1. Mastering XBRL-based Digital Financial Reporting Examples

The purpose of this section is to provide the reader with a series of XBRL base taxonomies and XBRL-based reports that starts small, grows incrementally, and gradually evolves into a sophisticated XBRL-based digital financial report. The reasoning behind this series of examples is to provide you with nuances and subtleties related to XBRL-based financial reporting but do this in a step-by-step approach that makes absorbing the material easier.

1.1. Mastering Examples

This section walks you through an older set of examples that get increasingly complex. These examples are summarized on the **Mastering XBRL-based Digital Financial Reporting web page**[1]. XBRL files can be downloaded from that web page.

Another similar version of this information is provided via the *Information and Exercises for Corporate Reporting Class*[2].

To get the most out of these examples the reader is encouraged to have gone through the following documents which are referenced on the web page above:

- *Essence of Accounting*
- *Artificial Intelligence and Knowledge Engineering Basics in a Nutshell*
- *Special Theory of Machine-based Automated Communication of Semantic Information of Financial Statements*
- *Logical Theory Describing Financial Report*
- Standard Business Report Model (SBRM)
- Digital Financial Reporting

Each of these examples has videos, documentation, all of the XBRL files, supporting information which helps you understand the example, and other such helpful information.

Each example has key ideas that it tries to convey. It is strongly recommended that you proceed through the examples in order to get the most out of this process.

Two video playlists are extremely helpful to consolidating this information in one's mind. The first is **Understanding the Financial Report Logical System**[3]. The second is **Mastering XBRL-based Digital Financial Reporting**[4].

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[1] Mastering XBRL-based Digital Financial Reporting, http://xbrlsite.azurewebsites.net/2020/master/

[2] Information and Exercises for Corporate Reporting Class, http://xbrl.squarespace.com/journal/2020/9/30/information-and-exercises-for-corporate-financial-reporting.html

[3] YouTube.com, *Understanding the Financial Report Logical System*, https://www.youtube.com/playlist?list=PLqMZRUzQ64B7EWamzDP-WaYbS_W0RL9nt

[4] YouTube.com, *Mastering XBRL-based Digital Financial Reporting*, https://www.youtube.com/playlist?list=PLqMZRUzQ64B44jXcayBd2jIZp8o2ei6is

Critically important to keep in the back of your mind as you work through this information is the notion of process control[5] and process problems that cause errors[6]. In order to be able to automate accounting, reporting, auditing, and analysis tasks and processes those processes need to be controlled.

1.1.1.Accounting Equation

The Accounting Equation[7] example helps you understand the notion of a logical system and the difference between a system that is properly functioning and a system that is not functioning properly. Properly functioning is determined in terms of whether the system is consistent, complete, and precise.

The accounting equation example is comprised of three simple terms (Assets, Liabilities, Equity); a functional term (Balance sheet); and one rule (Assets = Liabilities and Equity). This logical system has 3 facts. Visually, you can see the entire system:
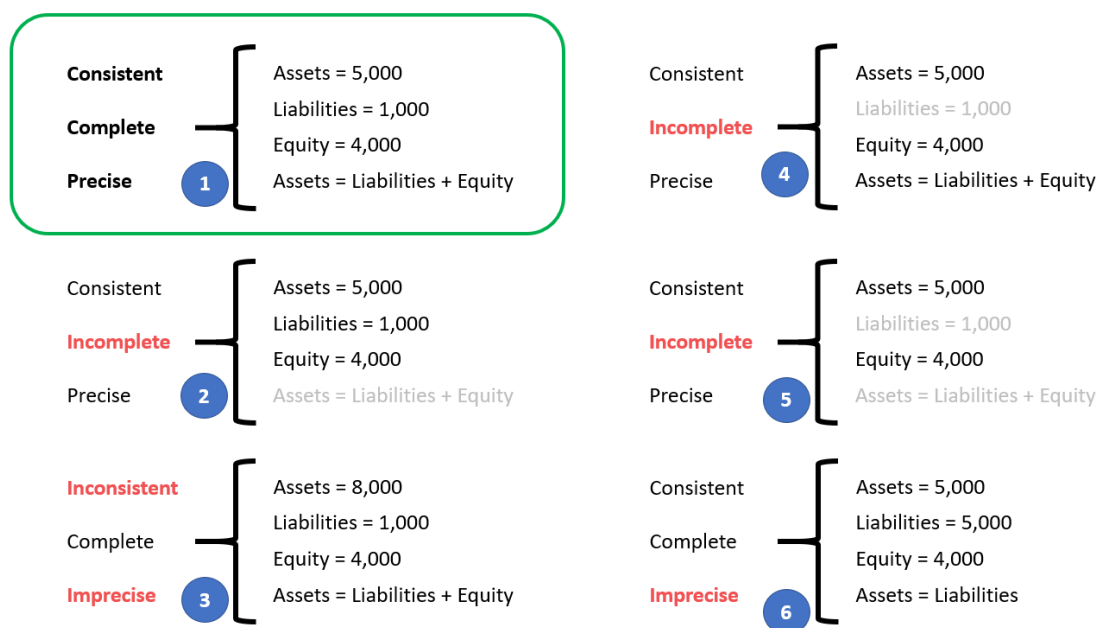

Simply by looking at this very small system you can see that the system is properly functioning because it is consistent, complete, and precise. But what if something goes wrong?

