a new period. It also makes sense to add an additional [Member] to the [Axis]. (NOTE that this software does not show the name of the [Axis] "Period", the "Reporting Entity" or the other [Axis] which contains the [Member]s shown above.)

Imagine articulating all the things that are going on unconsciously in the mind of a professional accountant to a machine such as a computer in a manner that is explicitly understandable to the computer. That is why we are providing explicit names such as "fact set" and "slot" and "concept arrangement pattern" and "member arrangement pattern".

Disclosure Mechanics

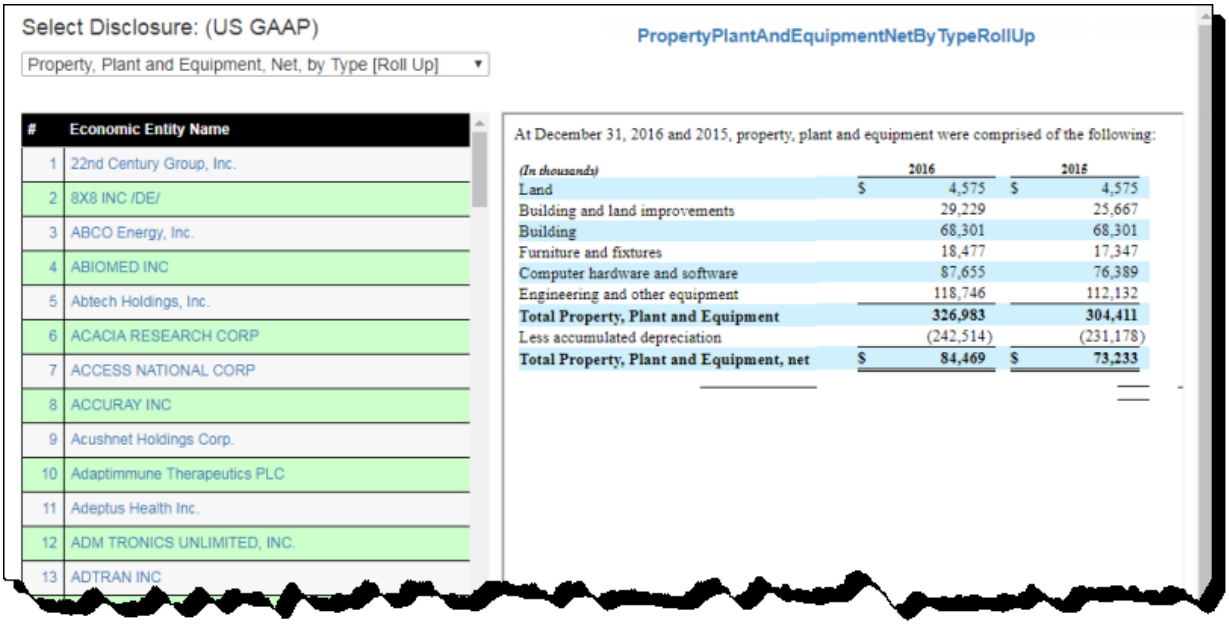
Consider the two disclosures that I showed you before again. Think about the following questions:

- How often would the property, plant, and equipment components roll up be a roll up? Clearly 100% of the time. If you wanted to represent a roll forward, that is a different disclosure.
- How often would the total of the roll up of the components of property, plant, and equipment be the concept such as "us-gaap:PropertyPlantAndEquipmentNet" or some similar alternative concept? Clearly 100% of the time.
- How often would concepts such as Land, Buildings, Furniture and Fixtures, Computer Equipment and such be included within the total? Well, that actually depends on what subcategories of property, plant, and equipment an economic entity actually has. But often those concepts would be used. How often would these subclasses of PPE be used to represent the subcategories of inventory? Never.

- If the line item property plant and equipment was reported on the balance sheet, what is the probably that the subcategories would be de disclosed?
- If property, plant and equipment is disclosed, what is the probably that the estimated useful lives of the subclasses of property, plant and equipment were also disclosed? Pretty high.

