NAVIGATING THE OBSTACLES OF REGULATORY REPORTING

VERTIV

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1. Navigating The Regulatory Reforms

Reforms introduced since the financial crisis in 2008, such as the Dodd–Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank), European Market Infrastructure Regulation (EMIR), Markets in Financial Instruments Directive (MiFID II) and BASEL III impose rigorous scrutiny on the financial services sector. A key requirement of all of these regulations is heightened reporting. This new focus poses a real challenge for banks, especially if each regulation is addressed separately rather than being considered holistically across jurisdictions. Implementation is further complicated by ambiguity in rulemaking and compliance schedules. The costs associated with this new regulatory environment will be significant for banks. The ever changing needs of regulatory reforms and new rules imposed possess a greater challenge for a more flexible solution.

At present regulatory reporting exists as a subsidiary function within operations departments including front office, risk and collateral management and accounting within a particular geography. Key tasks including data extraction, enrichment, report creation, validations/adjustments and subsequent routing are handled in silos. As a result, there is no enterprise-wide strategy for regulatory reporting. The focus is on short-term compliance and the submission of reports in response to requests from compliance departments.
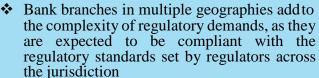
This fragmented reporting approach exists across functions, geographies and asset classes and leads to:

- ❖ Proliferation of applications including duplicates

- ❖ High total cost of ownership (TCO) and maintenance efforts.

- ❖ Limited scalability of technology architecture.

- ❖ Compromised data integrity through the use of duplicate, stale or incorrect data.

- ❖ Substantial manual effort, work-arounds and process breakpoints.

- ❖ Increased regulatory incidents.

- ❖ Incapability of a historic drill back.

2. Key Challenges in Regulatory Compliance.

❖ Ideally, a financial institution is expected to spend 80 percent of its time in analytics review and 20 percent on data preparation. But in reality, most spend more time on data collation and treatment and less on analytics. This is mainly because regulatory is a subsidiary function with the key tasks of data enrichment, lineage and reporting handled manually. Often, the absence of an enterprise-wide strategy or a budget for reporting systems development makes the entire process complex and challenging. Besides the other hurdles in the organizational structure and resource availability, some key technical issues in establishing a foolproof regulatory system are:

Overlapping Jurisdictional Applications	❖ Bank branches in multiple geographies add to the complexity of regulatory demands, as they are expected to be compliant with the regulatory standards set by regulators across the jurisdiction
Data Governance	❖ Data standardization in terms of: • Granularity: Maintaining and managing the desired granularity of data to the level of transaction, customer, product, region, cost center, etc. • Quality: Poor data quality poses a big challenge for accuracy in processing and reporting. Data integrity can be at a big risk with insufficient and ineffective data quality frameworks • Consistency: Inconsistency in data hampers the bank's attempt to consolidate and present reporting figures • Completeness: Reconciliations and adjustments need to be done down-stream to bring about completeness, which can significantly increase the time required for compliance ❖ Data validation
Impaired Technology	❖ Heavy dependence on manual methods, leading to error-prone and time-consuming processes. ❖ Siloes applications, resulting in inaccuracies in data aggregation and reporting ❖ Absence of an integrated platform and advanced technology for seamless processing

Ongoing rapid regulatory change and a complex market dynamic present significant challenges for financial institutions' operating models, analytics and reporting capabilities. As regulators begin to export compliance regulatory requirements downstream to smaller banks as well as buy side firms, these entities will be keenly scrutinizing the pioneering risk data aggregation and integration processes as potential best-practices that can be scaled to their sizes and adapted to specific jurisdictions' regulatory requirements.

Let's run through some of the many challenges that we need to face in Regulatory Reporting:

Flexibility to deal with any level of complexity – Often Regulatory Report demands complex level of Rules spread over an array of products, Holdings and assets and Reports.

Change management – Handling ongoing change in regulation or business requirements without the need for programming expertise.

Automation – The increased volume and granularity of data is needed to support risk aggregation as well as greater frequency of reporting means that automation is a necessity.

Leveraging data and processes –Ensuring consistency, reduce total cost of ownership (TCO) and accelerate responsiveness.

Drill down and 100% auditability – Every step in the data collection, enrichment and consolidation needs to be tracked and recorded, including all comments.

Data lineage and transparency –Retraces the journey of the source data through every single processes or calculations across siloes systems all the way to disclosures.

Dashboards –Present information and manage processes, such as analysis, drill down and sign-off.

Electronic submission – Support for all regulators globally in all required formats, including XBRL, XML or other file-based electronic submission.

Pre-submission review – Being able to view the report for multiple users in multiple formats with drill back and capability to override values manually.

High volume, high performance and reliability –Produce reports at any time interval to meet internal and external requirements. Handle all volume and performance demands.

Security and control – The ability to define granular data and process permissions for hundreds of users provide a completely controlled and secure environment.
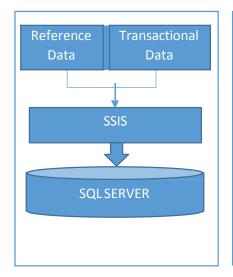
3. The Vertiv RQuest Experience

Overview RQuest

This white paper describes the capabilities and architecture of Vertiv's RQuest. RQuest is a Regulatory Reporting System. Vertiv RQuest is a sophisticated software product that enables financial institutions to automatically monitor and identify regulatory disclosure requirements in an extensive number of global jurisdictions. Once identified, RQuest provides compliance users with the critical workflow tools to verify, amend, approve and ultimately submit regulatory documentation.

RQuest has been designed to enhance the accuracy and reduce the effort required for regulatory reporting. As such, from the user's perspective, RQuest incorporates workflow functions that model the business process associated with regulatory disclosure and filing submission. RQuest provides users with the ability to generate ad hoc rules and position limit monitoring reports. In addition, users have the capability to generate and report on the extensive aggregated holdings database maintained within RQuest.
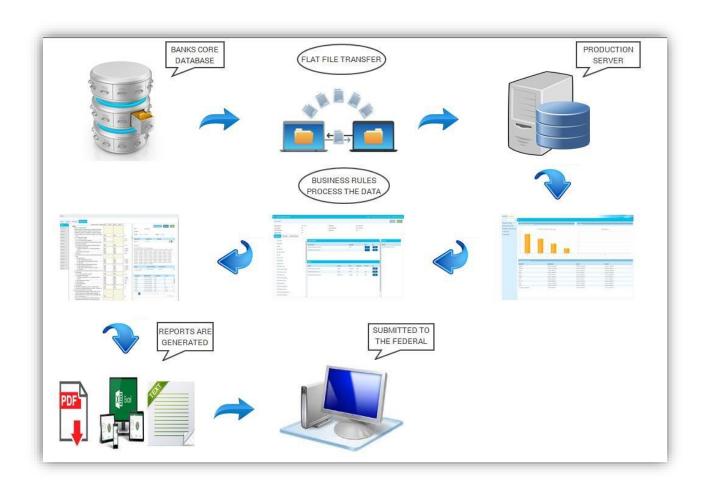
RQuest Capabilities

Data Load	RQuest Engine	Interactive Workflow
Reference Data / Transactional Data → SSIS → SQL SERVER	Data Integration / Work Flow Manager / Business Rule Engine / Report Central Manager	Identified / Pending Review / Approved for Signing / Submitted / Complete

Vertiv's RQuest delivers data lineage, risk aggregation, workflow automation, and validation and audit functionality and supports disclosures in multiple formats, including Text, Excel and PDF. These features support data and process governance and seamlessly integrate clients' source data from disparate systems and geographical locations without forcing data conversion. The high-performance platform transparently aggregates clients' data from multiple siloes systems, enriches and validates it to any level of granularity, and then runs the data through relevant calculations and populates the reports.
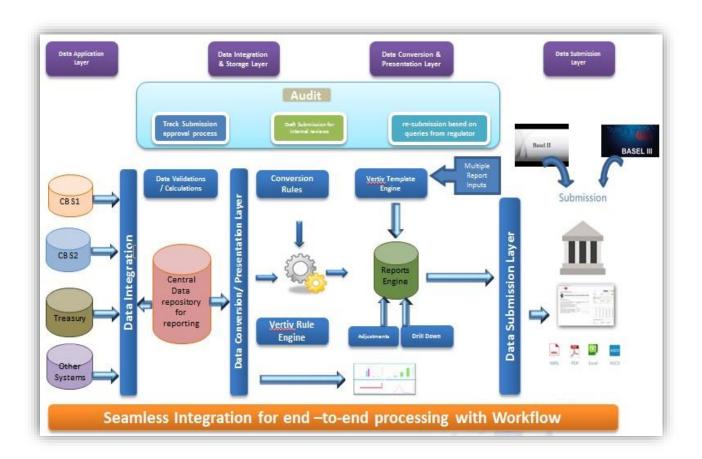
Key Benefits:

- **Customizable Data Storage:** Allows data to be maintained internally or loaded from an external source (Flat Files, Excel Files, Databases and XML).

