XBRL US Center for Data Quality:

an industry initiative for the common good

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Summary

Smart businesses often take up causes for the common good such as sustainability, or corporate accountability. That's because many issues that redound to the common good, are also simply good business.

Better quality financial data is one such issue that has been taken up by a market-driven collaborative called the XBRL US Center for Data Quality (Center). This initiative brings together sometimes competing organizations to improve the usability and effectiveness of XBRL-formatted public company financial statement data. While some members of the Center have business stakes in XBRL, the result of the work conducted through the Center is helping to improve the efficiency of U.S. capital markets, benefiting investors, data preparers, regulators, and the public in general.

The Center provides funding for a working group called the Data Quality Committee (DQC) which is tasked with developing standards and guidance enabling issuers to improve their XBRL financial statement filings. Since its launch in 2015, the work of the DQC has resulted in:

- a substantial improvement in the quality and consistency of corporate XBRL financials,
- greater coordination between the XBRL community, standard setters, and regulators like the Financial Accounting Standards Board (FASB), the International Accounting Standards Board (IASB), and the U.S. Securities Exchange Commission (SEC) and,
- heightened regulatory focus on data quality.

Members of the Center today include the American Institute of CPAs (AICPA), Altova, Certent, DataTracks, DFIN, Merrill Corporation (Founding Member), P3 Data Systems, RDG Filings, and Toppan Vintage.

Background

In 2005, the SEC launched a voluntary program to test out the premise of structured data formatting of corporate financial data. That pilot program led to the SEC rule requiring the use of XBRL for public companies that was passed in 2008, with the first filers submitting XBRL exhibits in 2009.

XBRL US built the first two releases of the US GAAP Financial Reporting Taxonomy, under contract with the SEC. In 2010, support and maintenance of the taxonomy was transitioned to the FASB. The FASB began publishing new releases of the taxonomy each year, to accommodate changes in accounting standards, industry revisions, and investor requirements. By 2011, every public company reporting in US GAAP had begun submitting their filings in XBRL format.

In 2010, XBRL US began collecting XBRL corporate data into its own database through an RSS feed of XBRL instance documents made available by the SEC. An analysis of the XBRL-formatted data, reported by public companies, revealed a significant number of inconsistencies, ranging from incorrectly tagging values as negative that should have been positive, to incorrect tagging of dates, to scaling errors. These errors, which resulted in data that contained inaccuracies and that could not be automatically consumed without substantial vetting, were driven by several factors, including 1) the complexity of the US GAAP Financial Reporting Taxonomy, which can lead to multiple ways to tag the same data, 2) a lack of understanding of the US GAAP Taxonomy which can lead to the inappropriate creation of custom elements, and 3) a lack of concrete guidance available to issuers. These issues force preparers to make numerous and often inconsistent tagging decisions, resulting in data that is difficult to consume across companies.

In response to the problems identified in corporate filings, XBRL US began creating consistent, machine-readable rules that can be run automatically against an XBRL filing to identify errors. Searching for potential problems in the XBRL tagging of these filings would be a daunting task to review by hand. For example, Pfizer's most recent 10-K, dated February 22, 2018, contains 3,622 individual reported facts[1]. Automated rules are clearly the most efficient way, **and perhaps the only way,** to provide comprehensive, consistent, automatic checks for issuers to use as a review tool, that until now, had not been available.

However, for the rules to be successful in improving the quality of XBRL data, requires **use of the rules by all public companies**, and therefore by all service providers working with public companies.

In July of 2015, several filing agents, software and service providers, that were members of XBRL US, agreed to fund the ongoing creation and distribution of the validation rules. These founding organizations recognized the importance of establishing a single standard set of rules and guidance that all public companies could freely adopt.

As an industry-led initiative, the Center has the flexibility to make changes and progress more quickly with less bureaucracy than a program led by regulators. The Center is a critical source of support to provide funding for the rules and guidance development, which are created by the Data Quality Committee (DQC).

Strategy

The DQC is comprised of investors, issuers, academics, database and analytical tool providers, as well as filing agents. Organizations represented on the Committee today include the American Institute of CPAs (AICPA), Bloomberg, Calcbench, the CFA Institute, Credit Suisse, idaciti, Merrill Corporation, Morningstar, S&P Global Market Intelligence, Toppan Vintage, and Vanderbilt University; as well as permanent observers from the FASB and the IASB.

[1] Pfizer reported facts include values, text strings, and textblocks.

The committee's primary tasks are:

- Developing clear and unambiguous guidance and rules that are used by filers to flag errors in their XBRL filings, and that provide guidance on how to make corrections.
- Conducting public reviews of the guidance and rules to obtain further input and incorporating that input, where appropriate, in the final approved guidance and validation rules.
- Providing progress updates to SEC staff, and input to FASB staff to improve on the XBRL US GAAP Taxonomy and related resources.

When developing guidance and rules, the DQC focuses on:

1. Meeting the needs of all stakeholders, from SEC filers through to data consumers.
2. Ensuring that guidance and rules are easy to understand, and instructions provided in the rule error messages are clear.
3. Providing sufficient coverage to detect and help issuers resolve as many *types* of errors as possible.

Below are two sample error messages that a filer may receive when running the DQC rules. The first example shows the result of a simple check based on the accounting rule that the value tagged for Assets must equal the value tagged for the elements Liabilities and Equity. The second example shows the result of a rule that clarifies that facts reported for certain concepts must always be positive.

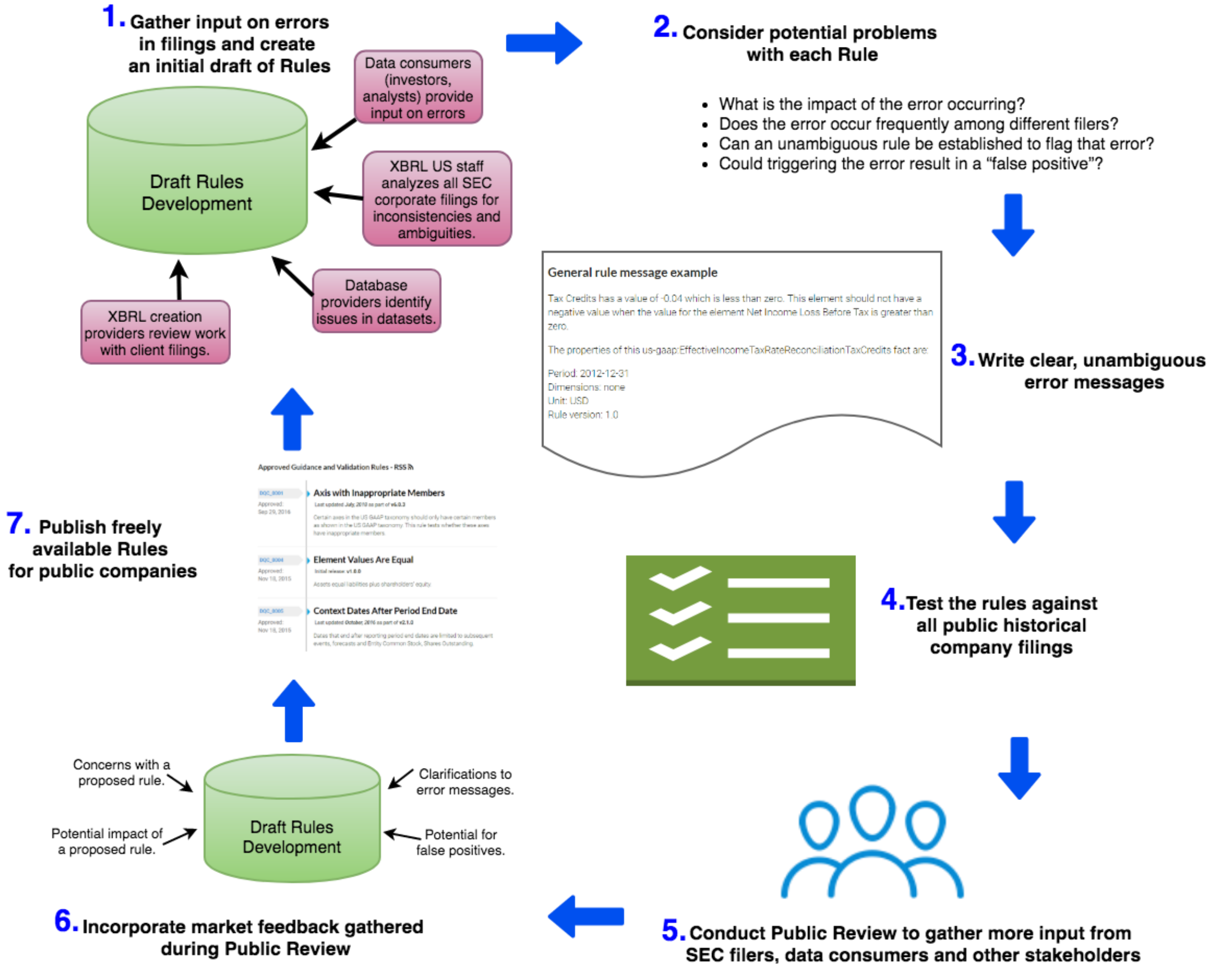
> Assets with a value of 340,000,000 is not equal to the total of Liabilities and Equity with a value of 350,000,000. These values should be equal.
>
> The properties of this us-gaap:Assets fact are:
>
> Period :2014-12-31
> Dimensions : none
> Unit : USD
> Rule version : 1.0

> Derivative Assets has a value of -400,000 which is less than zero. This element should not have a negative value. The properties of this us-gaap:DerivativeAssets fact are:
>
> Period: 2012-12-31
> Dimensions: none
> Unit: USD
> Rule version: 1.0

These are relatively simple rules and may seem obvious, but when applying XBRL tags to a financial statement, may not always be readily apparent. DQC rules range from very simple, like these, to relatively complex, for example, capturing errors when using dimensions, or when creating extensions.

To develop the rules, the DQC conducts a rigorous process which is outlined in the diagram below. This seven-step process is conducted for each set of rules developed by the DQC.

Steps in the DQC Rules Creation Process



Activities and Accomplishments

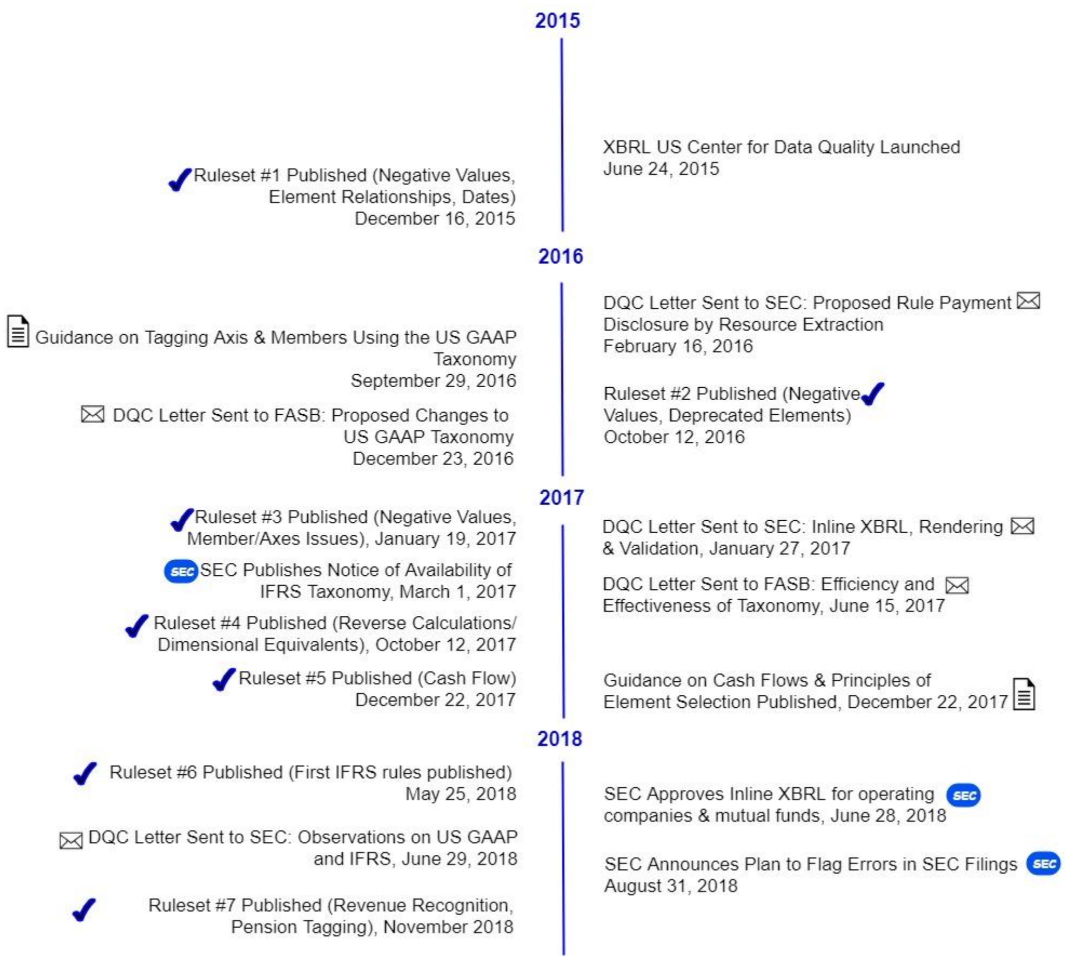
In its first three years, the DQC has published seven sets of rules. It holds meetings approximately every six months with staff from the SEC - typically with representatives from the Office of Corporation Finance and the Office of Structured Disclosure. The purpose of these meetings is to apprise the Commission of the DQC guidance and rulemaking progress. The DQC also periodically submits letters to the SEC and the FASB, providing comments and observations related to the US GAAP Taxonomy, submitted XBRL filings, and various rule proposals.

After the Center was launched in June 2015, the first Ruleset was published at the end of that year, followed by Ruleset #2 in 2016. In late 2016, the DQC also published “Guidance on Tagging Axis and Members Using the US GAAP Taxonomy”. By 2017, the Committee had established an efficient rules creation process. Three new rulesets were published in 2017, one released at the end of December.

In addition, a second guidance document was produced in 2017, “Statement of Cash Flows” which provides assistance to filers in tagging the statement of cash flows. The DQC also released the “Guiding Principles of Element Selection” which include four guiding principles which are designed to improve the usability of XBRL data by ensuring the consistency of element selection and data modeling.

In 2018, the DQC published two rulesets, and has completed the public review for a third ruleset. To support foreign private issuers filing using the IFRS Taxonomy, which was approved by the SEC in March of 2017, the DQC also began publishing rules for IFRS XBRL submissions.

The milestone chart below shows the pace of work conducted by the Committee, and various SEC actions that have had a significant impact on the work of the DQC.



Results

Since 2015, market and regulatory acceptance of the work of the DQC has accelerated the pace of activities of the Center, as shown in the chart above. The quickened pace has been fueled by significant results: the quality of XBRL data has improved as more rules have been issued, and more categories of errors are covered; regulators are taking a closer look at data quality and bringing it to the attention of issuers, and; structured data is more heavily used by commercial data providers.

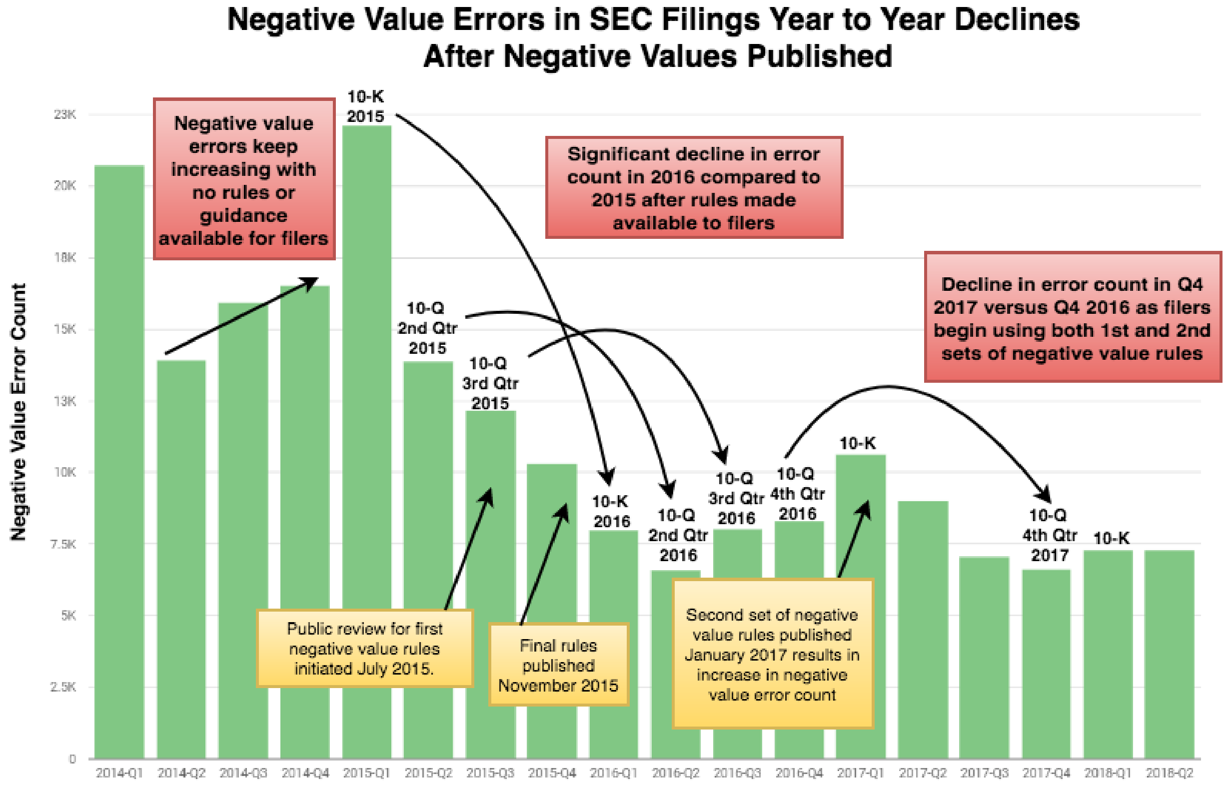
Result: Increase in Data Quality

Analysis shows that the work of the DQC helps filers reduce the number of errors in corporate XBRL financials. The first DQC Ruleset focused on negative value errors, the most common problem in XBRL financials. As shown on the chart below, filings containing facts erroneously reported with negative signs were trending upward throughout 2014 and into the 2nd quarter of 2015.

In the 3rd quarter of 2015, as noted in the yellow box on the bottom left of the chart, the DQC launched a public review for the first set of negative values. Because these draft rules were publicly available for use by SEC filers, the trend in negative value errors began to decline immediately when the public review began in the 3rd quarter (compared to the 3rd quarter of 2014). In the 4th quarter of 2015, final rules were published, resulting in a continued downward trend in errors, comparing 2015 quarters to 2016 quarters, year over year.

In the 1st quarter of 2017, a second set of negative value rules was published by the DQC as shown in the yellow box on the bottom right of the chart. Note that the error count appears to increase in this quarter, but this is caused by additional negative value rules which automatically generate additional errors adding to the count not captured in prior quarters.

More important to note is that by the 4th quarter of 2017, the negative value rules were having their desired impact - errors in XBRL filings declined versus the 4th quarter of 2016, and in subsequent periods in 2018.



Result: Comprehensive Error Reduction

The work of the DQC to date covers many different categories of rule types including axes that are used with inappropriate members, element values that should be equal, context date problems, reversed calculations, equivalency errors, and the use of deprecated elements, among others. Similar analyses of these error counts also show a reduction in errors starting at the time period when the rules were first introduced. Aggregate error count analyses depicting additional error categories can be found at: https://xbrl.us/dqc-results.

Result: Engagement with the SEC

Since its inception, the DQC has been meeting with the SEC approximately every six months to share observations about the quality of filings submitted to EDGAR, and to explain the proposed and finalized guidance and rulesets. The DQC has also submitted letters to both the SEC and the FASB, explaining their position on proposed changes to the US GAAP Taxonomy, as well as proposed rules. Representatives from the FASB and the IASB (since 2017, when the IFRS Taxonomy was approved for use by the SEC), participate in DQC meetings as observers. This closer engagement is helpful at ensuring that the viewpoint of the XBRL community, as well as the preparing and consuming communities, are heard by regulators and standard setters.

Result: Regulatory Focus on Data Quality

Our research shows that until recently the SEC had adopted a protocol of publishing general observations and FAQs about XBRL submissions, instead of contacting filers individually about XBRL issues. For example, the Commission established a web page[2] that contains staff observations, guidance, and trends concerning interactive data submissions. In their Staff Observations of Custom Tag Rates, published July 29, 2014, the Commission notes: "*Analyzing the most recent XBRL exhibits as of October 30, 2013, Commission staff identified a sample of filers with custom tag rates greater than 50%. Among these, approximately 96% were smaller filers*...*we observed systematic evidence of smaller filers in our sample creating a custom tag instead of selecting an available standard tag."* [3]

These SEC observations suggest that small filers should consider whether they are using custom tags inappropriately. While this information is helpful, it does not flag problems in an individual corporate filing. Issuers must review the guidance documents and consider whether a particular problem applies to them.

Despite widespread evidence of errors clearly identified in XBRL submissions, and difficulties that data consumers have found in working with the XBRL data due to quality problems, there had been minimal direct outreach to filers concerning errors in individual company filings beyond the general observations noted above.

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[2] SEC Staff Observations: https://www.sec.gov/structureddata/osdstaffobsandguide

[3] SEC Staff Observations of Custom Tag Rates: https://www.sec.gov/structureddata/announcement/osd-announcement-070714---staff-observations-of-custom-axis-tag.html

The SEC protocol for addressing data quality for filers changed on August 31, 2018, when the SEC announced that EDGAR Release 18.3, effective October 2018, would begin introducing error messages to flag a sampling of errors identified on submitted XBRL filings. These new error messages are flagged as EDGAR warnings (not suspensions) when XBRL submissions contain one or more errors of these types:

- when certain US-GAAP and IFRS numeric reporting items are tagged incorrectly as negative,
- if a filing uses deprecated tags in a submission,
- if a filing contains custom Axis tags for purposes already served by certain existing standard taxonomy axes.

These SEC-developed rules mirror the approach first established by the DQC. The SEC errors are only a sample of the kinds of errors that can be identified. For example, the negative input errors are available for three US GAAP and five IFRS concepts, in contrast to DQC negative value rules which cover hundreds of US GAAP concepts and IFRS concepts.

Despite the limited nature of these validation checks, this move demonstrates that *the Commission is taking note of the quality of the XBRL data submitted by SEC filers*, and is drawing filers attention to errors to help them correct the same errors they can correct by using DQC rules.

Result: Increasing Use of XBRL Data

The stated mission of the Center for Data Quality is to "*to improve the usability of XBRL data … to support the Data Quality Committee's initiative to address the public's concerns about the quality and usability of XBRL financial data filed with the SEC.*" Increasing the quality and consistency of the data produced from XBRL submissions makes it easier for data consumers to extract and analyze corporate financial fundamentals.

Today, corporate XBRL data is increasingly in use - by regulators, data providers, analysts, and investors. Data aggregators and analytical tool providers, including Bloomberg, S&P Global Market Intelligence, Refinitiv, Morningstar, Calcbench, idaciti, and Intrinio, all use XBRL formatted financial data in database and analytics offerings to investors and analysts. The use of commercial datasets like these is the most common method by which investors, both individual and institutional, obtain corporate fundamental data. Data providers and the analyst community joined the DQC because they recognized that automated rulesets and guidance could improve the value of the corporate financial datasets they use.

"Calcbench spends a significant amount of time vetting and fixing errors identified in XBRL filings. We joined the Data Quality Committee because we would prefer to have these errors resolved at the source – by the issuers themselves. We're confident that the work of the DQC has begun improving the quality of the data we're seeing reported by public companies in their XBRL submissions."

- Pranav Ghai, co-Founder and CEO, Calcbench

"XBRL data is important to analysts because the computer-readability of standardized data makes it more timely and granular than traditionally available data. The CFA Institute participates in the DQC because we know that there are errors in XBRL financials, and rules made available by the DQC can help eliminate many of these issues."

- Mohini Singh, ACA, Director of Financial Reporting Policy, CFA Institute

Going Forward

It is imperative that the work of the DQC, funded by the Center for Data Quality, continue to support the 6,000 public companies that generate new XBRL-formatted filings each quarter. The results of the Center for Data Quality and the DQC, as evidenced by a reduction in filing errors, a stronger regulatory focus on data quality, and increasing usage of XBRL data, are clear signs that the work of the DQC is providing an important and necessary benefit to the markets.

In the months ahead, the DQC will continue to develop new rulesets and guidance to address additional categories of errors.

To learn more about the work of the Center for Data Quality and the Data Quality Committee, visit our web pages:

Center for Data Quality: https://xbrl.us/data-quality/center/
Data Quality Committee: https://xbrl.us/data-quality/committee/
Approved rules and guidance: https://xbrl.us/data-quality/rules-guidance/

Contact us for more information about how you can participate in the work of the Center for Data Quality at info@xbrl.us.

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