Global Research
& Risk Solutions

CRISIL
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Regulatory reporting and technology in finance

Trends, challenges and the road ahead

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A year of uncertainty

The global financial industry is in a state of flux as it navigates the rapidly changing geopolitical landscape, volatile macro conditions, and higher-for-longer interest rates in response to sticky inflation.

The industry is grappling with challenges from an evolving risk environment, emerging compliance mandates and proliferation of next-generation technologies.

To counter the cost pressure, the CFO vertical of financial institutions needs to strategise, streamline and transform the operation model and optimise cost.

Emerging trends

The financial industry is at a critical juncture, where it must not only meet the business and regulatory requirements but also prepare for the future by exploring new areas and embracing latest technologies.

Here are some top trends across the board.

Regulatory mandates

The key regulatory mandate knocking on the doors of financial firms is Basel III Endgame, wherein numerous changes have been proposed.

New exposure sub-classes, along with a grading mechanism, has been introduced in credit risk. In market risk, the simplified standardised approach and advanced standardised approach have been initiated.

The credit valuation adjustment framework has undergone significant modifications. The newly introduced 'haircut floor' for non-centrally cleared securities financing transactions can significantly impact liquidity in the US market.

Further, there have been additions and modifications to Pillar 3 reports and common reporting templates, coupled with disclosure enhancements.

The implementation of these changes and the complexity of jurisdictional nuances could lead to a surge in risk-weighted assets with higher minimum capital requirements for banks.

Rise of sustainable finance

Climate change and increased investor awareness of environmental, social and governance (ESG) factors are driving the adoption of sustainable finance, an emerging segment.

With climate change impacting the economy and risk stripes across financial institutions, governments and regulators globally have introduced regulations to promote sustainable investment.

Technological advancements

Generative artificial intelligence (GenAI) has taken the financial industry by storm, with its applications spanning verticals.

Firms are also adopting big data solutions, cloud-based platforms, advanced analytics and business intelligence (BI) to harness the full power of technology.

Challenges

As financial institutions incorporate the emerging trends in their strategic roadmap, they face hurdles on many fronts.

Ever-increasing compliance demands and regulatory scrutiny

Financial institutions are overwhelmed not only with increasing regulations and reporting mandates but also enforcement actions and request for additional information.

Regulators have called out financial institutions through consent orders, enforcement actions, etc. for breaches. This has resulted in fines, reputational damage and enhanced legal risk for the firms.

In their quest to meet the compliance reporting requirements, financial institutions encounter obstacles in the form of business process (upgrade to an existing regulation or implementation of a new regulation) and data (rationalisation and volume issues, granularity and sourcing challenges) transformation.

Siloed data and systems

As firms expand over time, new systems, end-user computing applications, and processes are introduced.

The fragmentation in the ecosystem increases exponentially when handling multiple entities, business lines, cost centres, and entities based on the complex global booking model, financial processes and standards, and jurisdictional diversity.

Mergers and acquisitions compound this issue.

With no uniform architecture and data model in place, firms encounter difficulties in rationalisation, harmonisation and data lineage. A few plausible cases are as follows:

- Different booking models or system limitations cause different legs of a transaction to be recorded as separate trades
- Divisional disparity leads to different data models and normalisation techniques for asset types. For example, a derivative and the security components of a structured product can be shown as two different rows, while the two legs of cross-currency futures can be shown as a single record with all the elements represented as columns. However, in both scenarios, these represent different components of a position. Another example is the notional value and present value of a transaction can be shown as separate columns of a single record or different balances of a single transaction
- System and data silos are also introduced owing to data protection laws (e.g., in Switzerland and Singapore), along with data-masking features
- Reference data management with a fragmented infrastructure is a concern, as it leads to multiple values of the same dataset. This results in inconsistency, governance and control issues, and integration challenges

Lack of automation, enhanced manual intervention, absence of documentation, and people risk magnify these issues.

Legacy infrastructure

Maintenance of legacy architecture and systems costs banks a fortune, as people with the required skills are not easily available.

Further, legacy infrastructure’s scalability issues and incompatibility with new-age technologies, such as AI, machine learning (ML), cloud, BI and advanced analytics, make it difficult to implement new mandates.

Challenges include data truncation, rounding issues, difficulty in adding new attributes to the data structure, limited or no analytics feature, lack of visualisation feature, and slow processing speed.

Customers expect financial institutions to provide real-time or near-real-time updates on their positions and exposures across business lines, entities and currencies.

The recent bank failures also underscore the need for real-time valuation of assets and collaterals.

The centralisation of cash and liquidity, along with a clear picture of the liquidity situation, capital needs, cash flow, asset-liability management and balance-sheet status, would aid the top management in efficient decision-making.

Legacy infrastructure is a major roadblock to real-time infrastructure.

Additionally, old technologies are unable to handle the modern-day big data needs and are mostly supported by relational databases. These systems and technologies also introduce people risk and are prone to cyber risk.

Greenfield mandates

Financial institutions must continuously enhance their business processes to account for new products and offerings such as sustainable finance and digital assets and prevent indulging in greenwashing and greenwishing activities.