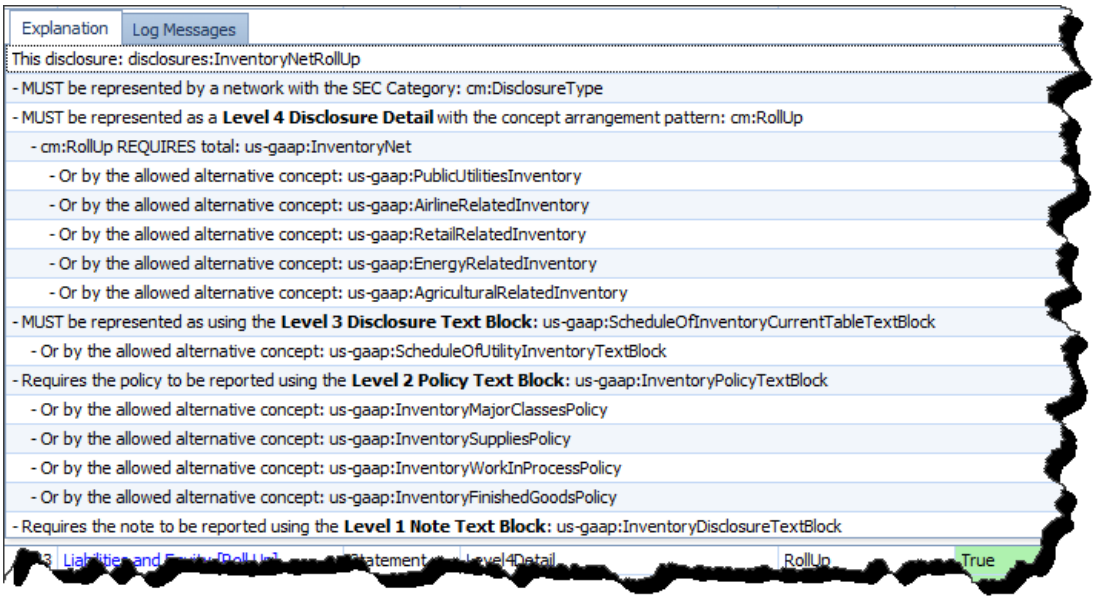
Reporting Entity [Axis]	SAMP http://www.SampleCompany.com	
Legal Entity [Axis]	Consolidated Entity [Member]	
Unit [Axis]	USD	
	Period [Axis]	
Assets, by Component [Line Items]	2020-12-31	2019-12-31
Property, Plant and Equipment [Roll Up]		
Land	5,347,000	1,147,000
Buildings, Net	244,508,000	366,375,000
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
Property, Plant and Equipment, Net, Total	295,183,000	413,441,000

Consider the same questions above and the inventory components roll up disclosure. Consider the same question and the many other disclosures that exist within a financial report. Consider the prototype below[13]:

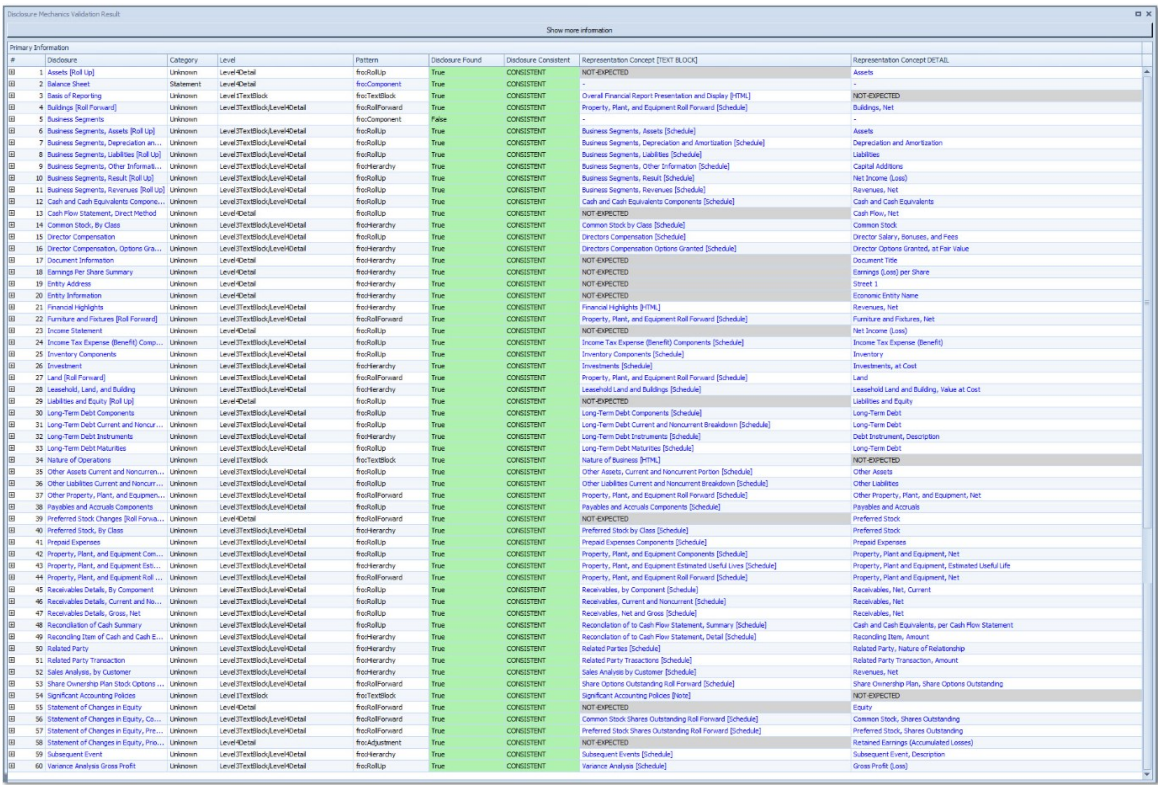


[13] *Disclosure Best Practices*, http://xbrlsite-app.azurewebsites.net/DisclosureBestPractices/DisclosureBestPractices.aspx?DisclosureName=PropertyPlantAndEquipmentNetByTypeRollUp

These patterns are not unique to US GAAP, they also exist for IFRS and other reporting schemes. These patterns can be represented in machine-readable rules. For example, here are machine-readable rules that relate to the inventory components disclosure required under US GAAP.



Apply the same ideas that we are discussing for the property, plant and equipment components disclosure and the inventory components disclosure to other disclosures represented within a report:



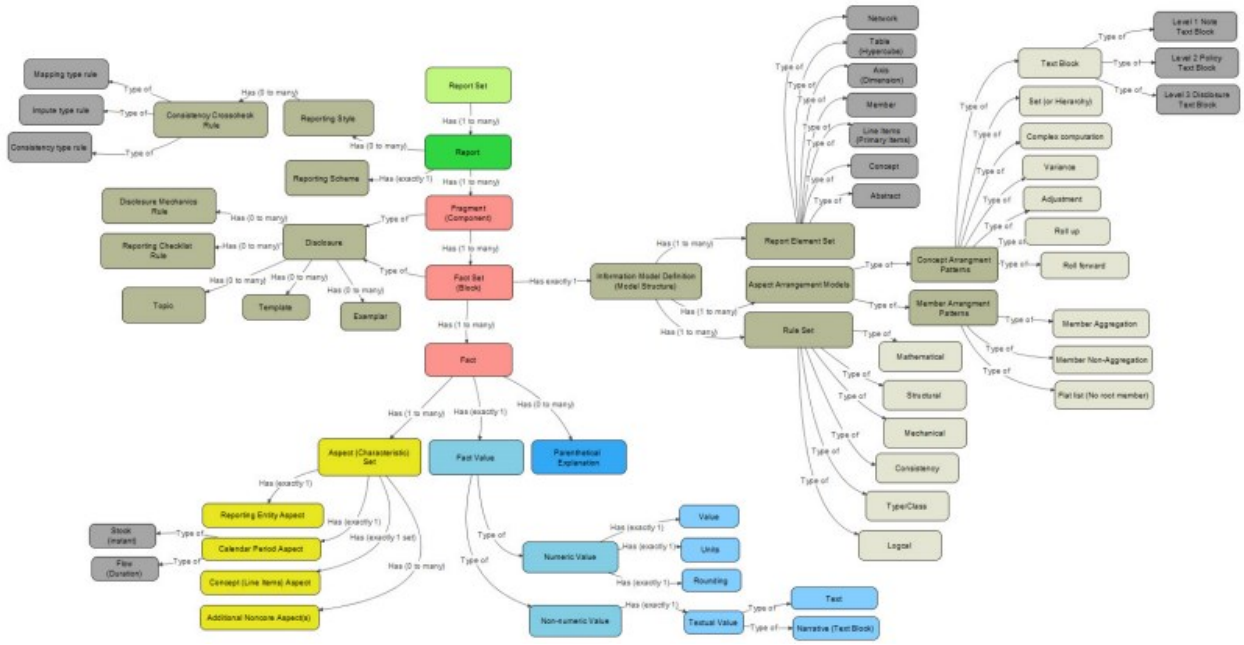
These techniques can be applied to each and every fact set that exists within an XBRL-based financial report. Report creation workflows can take advantages of the ability to identify and work with specific fact sets that exist.

What's in a Name?

If you think about what it takes to make the sorts of things I am discussing in this document you recognize that if you cannot refer to something, you cannot work with that thing. The object "fact set" is given a name. The disclosures that are represented by such a fact set are given a name. The templates and exemplars (examples) that are used to represent a disclosure are associated with that name. As I laid out in the document *Computer Empathy*[14], if you know how to lay out information in machine-readable form you can make a computer seemingly perform magic.

Fact Set only Part of Larger Conceptual Model

The fact set is only a small but important piece of a much larger conceptual model[15]. That conceptual is leveraged to work with the pieces of an XBRL-based financial report to effectively work with the report at a logical level rather than at a technical level. Once the technical aspects are buried deep within software, business users working with software only have to deal with logic, which then innately understand.