Below you see the properly functioning state #1 outlined in green and five other possible states of this same system.

1
- Consistent
- Complete
- Precise

Assets = 5,000
Liabilities = 1,000
Equity = 4,000
Assets = Liabilities + Equity

4
- Consistent
- Incomplete
- Precise

Assets = 5,000
Liabilities = 1,000
Equity = 4,000
Assets = Liabilities + Equity

2
- Consistent
- Incomplete
- Precise

Assets = 5,000
Liabilities = 1,000
Equity = 4,000
Assets = Liabilities + Equity

5
- Consistent
- Incomplete
- Precise

Assets = 5,000
Liabilities = 1,000
Equity = 4,000
Assets = Liabilities + Equity

3
- Inconsistent
- Complete
- Imprecise

Assets = 8,000
Liabilities = 1,000
Equity = 4,000
Assets = Liabilities + Equity

6
- Consistent
- Complete
- Imprecise

Assets = 5,000
Liabilities = 5,000
Equity = 4,000
Assets = Liabilities

Work through this documentation and you will understand what a logical system is, how to determine if it is properly functioning, and the kinds of things that can go wrong with this specific small logical system. Although the accounting equation is small, it has all the characteristics of a logical system.

1.1.2. SFAC 6 Elements of Financial Statements

The FASB's SFAC 6 Elements of Financial Statements[8] example builds on the Accounting Equation example, expanding it for the set of 10 elements defined by the Financial Accounting Standards Board (FASB) that is part of the conceptual framework for US GAAP financial reporting.

The purpose of this example is to solidify the critically important notions of what a logical system is, what "consistent", "complete", and "precise" mean, the meaning of properly functioning logical system, and the sorts of things that can go wrong with a logical system.

Again, this logical system is small enough to get your head around and easy to create using the XBRL technical syntax.

In this example, 10 simple terms are defined, three functional terms, two rules, and 13 facts are provided.

All of this information can be represented in machine readable terms using XBRL. Represented in human readable form, it looks like the following:

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[8] SFAC 6 Elements of Financial Statements,
http://xbrlsite.azurewebsites.net/2020/master/sfac6/index.html

Consistent

Complete

Precise

Assets = $3,500^{T1}$; 0^{T0}

Liabilities = 0^{T1}; 0^{T0}

Equity = $3,500^{T1}$; 0^{T0}

Revenues = 7,000

Expenses = 3,000

Gains = 1,000

Losses = 2,000

Comprehensive income = 3,000

Investments by Owners = 1,000

Distributions to Owners = 500

Assets = Liabilities + Equity

Comprehensive Income = Revenues - Expenses + Gains - Losses

$Equity^{T1} = Equity^{T0} + Comprehensive$ $Income^{P1} + Investments$ by $Owners^{P1} – Distributions$ to $Owners^{P1}$

Balance Sheet

Balance Sheet [Abstract]	Period [Axis]	
	2020-12-31	2019-12-31
Balance Sheet [Abstract]		
Assets	3,500	0
Liabilities	0	0
Equity	3,500	0

Changes in Equity

Changes in Equity [Abstract]	Period [Axis]
	2020-01-01 - 2020-12-31
Changes in Equity [Abstract]	
Equity [Roll Forward]	
Equity, Beginning	0
Comprehensive Income	3,000
Investments by Owners	1,000
(Distributions to Owners)	(500)
Equity, Ending	3,500

Income Statement

Comprehensive Income Statement [Abstract]	Period [Axis]
	2020-01-01 - 2020-12-31
Comprehensive Income Statement [Abstract]	
Comprehensive Income [Roll Up]	
Revenues	7,000
(Expenses)	(3,000)
Gains	1,000
(Losses)	(2,000)
Comprehensive Income	3,000

While this properly functioning logical system that is consistent, complete, and precise is a good example of a system; what is even more important in this example is understanding the sorts of things that can go wrong.

The document *Distinguishing Between Properly and Improperly Functioning Logical Systems*[9] and three videos that walk you through the information in that document: *Impediments Part 1*[10], *Impediments Part 2*[11], and *Impediments Part 3*[12]. Note that all of these videos are part of the *Understanding the Financial Report Logical System* video play list referenced earlier.

The SFAC 6 Elements of Financial Statements example introduces the idea of the "model" and how disclosure mechanics rules can be used to specify what makes up a disclosure and finally the notion of disclosure rules (i.e. reporting checklist). These ideas are expanded on in further examples.
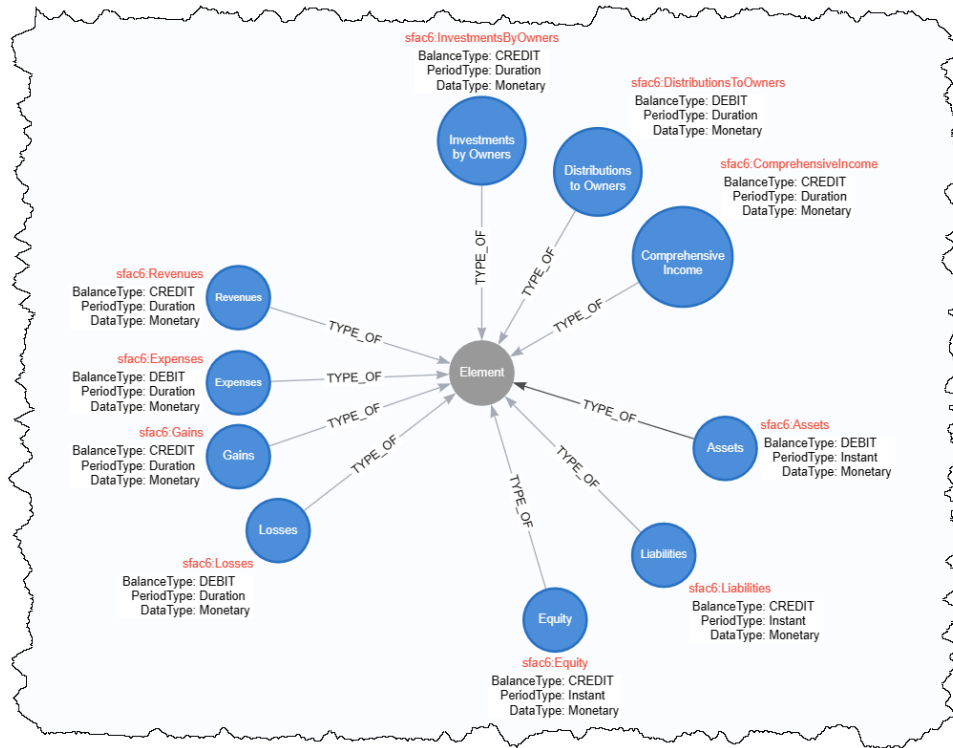
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[9] Distinguishing Between Properly and Improperly Functioning Logical Systems, http://xbrlsite.azurewebsites.net/2020/master/sfac6/SFAC6-Impediments.pdf

[10] YouTube.com, *Impediments – Part 1*, https://youtu.be/ntBV0lRkui8

[11] YouTube.com, *Impediments – Part 2*, https://youtu.be/xi17OmdL1SA

[12] YouTube.com, *Impediments – Part 3*, https://youtu.be/tZL4zNxWgiQ

Elements[13]:

Statements[14]:

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[13] Arrows, Elements, https://arrows.app/#/googledrive/ids=1Cnugibjhv1ZH4XbV-7BVPX05vX81HCt9
[14] Arrows, Statements, https://arrows.app/#/local/id=S79azi5XKTQXQgvkbRTg
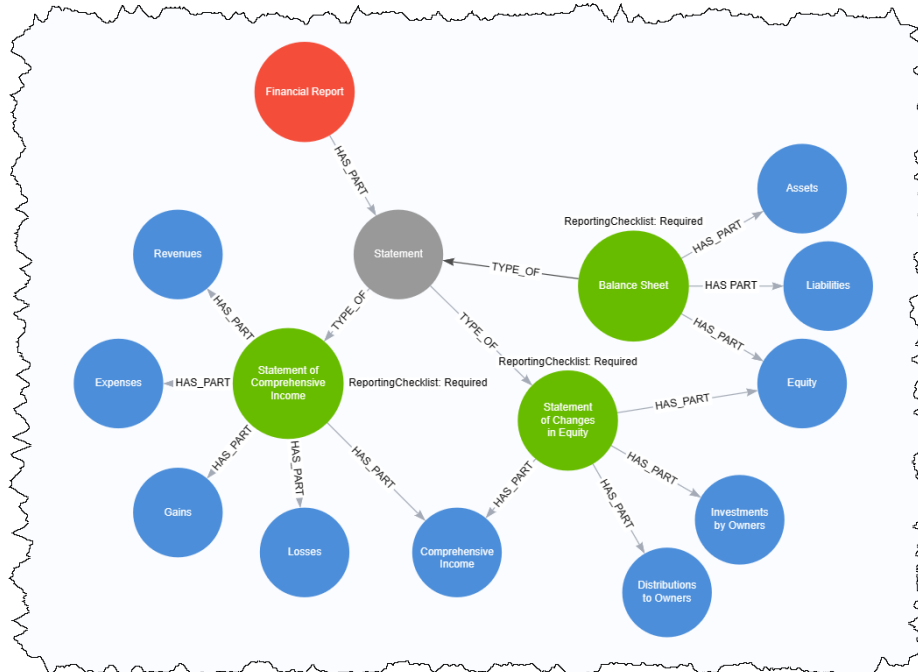
1.1.3. SFAC 6 Elements of Financial Statements PLUS

The FASB's SFAC 6 Elements of Financial Statements PLUS[15] example expands the SFAC 6 example 10 simple terms slightly by adding 7 additional not-for-profit related terms which are actually defined by SFAC 6 but were left out of that first SFAC 6 example so that we could focus on the notion of a logical system.

Recall the accounting equation: "Assets = Liabilities + Equity".

Not-for-profit financial reporting adjusts that base accounting equation and uses this equation: "Net Assets = Assets - Liabilities".

Essentially, for profit and not-for-profit financial reporting use different models. Both models can be expressed using the XBRL format.

1.1.4. Common Elements of Financial Statements

The Common Elements of Financial Statements[16] example expands the SFAC 6 example 10 simple terms slightly by adding 16 additional terms such that we can create something that begins to look more like a financial statement. One key notion that we want to emphasize in this example is the notion of articulation, the interconnectedness of the four core primary financial statements:

Further, we want to point out that the ideas of a "logical system" and that such logical systems can be "properly functioning" and that to be properly functioning, that logical system must be "consistent" and "complete" and "precise" are all still very much applicable.

