

1. Analysis of 6,751 XBRL-based Public Company 10-Ks Submitted to SEC

XBRL-based digital financial reports are made up of many, many distinct and identifiable pieces. These pieces are related to other pieces in specific and identifiable ways.

1.1. Analysis of 6,751 XBRL-based financial reports

An analysis of 6,751 publically available XBRL-based financial reports¹ provided by public companies to the U.S. Securities and Exchange Commission (SEC) revealed the information which is contained in this document. The purpose of the analysis was to determine the explicit parts of a digital financial report. This analysis used mainly commercially available software provided by XBRL Cloud and SECXBRL.info to perform this analysis data. Information was summarized and reported using Microsoft Access databases and Excel spreadsheets to format information.

Information in this document generally resulted for direct queries to a relational database, XML files (info sets), or commercially available APIs which contained information about the pieces of these reports. The results of this analysis should be repeatable by others.

The document *Understanding the Mechanics of an SEC-type XBRL-based Digital Financial Report*² summarizes and explains the pieces of an SEC-type XBRL-based digital financial report and how they relate to one another.

The document *Terminology of a Financial Report*³ is a set of logical axioms which are written in human readable pseudo code and tries to formally articulate these rules in a concise controlled natural language form. The next step is to covert the pseudo code into finite first-order logic semantics and syntax.

This information is important because it helps software vendors understand how to implement helpful functionality within software to help business professionals using that software create digital financial reports which are consistent with the description of such a report.

1.2. Evaluation against minimum criteria

The following table is a summary of the results of this testing for the current year of 2014 with comparison information provided for 2013 and 2012⁴.

¹ Understanding Public Company XBRL-based Financial Report Quality
<http://xbrl.squarespace.com/journal/2015/4/7/understanding-public-company-xbrl-based-financial-report-qua.html>

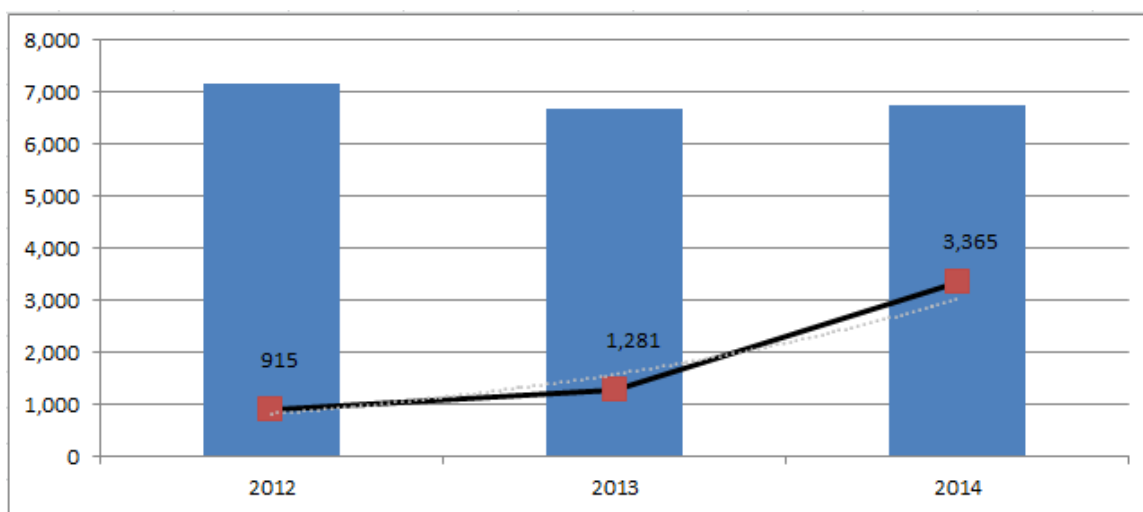
² *Understanding the Mechanics of an SEC-type XBRL-based Digital Financial Report*,
<http://www.xbrlsite.com/2015/Library/UnderstandingTheMechanicsOfAnSECTypeDigitalFinancialReport.pdf>

³ *Terminology of a Financial Report*,
<http://www.xbrlsite.com/2015/Library/TerminologyOfFinancialReport.pdf>

⁴ See explanation of minimum criteria in *Arriving at 2014 Digital Financial Reporting All Stars: Summary*,
http://www.xbrlsite.com/2015/Library/AnalysisSummary2014_ArrivingAtDigitalFinancialReportingAllStars.pdf

Minimum Processing Steps Measure	2014⁵	2013⁶	2012⁷
Financial reports analyzed (10-Ks for the fiscal year)	6,751	6,674	7,160
Number of “All Stars” (reports consistent with rules)	3,365	1,281	915
Percent of “All Stars” (percent of total which are consistent)	50%	19%	13%

The following chart shows the change in the number of “All Stars” (XBRL-based public company financial reports consistent with all of the minimum criteria consistency tests):



There were two significant differences between testing of 2014 10-K submissions and testing of the prior year 2013 10-K submissions which are worth noting. The first difference is that commercially available software was used for testing of the current 2014 10-K submissions. In the prior year, what can best be described as a mixture of commercial software and working prototype software was used for testing. The second difference was the introduction of report frames for evaluating fundamental accounting concept relations consistency. Report frames or reporting pallets are explained in the document, *Summary Information about Conformance with Fundamental Accounting Concept Relations*⁸.

The following is a summary of the 2014 results for each category of the minimum criteria with comparable information for 2013 and 2012:

⁵ Set is made up of 10-K submissions to the SEC between April 1, 2014 and March 31, 2015.

⁶ See results of 2013 testing, http://www.xbrl.org/2014/Library/AnalysisSummary_ArrivingAtDigitalFinancialReportingAllStars.pdf

⁷ See results of 2012 testing, <http://xbrl.squarespace.com/journal/2014/3/13/set-of-915-digital-financial-reporting-all-stars.html>

⁸ *Summary Information about Conformance with Fundamental Accounting Concept Relations*, <http://www.xbrl.org/2014/Library/SummaryInformationAboutConformanceWithFundamentalAccountingConceptRelations.pdf>

INTELLIGENT DIGITAL FINANCIAL REPORTING – PART 5: IMPORTANT TECHNICAL AND OTHER DETAILS – ANALYSIS OF 6,751 XBRL-BASED PUBLIC COMPANY 10-Ks SUBMITTED TO SEC – CHARLES HOFFMAN, CPA AND RENE VAN EGMOND

#	Goal or Desired State	Process tests	FY 2014	FY 2013	FY 2012
1	XBRL: Consistent XBRL technical syntax	Automated XBRL technical syntax consistency checks	99.9%	99.9%	99.9%
2	EFM: Consistent with EDGAR Filer Manual (EFM) syntax/semantics	Automated EFM syntax and semantics consistency checks	81.9%	97.9%	80.5%
3	Report Level Model Structure: Consistent report level structure	Automated report model structure consistency checks	98.2%	95.8%	97.9%
4	Root Entity: Detectable economic entity or accounting entity or "entity of focus"	Successful and unambiguous identification of the "entity of focus"	99.5%	99.2%	98.8%
5	Key Periods: Detectable and unambiguous current period balance sheet and income statement period dates	Successful and unambiguous identification of the current balance sheet date and income statement period	99.3%	98.6%	99.8%
6	FAC: Detectable and unambiguous set of fundamental reported facts and intact relations between those fundamental facts which is consistent with expectation	Automated consistency checks to be sure fundamental accounting concepts are distinguishable and the relations between those fundamental concepts are intact/sound	98.7%	97.8%	97.9%
7	PFS: Detectable basic primary financial statements	Automated detection of balance sheet, income statement, and cash flow statement	88.7%	87.8%	NOT TESTED
8	PFS Roll Ups: Detectable basic primary financial statement roll up computations are intact which prove trustworthy nature of information (actual computation not tested, only existence of business rules)	Automated verification checks for existence of business rules which articulate these basic primary financial statement relations	92.0%	90.5%	84.9%
9	Reporting Units: Detectable reporting units of reporting entity.	Automated detection of proper reporting units of reporting entity.	NOT TESTED	NOT TESTED	NOT TESTED

Each category of the minimum criteria shows improvement except for consistency with EFM rules.

1.3. Report

There were 6,751 reports analyzed⁹. All reports were the last 10-K submitted to the SEC between April 1, 2014 and March 31, 2015 by a reporting entity (economic entity):

Reports
6,751

Fiscal Year Focus and Fiscal Period Focus

Each of the 6,751 reports analyzed had an identifiable *fiscal year focus* and *fiscal period focus*:

Fiscal Year Focus	Fiscal Period Focus	Count	Percent of total filings
2014	FY	5,806	86.0%
2013	FY	847	12.5%
2015	FY	36	0.5%
2014	Q4	35	0.5%
2012	FY	15	0.2%
2013	Q4	6	0.1%
2011	FY	2	0.0%
2014	Q2	1	0.0%
2013	Q1	1	0.0%
2013	CY	1	0.0%
	FY	1	0.0%
Total		6,751	100.0%

The one row with no fiscal year focus is a bug in software, the value is provided; however, the value is reported using the wrong period.

Economic entities can pick their own fiscal year focus per the EFM. Economic entities are required to use specific fiscal period focus as described in EFM 6.5.21 which states “***Note: 10-Q’s for the 1st, 2nd and 3rd quarters should have a fiscal period focus of Q1, Q2, and Q3 respectively, and a 10-K should have fiscal period focus of FY.” Since all of the reports are 10-Ks, then every report which uses Q4, Q2, Q1 or CY for their 10-K is not reporting the information correctly.

As such, all the items in YELLOW appear to be errors in filings.

⁹ List of reports analyzed, http://www.xbrlsite.com/2015/Analysis/Analysis_Reports6751.zip

1.4. Reporting units

Within the 6,751 reports analyzed; the reporting units¹⁰ used with to report financial information consisted of the following:

Reporting units	Count	Percent of total filings
iso4217:USD	6,734	99.75%
iso4217:CAD	11	0.16%
iso4217:AUD	2	0.03%
iso4217:EUR	2	0.03%
iso4217:CHF	1	0.01%
iso4217:CNY	1	0.01%
Total	6,751	100.00%

1.5. Economic entity

Within the 6,751 reports analyzed; each report was for exactly 1 economic entity (accounting entity, reporting entity, SEC EFM calls this the “default legal entity”. The economic entity is defined in two ways:

- The value of the xbrli:entity/xbrli:identifier (all values in the report are required to be the same per EFM rule 6.5.3)
- The value of the dei:EntityCentralIndexKey fact (in what the SEC EFM calls the “required context”; per rule 6.5.23)

Economic entities have an *entity filer category* (required by SEC EFM, but for some reason 10 filers do not provide this fact):

Entity Filer Category	Total filings per category	Percent of total filings
Smaller Reporting Company	2,939	43.5%
Large Accelerated Filer	1,904	28.2%
Accelerated Filer	1,300	19.3%
Non-accelerated Filer	598	8.9%
NOT PROVIDED	10	0.1%
Total	6,751	100.0%

Economic entities have a *current fiscal year end* (required by SEC EFM, but for some reason 1 filer does not provide this fact):

¹⁰ See ISO 4217 currency codes, http://en.wikipedia.org/wiki/ISO_4217

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Entity Fiscal Year End	Count	Percent of total filings
--12-31	4,722	69.9%
--06-30	349	5.2%
--09-30	290	4.3%
--03-31	237	3.5%
--01-31	128	1.9%
--10-31	103	1.5%
--08-31	95	1.4%
--04-30	91	1.3%
--07-31	89	1.3%
--05-31	89	1.3%
--11-30	59	0.9%
--01-03	59	0.9%
--02-28	58	0.9%
--12-28	57	0.8%
--12-27	49	0.7%
--02-01	36	0.5%
--09-27	23	0.3%
--06-28	13	0.2%
--03-30	13	0.2%
--03-29	12	0.2%
--06-29	11	0.2%
--09-28	11	0.2%
--12-26	10	0.1%
--01-02	9	0.1%
--09-26	9	0.1%
--12-30	9	0.1%
--02-02	8	0.1%
--06-27	7	0.1%
Not provided	1	0.0%
All other (generally 52/53 week YE)	104	1.5%
Total	6,751	100.0%

Economic entities have one of 422 different *SIC codes*:

SIC	Description	Count	Percent of total filings
2834	PHARMACEUTICAL PREPARATIONS	372	5.51%
1311	CRUDE PETROLEUM AND NATURAL GAS	261	3.87%
6022	STATE COMMERCIAL BANKS	236	3.50%
7372	SERVICES-PREPACKAGED SOFTWARE	210	3.11%
6798	REAL ESTATE INVESTMENT TRUSTS	208	3.08%
7389	SERVICES-BUSINESS SERVICES, NEC	186	2.76%
6770	BLANK CHECKS	147	2.18%
6021	NATIONAL COMMERCIAL BANKS	136	2.01%
3841	SURGICAL AND MEDICAL INSTRUMENTS AND APPARATUS	116	1.72%
3674	SEMICONDUCTORS AND RELATED DEVICES	115	1.70%
1000	METAL MINING	113	1.67%
6035	SAVINGS INSTITUTION, FEDERALLY CHARTERED	110	1.63%
7374	SERVICES-COMPUTER PROCESSING AND DATA PREPARATION	91	1.35%
2836	BIOLOGICAL PRODUCTS, (NO DISGNOSTIC SUBSTANCES)	81	1.20%
6331	FIRE, MARINE AND CASUALTY INSURANCE	75	1.11%
6500	REAL ESTATE	71	1.05%
4911	ELECTRIC SERVICES	65	0.96%

Note that the SIC code is not contained in the XBRL-based financial filing; it is in the SEC RSS feed.

Legal entity type

Entities have a *legal entity type* which can be gleaned based on the metadata which is used to report (for example whether they report common stock or partner capital):

Entity Filer Category	Total filings per category	Percent of total filings
Corporation	6,353	94.1%
Partnership	389	5.8%
Unknown	5	0.1%
Cooperative	2	0.0%
Association	2	0.0%
Total	6,751	100.0%

1.6. Components (Networks and [Table]s)

XBRL-based public company filings to the SEC do not specify how to break a report into components; however, they do provide breakdowns of a report in two ways: using Networks and using [Table]s. The SEC EFM section 6.7.12 explains how Networks are organized, but it does not explain how [Table]s are organized if there is more than one [Table] per Network. Order of XBRL presentation relations can be used to order [Table]s within a network.

Networks

The reports analyzed had a total of 495,825 Networks.

Those networks contained between 1 and 8 explicitly created [Table]s or implied tables meaning that everything that is not grouped into an explicit table is grouped by the Network into one implied table via that Network relation¹¹.

# of Tables	Networks with that number	Percent
1 Table	285,392	57.559%
2 Tables	209,357	42.224%
3 Tables	830	0.167%
4 Tables	153	0.031%
5 Tables	51	0.010%
6 Tables	25	0.005%
7 Tables	14	0.003%
8 Tables	3	0.001%
Total Networks	495,825	100.000%

Network Type and Level of Disclosure

Networks can also be broken out by Type¹² and by level¹³. The following is a breakdown of all Networks by both Type and Level. Note that the YELLOW rows appear to be errors because statement and document information are never reported as text blocks:

¹¹ Reported facts are not “free floating” in space, they exist within some Network. EFM rule 6.12.3 states: “An element used in an instance must participate in at least one effective presentation relationship in the DTS of that instance.” So by definition, every fact participates within at least one network; therefore, it can be implied that networks group facts and that no facts are “free floating”.

¹² Per EFM 6.7.12, “The {Type} must be one of the words ‘Disclosure’, ‘Document’, ‘Schedule’ or ‘Statement’.

¹³ Per EFM 6.6.16, 6.6.17, 6.6.19, 6.6.20, 6.6.22, defines each of the levels

Type	Level	Count of Networks	Average per Report
Document	Detail	6,317	0.94
Statement	Detail	43,611	6.46
Statement	TextBlock_L1	188	0.03
Statement	TextBlock_L2	15	0.00
Statement	TextBlock_L3	155	0.02
Disclosure	TextBlock_L1	110,630	16.39
Disclosure	TextBlock_L2	10,167	1.51
Disclosure	TextBlock_L3	75,674	11.21
Disclosure	Detail	246,772	36.55
Schedule	Detail	1,404	0.21
Document	TextBlock_L1	23	0.00
Document	TextBlock_L3	4	0.00
Schedule	TextBlock_L1	741	0.11
Schedule	TextBlock_L2	1	0.00
Schedule	TextBlock_L3	123	0.02
		495,825	73.44

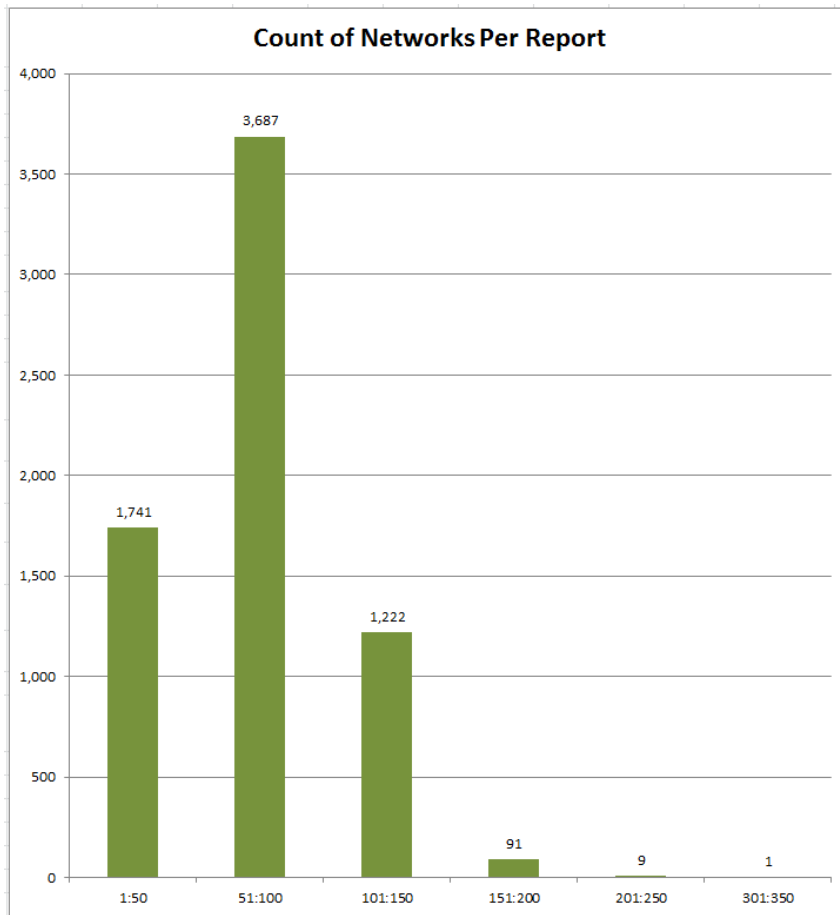
There is no real information which distinguishes between a disclosure and a schedule type. Level 4 Detail and Text Block Levels 1 (Notes), Level 2 (Policies) and Level 3 (Disclosures).

The following breaks Networks out by Detail or the different text block levels. Statements are detail level so detail represents both statements and level 4 detailed disclosures.

Level	Count of Networks	Average per Report
Detail	298,104	44
TextBlock_L1	111,582	17
TextBlock_L2	10,183	2
TextBlock_L3	75,956	11
	495,825	

Text blocks are not provided for document information or the primary financial statements.

Number of networks per report:



The graphic above shows a histogram of the number of networks per report:

Number Of Networks Used Between	Reports With Count	Percent
1:50	1,741	25.79%
51:100	3,687	54.61%
101:150	1,222	18.10%
151:200	91	1.35%
201:250	9	0.13%
301:350	1	0.01%
Total reports	6,751	100.00%

1.7. Facts

The 6,751 financial reports analyzed contain precisely 8,816,913. The following table breaks the facts down by those which use a base US GAAP XBRL Taxonomy concept or an extension concept created by the reporting economic entity:

Type	Count of Facts	Percent of total facts
Base facts	7,404,893	84%
Extension facts	1,412,020	16%
Total	8,816,913	100%

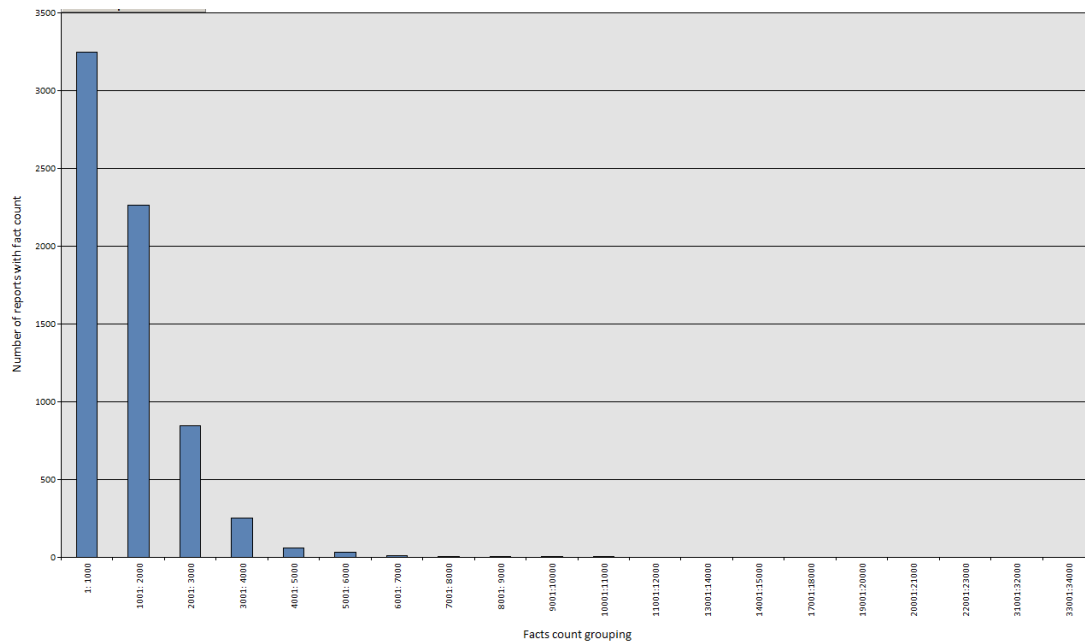
The following table shows average, minimum, and maximum facts per report and per network:

Total reports	6,751
Total networks	495,825
Total facts	8,816,913
Average Networks per Report	73
Average Facts per Report	1,306
Average Facts per Network	18
Minimum facts per report	31
Maximum facts per report	33,216
Minimum networks per report	5
Maximum networks per report	321

Histogram of reported facts, groupings of 1000

The following shows a histogram of the number of facts per report. The histogram groups the number of facts reported into increments of 1000. So, 3,249 reports or 48% of total reports provide between 1 and 1000 reported facts.

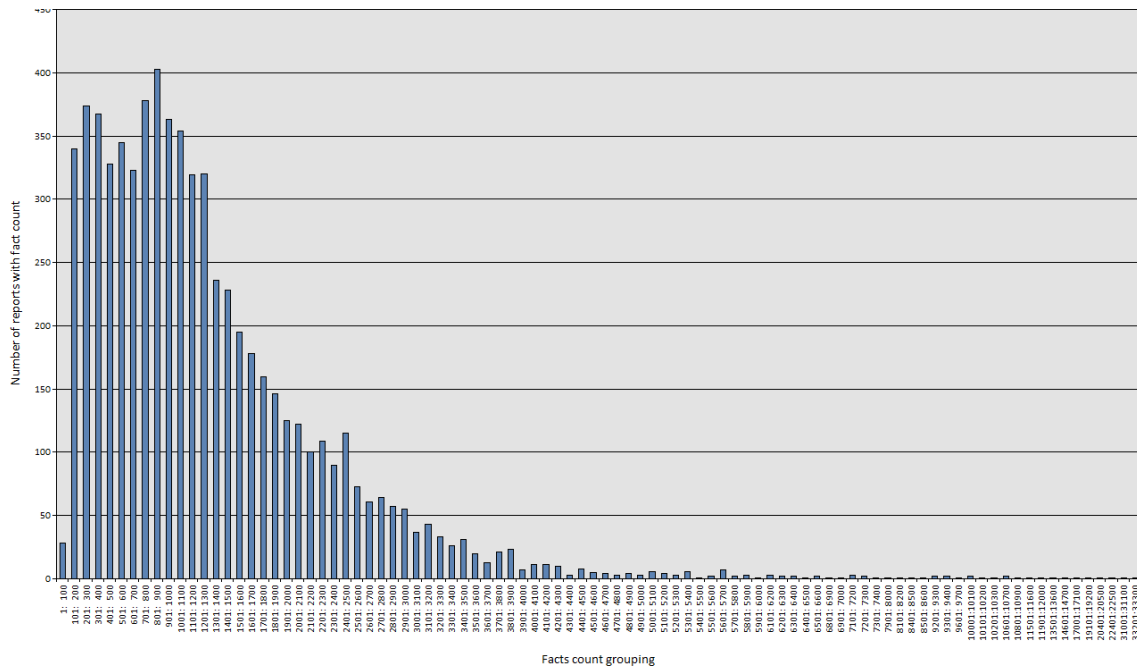
Facts in report between	Count of reports	Percent of total reports
1: 1000	3,249	48%
1001: 2000	2,261	33%
2001: 3000	846	13%
3001: 4000	254	4%
4001: 5000	62	1%
5001: 6000	35	1%
6001: 7000	12	0%
7001: 8000	7	0%
8001: 9000	3	0%
9001:10000	5	0%
10001:11000	7	0%
11001:12000	2	0%
13001:14000	1	0%
14001:15000	1	0%
17001:18000	1	0%
19001:20000	1	0%
20001:21000	1	0%
22001:23000	1	0%
31001:32000	1	0%
33001:34000	1	0%
Total	6,751	100%



Histogram of reported facts, groupings of 100

The chart below groups the range of reported facts into groups of 100. It also shows a cumulative count and percentage. The table shows that 80% of all reports have less than 1900 facts which are reported:

Facts in report between	Count of reports	Percent of total reports	Cumulative Count	Cumulative percent of total
1: 100	28	0.4%	28	0.4%
101: 200	340	5.0%	368	5.5%
201: 300	374	5.5%	742	11.0%
301: 400	367	5.4%	1,109	16.4%
401: 500	328	4.9%	1,437	21.3%
501: 600	345	5.1%	1,782	26.4%
601: 700	323	4.8%	2,105	31.2%
701: 800	378	5.6%	2,483	36.8%
801: 900	403	6.0%	2,886	42.7%
901: 1000	363	5.4%	3,249	48.1%
1001: 1100	354	5.2%	3,603	53.4%
1101: 1200	319	4.7%	3,922	58.1%
1201: 1300	320	4.7%	4,242	62.8%
1301: 1400	236	3.5%	4,478	66.3%
1401: 1500	228	3.4%	4,706	69.7%
1501: 1600	195	2.9%	4,901	72.6%
1601: 1700	178	2.6%	5,079	75.2%
1701: 1800	160	2.4%	5,239	77.6%
1801: 1900	146	2.2%	5,385	79.8%
1901: 2000	125	1.9%	5,510	81.6%
2001: 2100	122	1.8%	5,632	83.4%
2101: 2200	100	1.5%	5,732	84.9%
2201: 2300	109	1.6%	5,841	86.5%
2301: 2400	90	1.3%	5,931	87.9%
2401: 2500	115	1.7%	6,046	89.6%
2501: 2600	73	1.1%	6,119	90.6%
2601: 2700	61	0.9%	6,180	91.5%
2701: 2800	64	0.9%	6,244	92.5%
2801: 2900	57	0.8%	6,301	93.3%
2901: 3000	55	0.8%	6,356	94.1%
3001: 3100	37	0.5%	6,393	94.7%
3101: 3200	43	0.6%	6,436	95.3%
3201: 3300	33	0.5%	6,469	95.8%



1.8. Blocks

A block¹⁴ is a subset of a component that has exactly one concept arrangement pattern. A concept arrangement patterns are relations between the Concepts and Abstracts which make up a set of [Line Items] (primary items). There are 5 clearly identifiable patterns of the arrangements of concepts in the set of 6,751 reports analyzed:

- **Roll up pattern:** identifiable by the existence of XBRL calculations; articulates the relation $\text{Concept A} + \text{Concept B} + \text{Concept N} = \text{Total}$.
- **Roll forward pattern:** identifiable by the beginning and ending preferred label roles; articulates the pattern $\text{Ending balance} = \text{Beginning balance} + \text{Additions} - \text{Subtractions}$.
- **Text blocks:** identifiable by the data type of *nonnum:textBlockItemType* which is used on the concept.
- **Hierarchy:** identifiable because it does not fit either of the previous four patterns. Note that there could be other patterns (in fact I know of two other patterns but they are used very rarely)

While blocks really relate to a component, I am relating them to network because I have a better count of networks currently. The following table shows the number of roll ups, roll forwards, text blocks, hierarchies, and total blocks.

Networks	Roll Ups	Roll Forwards	Hierarchies	Text Blocks	Total Blocks	Blocks per Network
495,825	122,274	40,845	180,403	410,908	754,430	1.5
	16%	5%	24%	54%	100%	

¹⁴ See pages 11 and 12 of *Understanding the Mechanics of an SEC-type XBRL-based Digital Financial Report*, <http://www.xbrlsite.com/2015/Library/UnderstandingTheMechanicsOfAnSECTypeDigitalFinancialReport.pdf#page=11>

1.9. Primary Financial Statement Form

Each of the 6,751 reports analyzed contained primary financial statements. Automated processes were able to successfully detect the balance sheet, income statement (or combined income statement and statement of comprehensive income), and cash flow statement of each report.

Balance Sheet Form

Each of the 6,751 reports analyzed contained a balance sheet and the balance sheet had one of two forms:

Balance sheet form	Count of reports	Percent of total reports
Classified	5,226	77%
Unclassified	1,525	23%
Total	6,751	100%

Income Statement Form

Each of the 6,751 reports analyzed contained an income statement which had one of two forms. The category UNKNOWN relates to special income statement formats used by certain entities, processing is not handling this correctly (basically interest based revenues, insurance based revenues, and securities based revenues are not handled properly yet):

Income statement form	Count of reports	Percent of total reports
Multi-step	3,424	51%
Single-step	2,679	40%
UNKNOWN	648	10%
Total	6,751	100%

Cash Flow Statement Form

Each of the 6,751 reports analyzed contained a cash flow statement and every cash flow statement had exactly the same form.

Statement of Changes in Equity

The statement of changes in equity was not analyzed at this point.

1.10. Report Frames¹⁵

Each of the 6,751 reports analyzed contained primary financial statements and those primary financial statements followed 86 identifiable patterns called report frames or report pallets. 80% of reports fell into only 9 report frames. Note that there were 7 entities which had some unique report frame which has not been provided for at this point.

Report Frame Code	Count of reports using report frame	Percent of total reports	Cumulative Count	Cumulative percent of total
COMID-BSC-CF1-ISM-IEMIX-OILY	1,810	26.81%	1,810	26.8%
COMID-BSC-CF1-ISS-IEMIX-OILY	1,514	22.43%	3,324	49.2%
COMID-BSC-CF1-ISS-IEMIB-OILY	649	9.61%	3,973	58.9%
INTBX-BSU-CF1-ISS-IEMIX-OILN	563	8.34%	4,536	67.2%
COMID-BSC-CF1-ISM-IEMIB-OILY	311	4.61%	4,847	71.8%
COMID-BSC-CF1-ISS-IEMIX-OILN	212	3.14%	5,059	74.9%
COMID-BSU-CF1-ISS-IEMIX-OILN	169	2.50%	5,228	77.4%
COMID-BSC-CF1-ISM-IEMIX-OILN	168	2.49%	5,396	79.9%
COMID-BSC-CF1-ISM-IEMIX-OILN	149	2.21%	5,545	82.1%
COMID-BSC-CF1-ISS-IEMIB-OILN	146	2.16%	5,691	84.3%
COMID-BSU-CF1-ISS-IEMIB-OILY	102	1.51%	5,793	85.8%
INSBX-BSU-CF1-ISS-IEMIX-OILN	83	1.23%	5,876	87.0%
COMID-BSU-CF1-ISS-IEMIX-OILY	76	1.13%	5,952	88.2%
COMID-BSU-CF1-ISM-IEMIX-OILY	72	1.07%	6,024	89.2%
REITX-BSU-CF1-ISS-IEMIX-OILN	61	0.90%	6,085	90.1%
COMID-BSU-CF1-ISS-IEMIB-OILN	61	0.90%	6,146	91.0%
COMID-BSC-CF1-ISS-IEMIN-OILY	61	0.90%	6,207	91.9%
SECBX-BSU-CF1-ISS-IEMIX-OILN	41	0.61%	6,248	92.5%
COMID-BSC-CF2-ISM-IEMIX-OILY	41	0.61%	6,289	93.2%
COMID-BSC-CF1-ISM-IEMIN-OILY	36	0.53%	6,325	93.7%
COMID-BSC-CF1-ISS-IEMIT-OILY	35	0.52%	6,360	94.2%
COMID-BSC-CF1-ISM-IEMIA-OILY	32	0.47%	6,392	94.7%
COMID-BSC-CF1-ISS-IEMIA-OILY	31	0.46%	6,423	95.1%
COMID-BSC-CF1-ISM-IEMIT-OILY	29	0.43%	6,452	95.6%
REITX-BSU-CF1-ISS-IEMIX-OILY	28	0.41%	6,480	96.0%
UTILX-BSC-CF1-ISS-IEMIA-OILN	27	0.40%	6,507	96.4%
REITX-BSU-CF1-ISS-IEMIB-OILY	17	0.25%	6,524	96.6%
COMID-BSC-CF2-ISS-IEMIX-OILN	15	0.22%	6,539	96.9%
COMID-BSU-CF1-ISM-IEMIB-OILY	14	0.21%	6,553	97.1%
SECBX-BSU-CF1-ISS-IEMIX-OILY	14	0.21%	6,567	97.3%
SECBX-BSC-CF1-ISS-IEMIX-OILY	13	0.19%	6,580	97.5%
COMID-BSC-CF2-ISS-IEMIX-OILY	13	0.19%	6,593	97.7%
COMID-BSU-CF1-ISM-IEMIX-OILN	12	0.18%	6,605	97.8%
REITX-BSC-CF1-ISM-IEMIX-OILY	8	0.12%	6,613	98.0%
REITX-BSC-CF1-ISS-IEMIX-OILY	8	0.12%	6,621	98.1%
COMID-BSC-CF1-ISM-IEMIB-OILN	8	0.12%	6,629	98.2%

¹⁵ See page 33 of *Understanding the Mechanics of an SEC-type XBRL-based Digital Financial Report*, <http://www.xbrlsite.com/2015/Library/UnderstandingTheMechanicsOfAnSECTypeDigitalFinancialReport.pdf#page=33>

Accounting activity or industry

The following breaks reporting entities out by accounting activity or industry:

Report Frame Code Component	Count of reports using report frame	Percent of total reports
COMID (Commercial and industrial)	5,824	86.27%
INTBX (Interest based revenues)	563	8.34%
REITX (Real estate investment trust)	154	2.28%
SECBX (Securities based revenues)	91	1.35%
INSBX (Insurance based revenues)	85	1.26%
UTILX (Utility)	27	0.40%
OTHER (Some other format)	7	0.10%
Total	6,751	100.00%

Balance sheet format

The following breaks reporting entities out by balance sheet format:

Report Frame Code Component	Count of reports using report frame	Percent of total reports
BSC (Classified)	5,373	79.59%
BSU (Unclassified)	1,368	20.26%
BSL (Liquidly basis)	3	0.04%
OTHER (Some other format)	7	0.10%
Total	6,751	100.00%

Cash flow statement format

The following breaks reporting entities out by cash flow statement format:

Report Frame Code Component	Count of reports using report frame	Percent of total reports
CF1 (Exchange gains in net cash flow)	6,652	98.53%
CF2 (Exchange gains in roll forward)	92	1.36%
OTHER (Some other format)	7	0.10%
Total	6,751	100.00%

Income statement format

The following breaks reporting entities out by income statement format:

Report Frame Code Component	Count of reports using report frame	Percent of total reports
ISS (Single step, with totals)	4,039	19.94%
ISM (Multi-step)	2,537	12.53%
IS6 (Single step, no total expenses)	168	0.83%
OTHER (Some other format)	7	0.03%
Total	6,751	100.00%

Reporting of income (loss) from equity method investments

The following breaks reporting entities out by where the line item Income (loss) from equity method investments is reported:

Report Frame Code Component	Count of reports using report frame	Percent of total reports
IEMIX (Income from equity method investments not reported)	5,095	75.47%
IEMIB (Income from equity method investments reported before tax)	1,333	19.75%
IEMIN (Income from equity method investments reported as part of nonoperating income (loss))	116	1.72%
IEMIA (Income from equity method investments reported after tax with special report items)	110	1.63%
IEMIT (Income from equity method investments reported as part of income tax expense)	73	1.08%
IEMIR (Income from equity method investments reported as part of revenues)	17	0.25%
OTHER (Some other format)	7	0.10%
Total	6,751	100.00%

Reporting of operating income (loss)

The following breaks reporting entities out by whether the line item Operating income (loss) was or was not reported:

Report Frame Code Component	Count of reports using report frame	Percent of total reports
OILY (Operating income (loss) reported)	4,957	73.43%
OILN (Operating income (loss) not reported)	1,787	26.47%
OTHER (Some other format)	7	0.10%
Total	6,751	100.00%

1.11. Fundamental accounting concepts

Closely related to report frames¹⁶ are fundamental accounting concepts and relations between fundamental accounting concepts. Each report frame has a set of fundamental accounting concepts and relations between concepts. However, most report frames share the majority of relations. The following is a summary of XBRL-based public company financial filings to fundamental accounting concept relations in general:

#	Category	Test Code	Fundamental accounting concept relation	Total filings	Consistent with rule	Consistent %	Inconsistent with rule	Inconsistent %
1	BS	BS1	Equity = Equity Attributable to Parent + Equity Attributable to Noncontrolling Interest	6,751	6,655	98.58%	96	1.42%
2	BS	BS2	Assets = Liabilities and Equity	6,751	6,734	99.75%	17	0.25%
3	BS	BS3	Assets = Current Assets + Noncurrent Assets (classified balance sheet)	6,751	6,393	94.70%	358	5.30%
4	BS	BS4	Liabilities = Current Liabilities + Noncurrent Liabilities (classified balance sheet)	6,751	6,672	98.83%	79	1.17%
5	BS	BS5	Liabilities and Equity = Liabilities + Commitments and Contingencies + Temporary Equity + Redeemable Noncontrolling Interest + Equity	6,751	6,472	95.87%	279	4.13%
6	CF	CF1	Net Cash Flow = Net Cash Flows, Operating + Net Cash Flows, Investing + Net Cash Flows, Financing + Exchange Gains (Losses)	6,751	6,435	95.32%	316	4.68%
7	CF	CF2	Net Cash Flows, Continuing = Net Cash Flows, Operating, Continuing + Net Cash Flows, Investing, Continuing + Net Cash Flows, Financing, Continuing	6,751	6,542	96.90%	209	3.10%
8	CF	CF3	Net Cash Flows, Discontinued = Net Cash Flows, Operating, Discontinued + Net Cash Flows, Investing, Discontinued + Net Cash Flows, Financing, Discontinued	6,751	6,711	99.41%	40	0.59%
9	CF	CF4	Net Cash Flows, Operating = Net Cash Flows, Operating, Continuing + Net Cash Flows, Operating, Discontinued	6,751	6,719	99.53%	32	0.47%
10	CF	CF5	Net Cash Flows, Investing = Net Cash Flows, Investing, Continuing + Net Cash Flows, Investing, Discontinued	6,751	6,738	99.81%	13	0.19%
11	CF	CF6	Net Cash Flows, Financing = Net Cash Flows, Financing, Continuing + Net Cash Flows, Financing, Discontinued	6,751	6,747	99.94%	4	0.06%
12	IS	IS1	Gross Profit = Revenues - Cost Of Revenue (Multi-step approach)	6,751	6,354	94.12%	397	5.88%
13	IS	IS2	Operating Income (Loss) = Gross Profit - Operating Expenses + Other Operating Income (Expenses) (Multi-step approach)	6,751	6,439	95.38%	312	4.62%
14	IS	IS3	Income (Loss) from Continuing Operations Before Equity Method Investments = Operating Income (Loss) + Nonoperating Income (Loss) - Interest And Debt Expense	6,751	6,179	91.53%	572	8.47%
15	IS	IS4	Income (Loss) from Continuing Operations Before Tax = Income (Loss) from Continuing Operations Before Equity Method Investments + Income (Loss) from Equity Method Investments	6,751	6,691	99.11%	60	0.89%
16	IS	IS5	Income (Loss) from Continuing Operations after Tax = Income (Loss) from Continuing Operations Before Tax - Income Tax Expense (Benefit)	6,751	6,334	93.82%	417	6.18%
17	IS	IS6	Net Income (Loss) = Income (Loss) from Continuing Operations After Tax + Income (Loss) from Discontinued Operations, Net of Tax + Extraordinary Items, Gain (Loss)	6,751	6,360	94.21%	391	5.79%
18	IS	IS7	Net Income (Loss) = Net Income (Loss) Attributable to Parent + Net Income (Loss) Attributable to Noncontrolling Interest	6,751	6,351	94.07%	400	5.93%
19	IS	IS8	Net Income (Loss) Available to Common Stockholders, Basic = Net Income (Loss) Attributable to Parent - Preferred Stock Dividends and Other Adjustments	6,751	6,713	99.44%	38	0.56%
20	SCI	IS9	Comprehensive Income (Loss) = Comprehensive Income (Loss) Attributable to Parent + Comprehensive Income (Loss) Attributable to Noncontrolling Interest	6,751	6,605	97.84%	146	2.16%
21	SCI	IS10	Comprehensive Income (Loss) = Net Income (Loss) + Other Comprehensive Income (Loss)	6,751	6,464	95.75%	287	4.25%

Report frames provide a more precise set of relations.

¹⁶ See fundamental accounting concept relations per report frame, <http://www.xbrlsite.com/2015/fro/us-gaap/html/reportFrames/>

1.12. Parenthetical Explanations

The 6,751 reports analyzed contained a total of 27,909 parenthetical explanations (implemented in the form of an XBRL footnote) with an average of 4.1 parenthetical explanations per report.

Reports	Count of Parenthetical Explanations	Blocks per Network
6,751	27,909	4.1

The minimum number of parenthetical explanations was 0 with 61% of all reporting entities reporting no parenthetical explanations, the maximum 303 parenthetical explanations. The following shows a histogram of the number of parenthetical explanations:

Range of Count of Parenthetical Explanations	Count of Reports	Percent of total reports
: 0	4,106	61%
1: 10	1,896	28%
11: 20	378	6%
21: 30	165	2%
31: 40	82	1%
41: 50	47	1%
51: 60	31	0%
61: 70	13	0%
71: 80	7	0%
81: 90	7	0%
91:100	4	0%
101:110	2	0%
111:120	3	0%
121:130	3	0%
131:140	3	0%
141:150	2	0%
151:160	1	0%
301:310	1	0%
Total	6,751	100%

1.13. Going Concern and Developing Stage

Of the 6,751 reports analyzed, 80% had neither going concern issues nor was a developing stage enterprise. 4% had both going concern issues and were developing stage enterprises:

Is Developing Stage	Is Going Concern	Count of Reports	Percent of total reports
NO	NO	5,400	80%
NO	YES	863	13%
YES	YES	301	4%
YES	NO	187	3%
Total		6,751	100%

1.14. Relations between report elements

The 6,751 reports had a total of 6,142,578 relations between report elements which were used to represent the information reported in the XBRL-based financial report. These report elements could be grouped into the following classes or categories:

Relationship perspective: (2014)			
Class	Total relations	Unambiguous relations	Undefined or ambiguous relations
Networks	494,219	494,174	45
Tables	617,897	617,710	187
Axis	475,281	475,280	1
Member	849,704	849,583	121
Lineltms	1,306,473	1,306,376	97
Abstracts	2,387,613	2,387,425	188
Concepts	11,391	11,380	11
Total	6,142,578	6,141,928	650
Percent	100.00%	99.99%	0.01%

Of the total relations, 99.99% of the relations were unambiguous; .01% were ambiguous. The table below shows parent report elements across the top and child report elements in the rows, and the count of the number of relations between the child class and the parent class within the cells of the table:

		2014 10-Ks LAX Model, SEC filers supported						
		Parent						
		Network	Table	Axis	Member	Lineltms	Abstract	Concept
		495,825	211,910	406,005	1,324,898	211,995	742,468	3,245,302
Child	Network	0	0	0	0	0	0	0
	Table	682	0	0	0	5	211,212	11
	Axis	0	405,998	0	0	0	7	0
	Member	4	0	475,280	849,583	2	29	0
	Lineltms	41	211,712	0	0	90	152	0
	Abstract	493,480	168	0	3	100,789	147,603	425
	Concept	12	19	1	118	1,205,587	2,028,610	10,955
		494,219	617,897	475,281	849,704	1,306,473	2,387,613	11,391

RED cells indicate relations rules enforced by XBRL technical syntax validation. Note that all such relations are consistent. GREEN relations are anticipated and unambiguous relations. TAN relations are relations which are anticipated to NEVER exist, and they do not exist because the count in the cell is 0; so these are consistent with expectation. ORANGE cells indicate unexpected relations and therefore are deemed inconsistent. Some of these inconsistent relations to not impact interpretation of information. YELLOW relations are not ambiguous, not generally expected, but don't seem to cause interpretation issues.

1.15. Comparison of report quality by generator

The quality of public company XBRL-based digital financial reports continues to increase. There are two significant trends. First, between 2013 and 2014 overall consistency with all the rules in a set of 21 fundamental accounting concept relationship rules grew to 53.8% from the comparable overall consistency of 25.6% a year ago.

The second trend is that you can see an increasing spread between the quality levels between generators, the software vendors and filing agents which are used to create these XBRL-based digital financial reports. Here is a summary of the current results (for 2014 10-K filings):¹⁷

April 1, 2015 (Final for 2014 10-Ks)					
Generator	Filings Count	Filings With No Errors	Sum Errors (all filings)	Average Errors per Filing	Percent Without Error
Trintech	1	1	0	.0	100%
SAP Disclosure Management	4	3	1	.3	75%
RR Donnelley	947	687	376	.4	73%
Compliance Xpressware	83	55	43	.5	66%
P3 Data Systems	199	131	107	.5	66%
DataTracks	400	247	246	.6	62%
CompSci	413	254	237	.6	62%
Ez-XBRL	331	203	196	.6	61%
Unknown	34	20	25	.7	59%
Rivet	230	135	161	.7	59%
Workiva (WebFilings)	1,925	1,090	1,315	.7	57%
Merrill	476	263	297	.6	55%
Accelus	196	106	135	.7	54%
NeoClarus	93	49	85	.9	53%
Novaworks Software	551	285	455	.8	52%
Oracle	2	1	2	1.0	50%
GoXBRL	269	132	233	.9	49%
QXi	156	75	131	.8	48%
IBM Cognos	100	47	92	.9	47%
Advanced Computer Innovations	323	143	310	1.0	44%
SmartXBRL	5	2	5	1.0	40%
Fujitsu	13	5	11	.8	38%
	6,751	3,934	4,463	.7	
Percent of all filings conforming to all FAC relations		58.3%			

¹⁷ Public Company XBRL Quality Increases Significantly, <http://xbrl.squarespace.com/journal/2015/4/2/public-company-xbrl-quality-increases-significantly.html>

1.16. Quality gap

The table below shows a histogram of issues discovered related to an analysis of the fundamental accounting concepts reported in 2014 to the SEC within XBRL-based financial reports.

The histogram shows that 98.77% of public companies are 5 or fewer fundamental accounting concept inconsistencies away from being 100% consistent with this basic set of accounting relations:

# of Issues per Filing	# of Filings with this Issues Count	Cumulative Number of Filings	% of Total Filings
0	3,365	3,365	49.84%
1	1,729	5,094	75.46%
2	776	5,870	86.95%
3	464	6,334	93.82%
4	223	6,557	97.13%
5	111	6,668	98.77%
6	51	6,719	99.53%
7	15	6,734	99.75%
8	6	6,740	99.84%
10	5	6,745	99.91%
45	1	6,746	99.93%
11	1	6,747	99.94%
15	1	6,748	99.96%
16	1	6,749	99.97%
30	1	6,750	99.99%
32	1	6,751	100.00%

This is the same information shown graphically:

