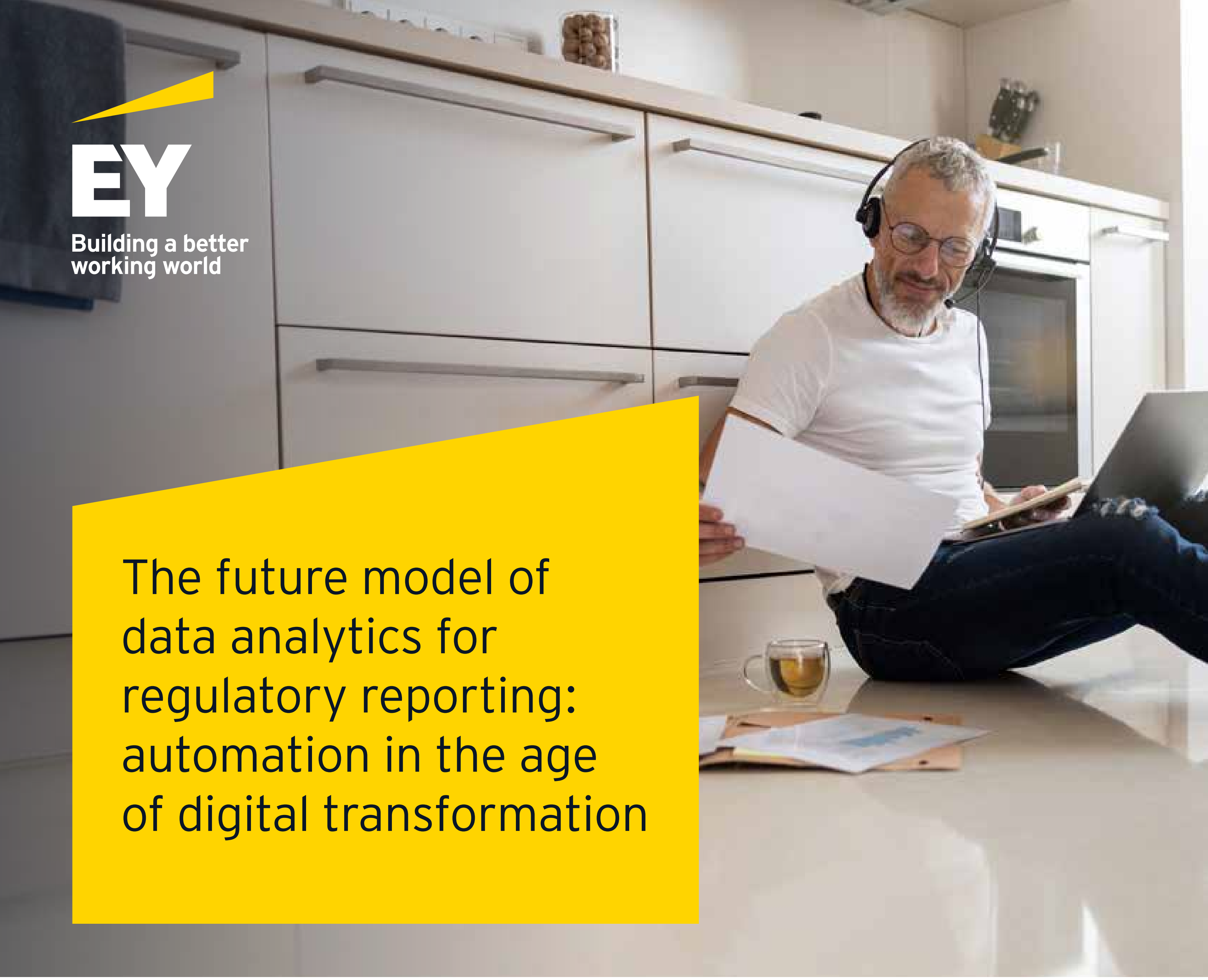


The future model of data analytics for regulatory reporting: automation in the age of digital transformation

Introduction

Financial institutions continue to face increased levels of scrutiny by regulators with increased focus on data quality and sustainability of the reporting process. In addition, feedback from the regulators resulting from horizontal exams over the past five years has revealed systemic data quality issues. In response, the industry has set up significant remediation programs to improve accuracy of reporting. As part of the "2018 Federal Reserve regulatory reporting survey," we surveyed 47 firms across the banking industry in 2018 to better understand the current state of the regulatory reporting environment. Based on that survey, the focus on regulatory reporting data quality and data granularity is evident, as described in some of the metrics in the inset.