However, as you can see that as the size of the logical system grows, it becomes increasingly challenging to understand visually what is going on with that system. Here are the terms, structures, associations, and rules of the common elements of financial statement logical system example shown visually:

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[15] SFAC 6 Elements of Financial Statements PLUS,
http://xbrlsite.azurewebsites.net/2020/master/sfac6plus/index.html
[16] Common Elements of Financial Statements,
http://xbrlsite.azurewebsites.net/2020/master/common/index.html

Four Statement Model (Common Elements of Financial Report)
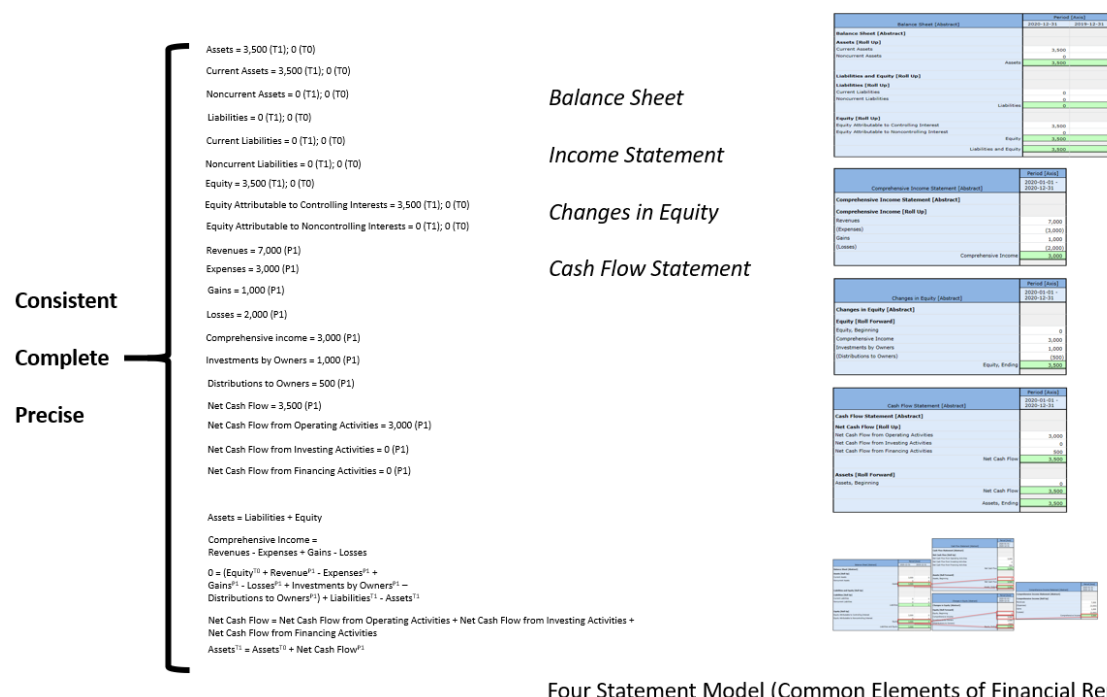
As such, it becomes easy to see that some sort of tool is necessary to enable an accounting professional working with this information to be able to understand what is going on within such a logical system.

Further, as we have pointed out in previous examples; having an understanding of the sorts of things that can go wrong help you understand the types of tools that are necessary to work with this information.

If you have not done so already, I would encourage you to explore the XBRL Cloud Evidence Package[17] which is provided for each of these examples as a way of understanding and interacting with this machine-readable information.

1.1.5. Proof

The Proof[18] example expands the SFAC 6 example slightly to add all the common information patterns that you will tend to find within a financial report.

As is explained, a financial report is not one big thing; rather it is a collection of lots of little things. An analysis of a set of 6,023 XBRL-based financial reports submitted to the SEC by public companies revealed:

- Total reports: 6,023
- Total facts reported: 8,532,275
- Average number of facts per report: 1,416
- Total number of networks in all reports: 462,786
- Average number of networks per report: 77

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[17] XBRL Cloud Evidence Package, http://xbrlsite.azurewebsites.net/2020/master/common/evidence-package/

[18] Proof, http://xbrlsite.azurewebsites.net/2020/master/proof/index.html

- Total number of fact sets in all reports: **754,430**

- Average number of fact sets per report: 125

- Average number of fact sets per network: 1.6

- Average facts per network: 18

- Average facts per fact set: 11

And so, the notion of a "fragment" of a report is introduced as well as the notion of the "fact set" which is simple a set of facts which go together. Of the **754,430** Fact Sets found in the 6,023 reports that I interrogated using automated machine-based processes, there were:

- **Text Blocks**: 407,392 (54%) are text blocks (Level 1 Notes, Level 2 Policies, Level 3 Disclosures)

- **Sets**: 181,063 (24%) are sets (or hierarchies, no mathematical computations)

- **Roll Ups**: 120,708 (16%) are roll ups

- **Roll Forwards**: 37,721 (5%) are roll forwards

- Other (including **Roll Forward Info**, **Adjustment**, **Variance**): 7,546 (1%) are Roll Forward Infos or something else

The point here is that there are a distinct set of information models that you will run across in an XBRL-based financial report and each of those types of information models are represented in the Proof example.