[14] Charles Hoffman, CPA, *Computer Empathy*, http://xbrlsite.azurewebsites.net/2018/Library/ComputerEmpathy.pdf

[15] Charles Hoffman, CPA and Rene van Egmond, *Introduction to the Conceptual Model of a Digital Financial Report*, http://xbrlsite.azurewebsites.net/2017/IntelligentDigitalFinancialReporting/Part02_Chapter05.1_IntroductionToTheConceptualModelOfDigitalFinancialReport.pdf

Human and Computer Collaboration

Today's software for creating XBRL-based financial reports knows very little about the financial report, the disclosures that go into a financial report, etc. This will change. Just like a calculator is used by a professional accountant to do math, software in the future will be as easy to use as a calculator and will serve the needs of professional accountants.

Conclusion

Deloitte created the notion of that they call *The Finance Factory*[16] to "package" these ideas of digital accounting, reporting, auditing, and analysis. One type of practical knowledge is **know-how**; how to accomplish something. Fact sets are a technique which can be leveraged to build pieces of *The Finance Factory*. While some of the ideas of The Finance Factor seem far-fetched; they really are not as far-fetched as they might seem if you have the know-how to actually make technology work to serve you.

Other Helpful Resources

The following is a set of additional resources that are likely helpful:

- ***Guide to Building an Expert System for Creating Financial Reports***[17]: Detailed description of a software implementation that leverages the method articulated in this document.
- ***Blueprint for Creating Zero-Defect XBRL-based Digital Financial Reports***[18]: Explains how to use automated and manual processes professional accountants need to evaluate and measure the quality of an XBRL-based financial report.
- ***Method of Implementing a Standard Digital Financial Report Using the XBRL Syntax***[19]: This document strives to illuminate the structure and dynamics of a financial report for software engineers.
- ***Theoretical and Mathematical Underpinnings of a Financial Report***[20]: Points out how I have been able to leverage the theoretical and mathematical underpinnings of a

[16] *Deloitte's Vision: The Finance Factory*, http://xbrl.squarespace.com/journal/2019/2/20/deloittes-vision-the-finance-factory.html
[17] *Guide to Building an Expert System for Creating Financial Reports*, http://xbrlsite.azurewebsites.net/2018/Library/GuideToBuildingAnExpertSystemForCreatingFinancialReports.pdf
[18] *Blueprint for Creating Zero-Defect XBRL-based Digital Financial Reports*, http://xbrlsite.azurewebsites.net/2017/Library/BlueprintForZeroDefectDigitalFinancialReports.pdf
[19] Charles Hoffman, CPA and Rene van Egmond, *Method of Implementing a Standard Digital Financial Report Using the XBRL Syntax*, http://xbrlsite.azurewebsites.net/2019/Library/MethodForImplementingStandardFinancialReportUsingXBRL.pdf
[20] *Theoretical and Mathematical Underpinnings of a Financial Report*, http://xbrlsite.azurewebsites.net/2018/Library/TheoreticalAndMathematicalUnderpinningsOfFinancialReport.pdf

financial report to detect and leverage patterns that exist in financial reports that might not be apparent to most software engineers.

- ***Intelligent XBRL-based Digital Financial Reporting***[21]: Everything you would ever want to know about intelligent XBRL-based digital financial reporting in one place.

Prototypes

A basic prototype business report provides a very basic example which helps you get your head around the notion that a financial report is a set of fact sets.

Raw XBRL: http://xbrlsite.azurewebsites.net/2018/Prototypes/LoremIpsum/basic-SampleInstance_WithFormulas.xml

Inline XBRL: http://xbrlsite.azurewebsites.net/2018/Prototypes/LoremIpsum/basic-SampleInstance_WithFormulas.html

Human Readable Validation Report:
http://xbrlsite.azurewebsites.net/2018/Prototypes/LoremIpsum/evidence-package/

A more advance prototype provides insight into the more sophisticated business rules that are used to control the variability of a report. This prototype was created using the *Method of Implementing a Standard Digital Financial Report Using the XBRL Syntax*[22]. Step-by-step documentation is provided for creating this XBRL taxonomy and the related XBRL instance[23].

Raw XBRL: http://xbrlsite.azurewebsites.net/2016/conceptual-model/reporting-scheme/ipsas/taxonomy/company-instance-TestDynamic.xml

Human Readable Validation Report: http://xbrlsite.azurewebsites.net/2019/Library/Core/evidence-package/

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[21] *Intelligent XBRL-based Digital Financial Reporting*, http://xbrl.squarespace.com/intelligent-xbrl/
[22] Charles Hoffman, CPA and Rene van Egmond, *Method of Implementing a Standard Digital Financial Report Using the XBRL Syntax*, http://xbrlsite.azurewebsites.net/2019/Library/MethodForImplementingStandardFinancialReportUsingXBRL.pdf
[23] *International Public Sector Accounting Standards XBRL Taxonomy Prototype Project*, http://xbrl.squarespace.com/journal/2019/1/16/international-public-sector-accounting-standards-xbrl-taxono.html