- **Flexible Architecture:** Adapts to changes across institutions, geographies and jurisdictions without systems re-engineering, reducing implementation times.

- **Improved Transparency**: Through drill-down capabilities supports instant verification of aggregate numbers down to individual accounts.

- **Preview of Results**: Enables to analyze and adjust reported facts to ensure accuracy prior to submission.

- **Multi-Level Sign Off**: Hierarchies can be defined with automated alerts to the next level after signing off.

- **Enhanced Security Features**: Define the users, screens, modules and level of accessibility to the system, with timely encrypted password updates.

- **Worksheets Over an Array**: The system provides worksheets over an array for the business users and Regulators including (PDF, Excel and Text files) all in compliance with the Federal Reserve.

- **Drill down Capability**: RQuest delivers transactional level disaggregation, allowing users to drill-down into the data at any level of granularity, including individual Report Cell Transactional Data. Enables business users to analyze each report on-screen line by line, providing comprehensive transparency

- **Interactive Workflow**: Automates complex workflow process enabling users to review results and ensure accuracy

- **Screens Designer**: Provides comprehensive views of financial information on entity and consolidated levels. Aggregates data to view detail by any grouping criteria, such as Branch, GL accounts, etc.

- **Vertiv's RQuest Support**: Provides multiple level of support Hierarchy, with regular product updates, 24X7 global support with a turnaround time of less than 4 hours on business critical issues and delivers global coverage of reporting templates with timely update services.

4. Vertiv RQuest: A Closer Look

Vertiv RQuest modules are designed to handle the most complicated Business needs and provide the desired outcome. Let us glance through our past experiences, challenges and solutions implemented, clients and some of the industries issues that RQuest is capable of handling.

List of Reporting Modules in RQuest:

1. Regulatory Report Central
2. Data Integration
3. Business Rules Engine
4. Workflow Manager
5. Screen Designer
6. Entitlement Manager
7. Portlet Manager
8. Table Manager

❖ **Regulatory Report Central**

The RQuest Solution:

- Can we adjust reports after executing?
    - We can adjust reports after the execution of reports and can download and maintain history of adjusted reports too. We can also keep a record of all adjusted cells in each report.

- Is it possible to upload new report every quarter? And we don't have to configure again.
    - According to FEDs, every quarter new report is generated so we can upload any new report generated on FEDs website and upload them to RQUEST. The configurations existed in the application will be copied to new reports automatically.

- Can we generate report on previous week or month data?
    - Regulatory reporting manager consist of bind variables and some SQL functions which helps to generate weekly report like FR2900 and monthly report like DFS Assets and pledged. These reports can be generated based on previous month data too.

- Can I see breakdown of a particular cell?
    - Report Central Manager provides complete breakdown with data grid for each cell and report, for auditory and validation purposes.

- Can I get working sheet for regulators?
    - Yes, RQuest generates PDF, Text and Excel file specifically for the regulators, the system also provide complete auditability and Drill back for the regulators for each report.

- Can I configure long reports with same configuration? Like the TIC reports which are tabular.
    - Regulatory reporting manager gives the capability to configure the report in two ways: cell and tabular based configurations. TICBC and TICBL1 are tabular reports in which a whole column consisting 500 cells can be configured at once.

- Can I maintain history of executed reports? And able to see the breakdown of previously configured cells?
    - Regulatory reporting manager provides executed report in PDF, Text and excel format. Excel files can be used as working sheets. Text file can be uploaded in reporting central. RC provides 100% drill back and auditability for regulatory purposes.

- Can we execute back dated report?
    - Yes, we can execute a back dated report provide the proper parameters as in Dates for the quarter, week or month the report needs to be executed for. And selecting the context filter to generate the report.