Secondly, each of those information models may interact with other information models in a report. Expanding on the notion of "articulation" introduced in other examples the Proof both describes this interconnectedness and proves that the XBRL-based representations are working effectively and logically to convey financial information of the report as can be seen by this graphic:
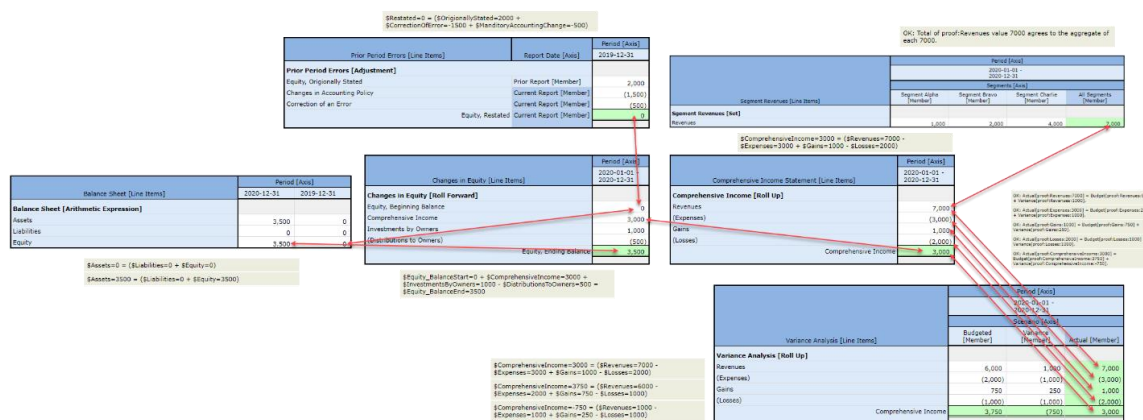
Essentially, the Proof example helps you understand the patterns of information you will run across in an XBRL-based financial report and how to properly represent those information patterns effectively and appropriately so that you can be sure each report is a properly functioning logical system. Every financial report, even say the Microsoft 10-K for 2017[19] which contains 194 fact sets that fall into this set of information

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[19] Microsoft XBRL-based Report Analysis, http://xbrl.squarespace.com/journal/2020/4/13/microsoft-xbrl-based-report-analysis.html

models. That includes US GAAP-based reports, IFRS-based reports, and financial reports of any other financial reporting scheme as you will see in forthcoming examples.

1.1.6. Proof + Common + Render

The Proof + Common + Render[20] example expands the Common Elements of Financial Statements and the Proof example by (a) combining the two examples into one comprehensive example and (b) creating an automatically generated pixel perfect renderings for each information model represented in this example.

While all of the information in the XBRL-based financial report for this example can be understood by humans reading auto-generated renderings of each disclosure there are many times when such an auto-generated rendering is not desirable. With just a bit of additional work, more information can be provided to a software application which would enable that software application to generate a "pixel perfect rendering". For example, here is the auto-generated rendering of the variance from budget disclosure[21]:

	Period [Axis]		
	2020-01-01 - 2020-12-31		
	Scenario [Axis]		
Variance Analysis [Line Items]	Budgeted [Member]	Variance [Member]	Actual [Member]
Variance Analysis [Roll Up]			
Revenues	6,000	1,000	7,000
(Expenses)	(2,000)	(1,000)	(3,000)
Gains	750	250	1,000
(Losses)	(1,000)	(1,000)	(2,000)
Comprehensive Income	3,750	(750)	3,000

It should be pretty easy to imagine that the above rendering could be changed such that the rendering below could be automatically generated as HTML or Inline HTML as is shown below[22]:

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[20] Proof + Common + Render, http://xbrlsite.azurewebsites.net/2020/master/proof-common-render/index.html

[21] Variance from budget auto-generated rendering, http://xbrlsite.azurewebsites.net/2020/master/proof-common-render/evidence-package/contents/index.html#Rendering-VarianceAnalysis-proof_VarianceAnalysisHypercube.html

[22] Inline XBRL pixel perfect rendering, http://xbrlsite.azurewebsites.net/2020/master/proof-common-render/instance-RENDERED.html

Variance from Budget
ABC Company, Inc.

(in US Dollars) As of December 31, 2020	Budgeted	Variance	Actual
VARIANCE FROM BUDGET			
Revenues	$6,000	$1,000	$7,000
Expenses	(2,000)	(1,000)	(3,000)
Gains	750	250	1,000
Losses	(1,000)	(1,000)	(2,000)
Comprehensive income	$3,750	$(750)	$3,000

Alternatively, rather than generating HTML or Inline XBRL, a PDF rendering could be generated which might look something like below[23]:

Variance from Budget
ABC Company, Inc.

(US Dollars) As of December 31, 2020	Budgeted	Variance	Actual
VARIANCE FROM BUDGET			
Revenue	$6,000	$1,000	$7,000
Expenses	-2,000	-1,000	-3,000
Gains	750	250	1,000
Losses	-1,000	-1,000	-2,000
Comprehensive income	$3,750	$-750	$3,000

The above PDF rendering was generated by first generating XSL-FO[24] and then running that XSL-FO through a freely available open source XSL-FO processor or FOP[25].