These products have different factors and rules for accounting, pricing, valuation and PnL processes. Integrating into the Pillar 1 framework can enhance the firm’s minimum capital requirements.

Further, banks need to plan and source reference data, ratings information, market data and alternative data for these products to meet the financial and regulatory reporting requirements.

The road ahead

To align with the strategic operating model, optimise costs and meet the global reporting mandates, financial institutions must develop a comprehensive roadmap for a platform ecosystem that has a well-defined governance model and is compatible with the latest technologies.

Enhance front-office (FO) data for reporting

For their reporting needs, financial institutions should enrich FO data using an automated transformation process.

To attain scalability, we recommend the standard industry approach of creating a rule-driven transformation engine with the feature to set up rules based on asset classes, business lines, financial and accounting standards, regional nuances, and regulatory needs.

Additionally, there should be a well-defined governance and control process for the maintenance and enhancement of these rules, as these will undergo modification with the changing regulatory requirements.

An enriched dataset with the lowest granularity will ensure accurate reporting across various consumers (group disclosures, capital, liquidity, exposure computation, treasury, etc.) with enhanced transparency, lineage, audit trail and slice-and-dice features.

One function, one ecosystem

For the platform delivery model for the CFO vertical, financial institutions are leveraging big data technology, ETL (extract, transform and load) and cloud infrastructure.

This approach allows to rationalise and standardise processes and systems (risk stripes, finance and accounting, ledger and subledger, PnL generation, product control and valuation control, and regulatory reporting processes) and organise convoluted and siloed data across the firm.

- To begin with, institutions should identify the critical data elements required across consumer reporting domains (disclosures, capital, accounting, liquidity, balance sheet, treasury, etc.)
- Firms must then identify the required data sources and create a common taxonomy across entities, asset classes, business lines, risk stripes and regulations, including harmonised format, values and enumerations of the attributes. Additionally, firms should leverage AI to tap alternative data sources for differentiated insights (e.g., ESG reporting)
- The next step is to design a unified data model and a scalable architecture to iron out the design disparity, ensure a forward-looking common minimum granularity, and conform to the firmwide reporting needs. This will create a managed dataset for the CFO vertical once the transformation logic is implemented

This strategy will ensure that the data consumed across workstreams is updated in a single place, ensuring consistency and a robust audit trail and avoiding multiple instances of the same dataset.

With incremental data load, firms can replicate a near-real-time scenario and address the demand for real-time reporting needs.

A potential area is valuation, where near-real-time update can help identify the cash and liquidity situation and ‘cheapest to deliver’ collaterals.

Although it requires synchronisation across risk and finance systems, this approach can assist in prudent risk management through effective hedging and efficient management decision-making.

Additionally, a single-platform ecosystem is easier to maintain and reduces the overall cost in the long term.

Leverage AI and other new-generation technologies

Once the platform ecosystem is established, financial firms can undertake transformational changes to adopt new-age technologies to aid business operations, reporting and management decisions by:

- Designing and delivering BI systems and visualisation capabilities, leveraging advanced analytics techniques, and providing accurate, timely and democratised data (e.g., creation of a unified exposure dashboard for customers across entities, business, currencies, assets and collaterals, margin needs, etc.)
- Building GenAI capabilities using the latest tools and technologies to aid activities such as trading, data analysis, document generation and summarisation, risk assessment, compliance reporting, and chat-based Q&A
- Adopting RegTech through
  - Automation, AI and ML to streamline compliance processes, enhance data quality (auto-data correction) and reduce manual intervention
  - Blockchain and its immutability feature to enhance transparency, security, record-keeping and trust for regulatory processes with robust lineage and audit-trail features
  - Big data analytics to better comprehend and manage regulatory requirements, and gain deep insights (forecast cash and liquidity position, deteriorating asset and collateral quality, potential margin requirements, etc.)
  - Cloud-based solutions for scalability, flexibility, cost-effectiveness, and integration compatibility with tools and technologies

Create comprehensive controls

Large data and new business processes necessitate comprehensive and robust automated controls and governance processes.

Financial firms must tag the roles and responsibilities of the stewards, identify and define key performance and risk indicators, and ensure automated control reporting across the management hierarchy.

From a data standpoint, financial institutions require a well-defined control framework to ensure data completeness and timeliness of the managed data.

For accuracy, firms should set up a comprehensive automated data quality (DQ) control with both technical checks (including meta data-level and attribute-level checks – missing value, enumeration, format, etc.) and a business-level check.

To reduce manual touchpoint and enhance efficiency and operational risk management, they should implement an auto-data correction (ADC) framework for any identified exception, leveraging a static data model or an ‘intelligent’ process using a probability-based process, or other AI/ML models.

Firms can have the option of free form adjustment templates or a user interface solution for manual enrichment where auto-adjustment or auto-correction is not feasible.

They should deploy a well-defined change management process around the maintenance and enhancement of the DQ rules, along with the ADC feature, as these are point-in-time logic and will get updated as per the reporting needs.

The controls and governance processes should be well-documented and kept up to date. There should be an attestation process for all policy and procedure documents.

This also needs to be linked to the change management process, which should assess the changes needed due to regulatory compliance, business-as-usual activities, etc. before sign-off.

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