❖ **Business Rule Manager**

The RQuest Solution:

- How can we manage complex reporting requirements?
  - RQuest Business Rule Manager allows the User to Define Business Rules, Group Business Rules and Run Business Rule/Rules/Group based on different Regulations.
  - Configure Reports like FFIEC002 and FFIEC019 reports with ease using the MAP rule in the Business Rule Engine.

- Can we validate the Report Cell Values to other Reports and Cells?
  - Edit Checks provide validation and reconciliation of the Data processed before filing at a Report Cell to Report Level.

- How do we identify the report entries for Country Exposure Reports?
  - The Report FFIEC 019 country exposure report. The business rule engine enables the user to group the data based on the core database country filters and allows the user to identify as well as populate the report automatically with the countries having exposure more than 20 million.

- Can we channel a section of Data for a particular report?
  - BR engine provides ability to prepossessed data based on Reporting Requirements and Regulations and Map changes according to core Data and process the results based on filters that are required.

- Can we configure data at a granular level if a report requires?
  - BR can process data for a report at a granular level from Day to Quarter or a Fiscal Year.

❖ **Data Integration**

The RQuest Solution:

- Can I upload data from multiple sources?
  - Data Integration provides capability to upload files from multiple sources (Flat files, Excel files, Databases and XML). And override a file incase changes are needed using ADOC integration process. Data can be uploaded to RQuest automated or Manual as needed.

- Can I schedule Data Flow from different sources and still prevent duplication?
  - Data integration assign unique ID every time a Data is loaded (Context Details, Audit Information), preventing duplication and providing 100% auditability to all the TX Data.

- Do I have the capability to upload single and Multiple files as needed?
    - Data Flow can be easily monitored using Analytical screens which provide complete insights on Data flow success and Failure with Ability to find out errors rows or columns.

- Can I Monitor the data flow process and Details about it?
    - Data Integration allows creating individuals profiles for each table enabling faster uploads and accurate process mapping.

❖ **Workflow Manager**

The RQuest Solution:

- How can we upload data automatically into the system and Monitor it?
    - Workflow manager module enables the user to design a workflow in order to schedule, execute and monitor it automatically as per the business needs of the user.

- Can we Automate the Report generation process?
    - Schedule Multiple processes at once such as Weekly Report Generation, Daily Data upload, Quarterly report submission and many more.

- Is it possible to provide Multiple sign off steps after report generation?
    - Workflow can design various levels of sign off: Preparer → Approver→ Reviewer.

- How do we know if a process is completed?
    - User friendly/interactive designing of the complete workflow process.
    - Send customized email notifications based on the business needs and processes.

- Does the workflow have complete auditability?
    - Inbox find all the executed and scheduled processes at a single space, with complete audibility of the workflow: Creation, Execution and Approval.
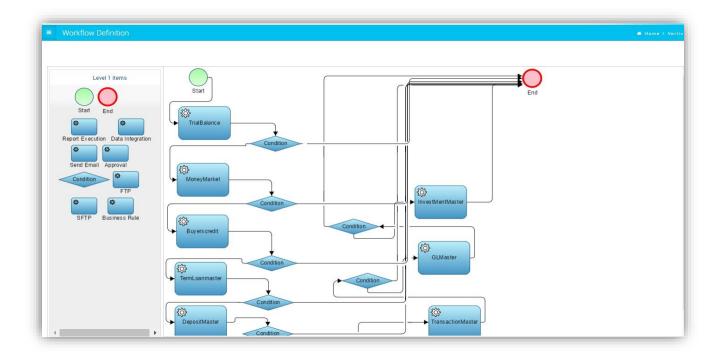
FIG: <u>Sample Report Workflow</u>

❖ **Screen Designer**

<u>The RQuest Solution</u>:

- Can I create screens for any kind of Transactional Data?
  - Yes, we can create any number of screens required as per the business needs.

- Can I add or edit values straight from the screens?
  - We can edit, delete, add new values and data as required for the business user.

- Can I download a section of the data and Can I create reports using screen designer?
  - RQuest provides filters based on each and every column of the data and user can identify the section and download the dataset even use them to create custom reports or records.
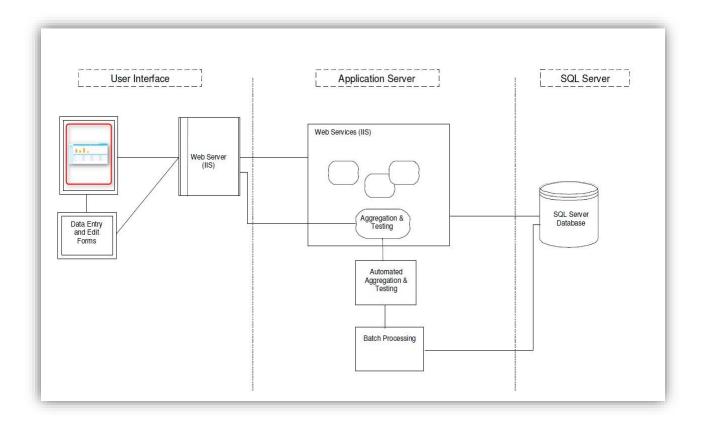
❖ **Entitlement Manager**

The RQuest Solution:

- Can I identify the number of users created in the system and manage them?
  - RQuest provides unique and easiest way of creating, edit and deleting a user information. The business Administrator can edit all the information of the user and lock the user for the time being.

- How often do we need to change or update passwords?
  - RQuest Provides individual login and access details for the user and system administrators including password reset and update processes, providing full control and auditability to the system owners. We can determine based on the user password policy.

- Do I have any notification services for the same?
  - RQuest provides personalized user notifications to the users and secured way of resetting the password, with Time duration for updating the password to keep the login information secure. All the users and information is encrypted with full audibility to the system owners.

Vertiv implementation team is dedicated to provide faster and flexible implementations. RQuest Framework allows us to implement the solution at a faster rate providing various skeletons, customize to user needs, handle any challenges or specific Business needs and a tracked implementation process.

We have successfully implemented Regulatory Reports for Banks (FFIEC 002, FFIEC 019, DFS ASSESTS, FR2900, TIC BC, TIC BL1, FRY 7, FRY 7Q, FRY 10, Capital Certificate, BE 15A, BE 605, BE 185 and more….)

In Conclusion

Evolving regulatory requirements and increased supervisory expectations have changed the way banks look at regulatory reporting. It is no longer an activity performed by a confined department; rather, it has moved to being a strategic-level initiative viewed as a value-based investment.

To meet the various compliance requirements while addressing the multiple challenges that exist in doing so, banks need to establish a highly scalable, sustainable, and integrated platform with strong capabilities in data management, transformation, control and automation. Regulatory Reporting Solution, with its in-built components, has the capability to help banks successfully transform their reporting functions.

5. About Vertiv INC. Global Services

vertiv offers global integrated technology solutions for the banking and financial services industry. Our packaged solutions offer a highly-adaptable product and the support of experienced professionals, whose expertise in Regulatory, Liquidity, and Basel II/III compliance management and reporting, help you meet the unprecedented transparency requirements of Basel II/III and Dodd-Frank regulations.

Product Offerings

vertiv offer specialized software products, solutions and services in areas of:

- Liquidity Risk Management
- Regulatory Reporting and Compliance
- Basel II/III
- Portfolio Management, Composite Management and Attribution
- Finance and Accounting Operations, Finance Reconciliation
- Point of Sale Credit Risk Management

Our subject matter expertise complements our products and ensures their business relevance. Our proprietary software technology offers significant performance advantages over competing products.

Solution Offerings

Today, businesses demand global vision, an in-depth understanding of customers and suppliers, demonstrated thought leadership and a consultative partnership approach to offer the highest possible returns on investment. At *vertiv*, we help businesses achieve these ends. Working closely with our customers as transformation partners, we deliver and implement innovative software solutions across a number of technology platforms.

Services Offerings

vertiv offer clients a broad range of fully integrated services in areas that include accounting, finance, human resource, IT management, supply chain management, ETL, implementation, reporting and regulatory compliance. Our professionals have an in-depth understanding of the key issues facing financial institutions and provide practical services to *vertiv's* clients. Our client service teams, work closely with clients to create powerful business solutions for organizations around the world. We have the ability to offer a true global, integrated approach to business issues that combines insight and innovation from multiple disciplines with a wide range of business and industry knowledge to help organizations excel anywhere in the world.

Contact for more information about our services,

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