Finally, the notion of process control is introduced and disclosure mechanics rules and disclosure rules (i.e. reporting checklist) and how they are used to control and monitor the report creation process:

Primary Information

#	Disclosure	Category	Level	Pattern	Disclosure Found	Disclosure Consistent	Applicable	Representation Concept [TEXT BLOCK]	Representation Concept DETAIL
1	Assets Roll Forward	Unknown	Level4Detail	RollForward	True	CONSISTENT	True	NOT-EXPECTED	Assets
2	Assets Roll Up	Unknown	Level4Detail	RollUp	True	CONSISTENT	True	NOT-EXPECTED	Assets
3	Balance Sheet	Unknown	UNKNOWN	Component	True	CONSISTENT	True	-	-
4	Basis of Reporting	Unknown	Level1TextBlock	TextBlock	True	CONSISTENT	True	Basis of Reporting [Text Block]	NOT-EXPECTED
5	Cash Flow Statement	Unknown	UNKNOWN	Component	True	CONSISTENT	True	-	-
6	Changes in Equity	Unknown	Level4Detail	RollForward	True	CONSISTENT	True	NOT-EXPECTED	Equity
7	Financial Highlights	Unknown	Level4Detail	Hierarchy	True	CONSISTENT	True	NOT-EXPECTED	Revenues
8	Income Statement	Unknown	Level4Detail	RollUp	True	CONSISTENT	True	NOT-EXPECTED	Comprehensive Income
9	Income Statement Alternative	Unknown	Level4Detail	RollUp	True	CONSISTENT	True	NOT-EXPECTED	Comprehensive Income
10	Liabilities and Equity Roll Up	Unknown	Level4Detail	RollUp	True	CONSISTENT	True	NOT-EXPECTED	Liabilities and Equity
11	Nature of Operations	Unknown	Level1TextBlock	TextBlock	True	CONSISTENT	True	Nature of Operations [Text Block]	NOT-EXPECTED
12	Net Assets Roll Up	Unknown	Level4Detail	RollUp	True	CONSISTENT	True	NOT-EXPECTED	Net Assets
13	Net Cash Flow Roll Up	Unknown	Level4Detail	RollUp	True	CONSISTENT	True	NOT-EXPECTED	Net Cash Flow
14	Prior Period Errors	Unknown	Level4Detail	Adjustment	True	CONSISTENT	True	NOT-EXPECTED	Equity
15	Revenue Recognition Policy	Unknown	Level1TextBlock	TextBlock	True	CONSISTENT	True	Revenue Recognition Policy [Text Block]	NOT-EXPECTED
16	Segment Revenues	Unknown	Level4Detail	Hierarchy	True	CONSISTENT	True	NOT-EXPECTED	Revenues
17	Stock Plan Activity	Unknown	Level4Detail	RollForwardInfo	True	CONSISTENT	True	NOT-EXPECTED	Nonvested Fair Value
18	Variance Analysis	Unknown	Level4Detail	RollUp	True	CONSISTENT	True	NOT-EXPECTED	Comprehensive Income

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[23] PDF pixel perfect rendering, http://xbrlsite.azurewebsites.net/2020/master/proof-common-render/instance.pdf

[24] XSL-FO used to generate PDF rendering, http://xbrlsite.azurewebsites.net/2020/master/proof-common-render/instance.fo.xml

[25] Apache.org, FOP, https://xmlgraphics.apache.org/fop/

While the Proof and other examples might seem to be small "toys" that have no relation to a real financial report; nothing can be further from the truth. Each example is deliberately and precisely created to test and communicate specific ideas. Again, you can use these same ideas as has been done below to test 94.8% of the Microsoft 2017 10-K[26]. The 5.2% difference relates to Microsoft's use of extension concepts.

This is not just true for Microsoft. Apple, Amazon, Google, Facebook, and Saleforce all work the same way[27]; as does every US GAAP and IFRS based financial report submitted to the Securities and Exchange Commission.

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[26] Microsoft XBRL-based Report Analysis, http://xbrl.squarespace.com/journal/2020/4/13/microsoft-xbrl-based-report-analysis.html

[27] Software Companies Prototype, http://xbrl.squarespace.com/journal/2020/4/2/software-companies-prototype.html

1.1.7.Trial Balance

The Trial Balance[28] example the SFAC 6 example and presents information that helps one understand the connection between an accounting system, internal financial reporting, and external financial reporting.

The example provides the four core financial statements, a roll forward for every balance sheet account (real accounts), and introduces the notion of a roll forward transaction code which enables each of the roll forwards and the statement of cash flows to be automatically generated from accounting system information.

Trial balance:

Trial Balance [Roll Up]	Period [Axis]	
	2018-12-31	2017-12-31
Trial Balance [Roll Up]		
Cash and Cash Equivalents	4,000	3,000
Receivables	2,000	1,000
Inventories	1,000	1,000
Property, Plant and Equipment	6,000	1,000
Accounts Payable	(1,000)	(1,000)
Long-term Debt	(6,000)	(1,000)
Retained Earnings	(6,000)	(4,000)
Check Sum	0	0