As regulatory reporting functions collect, aggregate and utilize terabytes of institutional data, they need not only to better manage their data supply chain from ingestion to reporting, but they also need to be able to translate their reporting into analysis and insights for meaningful decision-making. Data is critical for decision-making, not only for financial institutions but also for global regulatory bodies to assess and monitor system-wide risks and assess safety and soundness of the financial ecosystem.

The model of the future is nimble — dynamic reporting and analysis of internal and external data in insightful ways through interactive, story-driven visualizations that can be used across various types of reporting. Better understanding of this data can underpin your business transformation and growth. In this age of digital transformation, the capabilities available in the market provide endless options on ways to visualize large data sets and produce analytics at the click of a button — this is powerful for management and a priority for the C-suite.

2018 Federal Reserve regulatory reporting survey

(select metrics)

71%

of firms are self-reporting having "medium"[1] data quality available for regulatory reporting.

80%

of firms are self-reporting having "medium"[2] data granularity available for regulatory reporting.

86%

of firms reported that manual processes continue to be the major underlying reason for recurring adjustments made.

Why now?

Whether it be regulatory, financial or management reporting, institutions today utilize a variety of analytics using manual reporting processes that are slow and error prone and lack transparency. Extensive time is spent on manual sourcing and production of reports, leaving little time for analysis and insights.

Financial institutions produce a litany of data, and without proper understanding of the data and associated insights the data is just that — data. If institutions synthesize their data to tell a story using analytics, they can cut through the noise and provide clarity into trends.

Data analytics platforms provide a time-saving solution and effectively incorporate and assess massive data volumes, reducing effort required by resources to create reports and increasing time for much-needed analysis. This decreased effort in report production is incredibly important in the midst of the COVID-19 pandemic as regulators request report filings with a swifter turnaround time, and management needs insights for better decision-making during these critical times.

This brief will focus on emerging trends in the regulatory reporting data analytics landscape that can serve a variety of purposes across the CFO organization and can provide comfort concerning the accuracy of data ahead of regulatory submission.

Analytical capabilities

End-to-end data consumers and reporting functions alike can utilize a variety of analytics capabilities across the reporting process to improve quality, promote process efficiency and provide actionable insights for all three lines of defense. A combination of analytics capabilities can be leveraged to help financial institutions and regulators alike in processing large amounts of data for oversight, compliance and business decisions. We've observed a variety of analytical capabilities used throughout the end-to-end regulatory reporting process. Many of these capabilities are detailed to the right:

1 | Predictive analytics

- Use statistical models and machine learning to identify anomalies

2 | Variance analysis

- Identify data issues based on variance and trend analysis within source or aggregate systems, including business rationale

3 | Data profiling

- Identify anomalies when data is captured based on behavior profiling

4 | Business logic

- Apply analytical business logic to identify anomalies in the data, which can be for clarify

5 | Fed-specific edit checks

- Identify errors within the data ranging from formatting to Fed-mandated or custom business logic

6 | Intra-/interseries reconciliations

- Reconcile line items and elements across other schedules/reports

7 | Independent classification

- Use independent business rules to validate select mapping

8 | Reconciliations against aggregate

- Reconcile data sources to the aggregated data

9 | Product deep dive

- Review product-level details, trends and variances to identify issues at a product level

10 | Management review

- Use high-level dashboards and presentations to review results with management

11 | Issue management

- Log and track issues and further analyze issue trends to assess root causes

12 | Peer benchmarking

- Leverage publicly available peer data to compare bank performance

Examples of visual analytics

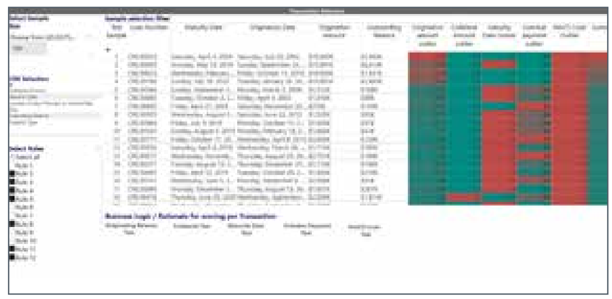
There are several solutions and accelerators that institutions trust to enhance, streamline and represent data analytics transformations. These solutions are tool agnostic and can be easily integrated with analytics platforms available in the marketplace, such as Power BI, Tableau, Alteryx, Spotfire and others depending on the institution's IT infrastructure preference.

FR Y-9C data analytics and peer benchmarking

Dashboarding tools that demonstrate a broad range of capabilities, including, but not limited to, peer benchmarking, product deep dive, variance analytics, executive summary dashboards and management reporting packages, can be leveraged to fulfill a variety of objectives across the regulatory reporting agenda, including CFO attestation, production metrics, exam support and independent validation.

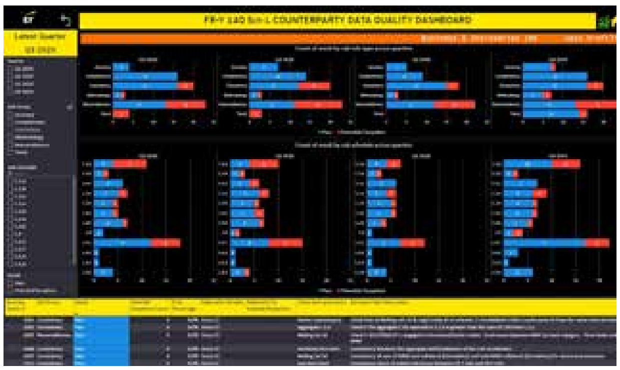
Regulatory reporting quality assurance (QA) assessment

Leveraging tools that use statistical analysis can help institutions assess transaction-level data. Customized business rules can be applied to the transactions to produce a heat map that prioritizes the transactions based on risk. The insights derived from the assessment can help prioritize transactions for data quality review and testing. Additionally, the tool can also display the results of data quality review and shares insights on the number and types of discrepancies, validation issues and root causes of issues.



FR Y-14 data quality/business checks

Institutions can leverage data quality assessment tools that provide management with the ability to identify data quality breaks ahead of report submission and allow it to derive in-depth business insights. The tool can also be used to perform product-level trend analysis at a granular level. Additionally, the tool can assess the materiality impact of the data quality, thus supporting root cause analysis.

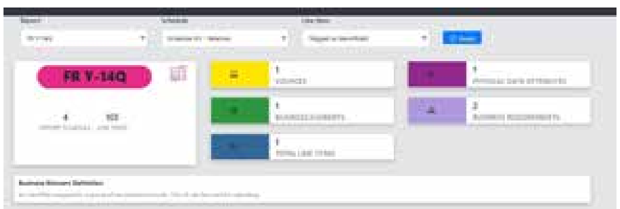


Cross-report reconciliations

Data analytics driven by cross-report reconciliation tools can help financial institutions demonstrate reporting accuracy and identify and address errors in the report preparation process. Customized reconciliation checks, in addition to existing Fed checks, can be applied to various attributes reported (e.g., outstanding balance, loan population count) across multiple schedules/reports. These checks would help financial institutions (i) validate completeness and accuracy across critical reports such as FR Y-9C and FR Y-14, (ii) identify root causes of reconciliation breaks (e.g., data sourcing discrepancies), (iii) prioritize remediation efforts based on materiality and reporting impact of breaks and (iv) strategically solution reconciliation and reporting errors across multiple reports.

Data dictionary and conformance review tool

Institutions aspire to manage data that allows for a holistic view across a broad range of regulatory reports, trace a clear line of sight from source to report and demonstrate the overlaps across multiple reports. Insights developed from an automated conformance process help support root cause analysis of issues and tracking and closure of gaps, and drive efficient regulatory conformance.



The evolving technology landscape

As data stores grow exponentially, institutions continue to automate their data supply chain, whether it relates to sourcing the data, preparing the data or just understanding the data. They realize that the evolving technology landscape provides an opportunity to reimagine the end-to-end life cycle and combine the power of automation technologies with data analytics. Within regulatory reporting, institutions are leveraging the cloud, robotic process automation (RPA), optical character recognition (OCR), business process management (BPM) and artificial intelligence (machine learning, natural language generation, etc.) to automate the regulatory reporting life cycle so that regulatory reporting teams can focus on the insights and actions derived from analytics. Application of these technologies can help identify efficiencies that not only enhance overall quality, but also provide an additional source of analytics from their regulatory reporting data.

Conclusion

Even though data across regulatory reporting initiatives may utilize similar data sources, many financial institutions adopt a siloed approach to data aggregation and integration, which leads to redundancy, inefficiency and more workarounds. Financial institutions are brimming with data and need to identify actions to take in order to add value to the overall regulatory reporting life cycle. Analytics, when combined with a streamlined data supply chain and certain automation techniques, can be a powerful weapon in the business arsenal.

Key contacts

To learn more about how the changing regulatory reporting environment might affect your organization and how Ernst & Young LLP can help, please contact one of our professionals:

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We appreciate contributions from the following individuals in the development of this report: Adithya Simha, Sophie Brown, Diavee Chowdhury, Andres Garcia Angulo, Rahul Gupta and Amey Duduskar.

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1 Medium data quality: there are data quality rules and control standards in place for some regulatory reports, along with data management roles and responsibilities and periodic testing to validate quality.

2 Data involved is tested periodically and data granularity is available from ad hoc sources that require various adjustments.