Roll forward transaction codes:
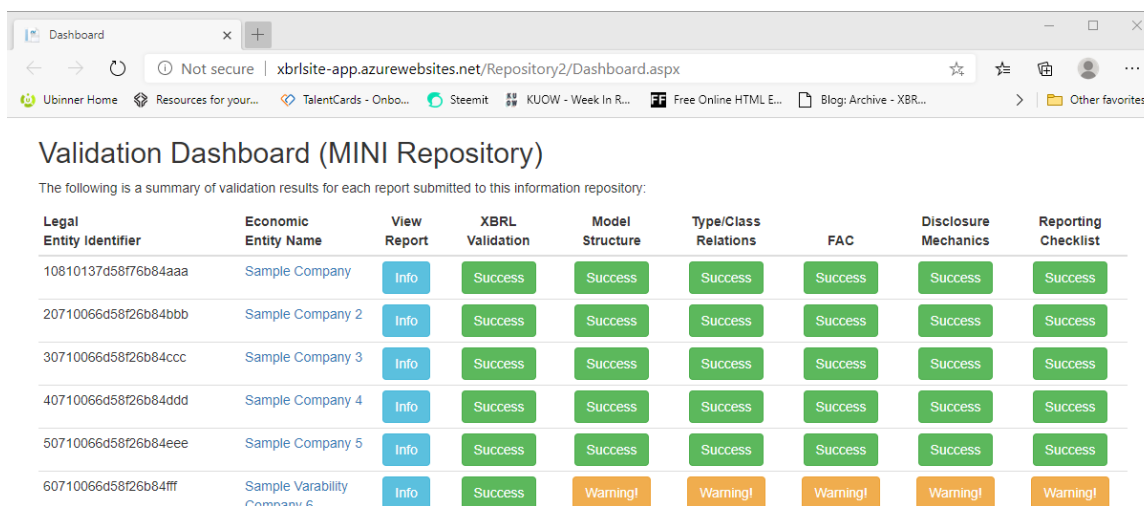
Changes Summary [Roll Up]	Period [Axis]
	2018-01-01 - 2018-12-31
Changes Summary [Roll Up]	
Collection of Receivables	3,000
Payment of Accounts Payable	(2,000)
Additional Long-term Borrowings 2	6,000
Repayment of Long-term Borrowings 2	(1,000)
Capital Additions of Property, Plant and Equipment 2	(5,000)
Sales 2	4,000
Collection of Receivables 2	(3,000)
Additions to Allowance for Bad Debts	0
Bad Debts Written Off	0
Purchases of Inventory for Sale	2,000
Costs of Sales 2	(2,000)
Inventory Written Off	0
Capital Additions of Property, Plant and Equipment	5,000
Depreciation and Amortization 2	0
Property, Plant and Equipment Written Off	0
Purchases of Inventory for Sale 2	(2,000)
Payment of Accounts Payable 2	2,000
Additional Long-term Borrowings	(6,000)
Repayment of Long-term Borrowings	1,000
Net Income (Loss)	(2,000)
Check Sum Changes	0

This example also helps XBRL taxonomy creators to think about the relation between a financial report taxonomy and an internal taxonomy that might interact with an internal accounting system or reporting function.

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[28] Trial Balance, http://xbrlsite.azurewebsites.net/2020/master/tb/index.html

1.1.8. MINI Financial Reporting Scheme

The MINI Financial Reporting Scheme[29] builds on the ideas that we have presented thus far and creates an entire financial reporting scheme, an XBRL taxonomy that is used to represent that financial reporting scheme, several example financial reports that use that reporting scheme, a repository that contains those financial reports, and prototype analysis tools to extract information from the reports that use that reporting scheme.

Note that several inconsistencies where intentionally introduced within one report in order to demonstrate the impact of such inconsistencies.

The notions of type-subtype relations is introduced as are the notions of templates and exemplars.

Note that this MINI financial reporting scheme does not make use of XBRL dimensions and does not contain 100% of the information models introduced in the Proof example.

1.1.9. XASB Financial Reporting Scheme

The XASB Financial Reporting Scheme[30] builds on the ideas that we have presented thus far and creates an entire financial reporting scheme, an XBRL taxonomy that is used to represent that financial reporting scheme, several example financial reports that use that reporting scheme, a repository that contains those financial reports, and prototype analysis tools to extract information from the reports that use that reporting scheme.

What makes this different than the MINI financial reporting scheme is that the XASB reporting scheme introduces the use of XBRL Dimensions, the base XBRL taxonomy is appropriately modularized for reuse of the taxonomy for creating extension XBRL taxonomies, and there is a greater number of terms and disclosures.

This XASB reporting scheme is significantly larger than the MINI reporting scheme, it covers 100% of the information model patterns introduced in the Proof example, it

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[29] MINI Financial Reporting Scheme,
http://xbrlsite.azurewebsites.net/2019/Prototype/mini/documentation/Index.html
[30] XASB Financial Reporting Scheme, http://xbrlsite.azurewebsites.net/2020/reporting-scheme/xasb/documentation/Index.html

uses XBRL dimensions in a best-practices manner, templates and exemplars are used, a large number of disclosures are used, and this example truly looks and works like a real financial reporting scheme would work.

The disclosure mechanics rules were verified for each of the disclosures within the reference implementation which tests this financial reporting scheme[31]:

Essentially, this is about as real as it gets; but this XASB financial reporting scheme does not hamstring those creating XBRL instances which can be the case with the real US GAAP and IFRS financial reporting XBRL taxonomies. This is a great training tool.

1.1.10. Not-for-Profit Financial Reporting (US GAAP)

The Not-for-Profit Financial Reporting (US GAAP)[32] example uses the general ideas conveyed in this document and embraces the Logical Description of Financial Report which builds on the forthcoming OMG Standard Business Report Model (SBRM).

All things considered, this XBRL taxonomy is likely the best representation of an XBRL taxonomy in this set of examples.

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[31] XBRL-based Disclosure Mechanics Validation Results, http://xbrlsite.azurewebsites.net/2020/reporting-scheme/xasb/reference-implementation/DisclosureMechanicsResults.jpg

[32] Not-for-Profit Financial Reporting (US GAAP), http://xbrlsite.azurewebsites.net/2020/reporting-scheme/nfp/documentation/Index.html

1.1.11. IPSAS Financial Reporting Scheme

The IPSAS Financial Reporting Scheme[33] example is a small working proof-of-concept fir International Public Sector Accounting Standards. The primary benefit of this example is to show that any financial reporting scheme can be represented using this best practice approach.

While this example works, other examples are better for learning and testing.

1.1.12. US GAAP Financial Reporting Scheme (Prototype)

The US GAAP Financial Reporting Scheme (Prototype)[34] is a working proof-of-concept that builds on the US GAAP XBRL Taxonomy issued by the FASB, adding missing pieces that make the US GAAP XBRL Taxonomy work more effectively. This working proof-of-concept is the basis for many of the initial ideas created and then documented within this document.

This prototype is based on extensive testing, used by a number of commercial products for actual XBRL-based reports submitted to the SEC, is the basis for the quarterly quality control checks which I have done for years[35], and has been used with many actual XBRL-based reports submitted to the SEC.

Essentially, all prior examples are used to build up your understanding of this XBRL taxonomy prototype.

Note that there are working disclosure mechanics rules for about 70 common disclosures, fundamental accounting concept relations (consistency cross checks) for about 98% of public companies that report using US GAAP, and many other functional components. On the down side, in order to test 100% of a report it is necessary to build out the needed disclosure rules.

1.1.13. IFRS Financial Reporting Scheme (Prototype)

The IFRS Financial Reporting Scheme (Prototype)[36] is a working proof-of-concept that builds on the ideas of the IFRS XBRL Taxonomy issued by the IFRS Foundation, adding missing pieces that make the IFRS XBRL Taxonomy work more effectively.

This prototype was tested using 406 IFRS filers to the SEC. The rules used by this XBRL taxonomy prototype are not as extensive as those provided by the US GAAP XBRL Taxonomy.

1.1.14. FRF for SMEs Financial Reporting Scheme (Prototype)

The FRF for SMEs Financial Reporting Scheme (Prototype)[37] is a working proof-of-concept that was the basis for many of the ideas in this document. The FRF for SMEs

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[33] IPSAS Financial Reporting Scheme, http://xbrlsite.azurewebsites.net/2020/reporting-scheme/ipsas/documentation/Index.html

[34] US GAAP Financial Reporting Scheme (Prototype), http://xbrlsite.azurewebsites.net/2020/reporting-scheme/us-gaap/documentation/Index.html

[35] Quarterly XBRL-based Public Company Financial Report Quality Measurement (March 2019), http://xbrl.squarespace.com/journal/2019/3/29/quarterly-xbrl-based-public-company-financial-report-quality.html

[36] IFRS Financial Reporting Scheme (Prototype), http://xbrlsite.azurewebsites.net/2020/reporting-scheme/ifrs/documentation/Index.html

[37] FRF for SMEs Financial Reporting Scheme (Prototype), http://xbrlsite.azurewebsites.net/2016/conceptual-model/reporting-scheme/frf-sme/documentation/Index.html

prototype is an earlier prototype which for now has been abandoned at this time. This may be revised later.

A primary benefit of this prototype is to show that all financial reporting schemes could use this approach to represent an XBRL taxonomy.

Reporting Scheme	US GAAP issued by FASB	IFRS issued by IASB	FRF for SMEs issued by AICPA	IPSAS issued by IPSASB	GAS issued by GASB
Assets	Assets	Assets	Assets	Assets; Other Resources	Assets and Deferred Inflow of Resources
Liabilities	Liabilities	Liabilities	Liabilities	Liabilities; Other Obligations	Liabilities and Deferred Outflow of Resources
Equity or Net Assets	Equity (or Net Assets)	Equity (or Net Assets)	Equity (or Net Assets)	Net Financial Position	Net Position
Comprehensive Income	Comprehensive Income	Income and Expenses	Net income	Surplus or Deficit	Change in Net Position
Investments by Owners	Investments by Owners	Contributions from Holders of Equity Claims	Investments by Owners	Ownership Contributions	Increase in Net Position (Implied)
Distributions to Owners	Distributions to Owners	Distributions to Holders of Equity Claims	Distributions to Owners	Ownership Distributions	Decrease in Net Position (Implied)
Revenues	Revenues	Income	Revenues	Revenues	Inflow of Resources
Expenses	Expenses	Expenses	Expenses	Expenses	Outflow of Resources
Gains	Gains		Gains		
Losses	Losses		Losses		

1.1.15. Continuous Accounting

The Continuous Accounting[38] example is a working proof-of-concept which connects accounting, reporting, auditing, and analysis tasks and processes. This example extends to *Accounting Process Automation, Record to Report (R2R) Plus!*[39] example adding an open source accounting system to that process. This example demonstrates how to effectively connect, control, and monitor specific tasks and processes using XBRL:

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[38] Continuous Accounting, http://xbrlsite.azurewebsites.net/2020/master/continuous-accounting/index.html

[39] Accounting Process Automation, Record to Report (R2R) Plus!, http://xbrlsite.azurewebsites.net/2020/master/automation/index.html

A more tangible graphic that shows the tasks and processes that tend to be used to create internal or external financial reports is shown below: