IMPROVING DATA COLLECTION
FOR DIGITAL FINANCIAL SERVICES SUPERVISION

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Logistics

1. This is an audio broadcast. Attendee microphones will remain muted during the entire webinar session.

2. To ask questions during the webinar, please use the Chat box on the right-hand side of the Webex session. Please submit your question at any time during the webinar presentation.

3. To ensure your question is seen by the moderator, select “All Participants” from the drop down menu when sending your question.

4. The webinar recording will be emailed to all attendees and registrants.
## Agenda

1. Data challenges for digital financial services supervisors
2. SupTech solutions
3. Bank of Rwanda
4. Panel discussion
5. Q&A
Data challenges for digital financial services supervisors

CGAP research
Effective digital financial services (DFS) supervision is essential for sustained, healthy financial inclusion.

Data is at the core of financial supervision.

Quality DFS data is central for effective DFS supervision.
CGAP research on DFS data

Desk research

Leading emerging markets and developing economies (EMDE) where DFS for financial inclusion have achieved scale or are growing rapidly

Developed economies for comparison

EMDEs that have either or both agent regulations and e-money regulations

European Union (EU), because of its wealth of relevant material and the potential application of certain practices to DFS supervision in EMDEs

In-person or phone interviews

Primary responsibility for supervision of the institutions that offer DFS (central banks or supervisory authorities). In Mexico, Consar (pensions regulator) also included

Some DFS providers and providers of IT and consulting solutions
### Types data collected by DFS supervisors

Periodic reporting of DFS data in the researched countries focuses on operational data.

<table>
<thead>
<tr>
<th>FINANCIAL</th>
<th>OPERATIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantitative</td>
<td>• Volume and value of transactions</td>
</tr>
<tr>
<td>Financial statements (balance sheet, cash flow, income statement)</td>
<td>• Number of transaction points (e.g., agents, ATM, point of sale)</td>
</tr>
<tr>
<td>Financial ratios (capital adequacy ratio, liquidity ratio, and others)</td>
<td>• Number of accounts and total balances</td>
</tr>
<tr>
<td>Qualitative</td>
<td>• Losses from frauds, consumer compensations</td>
</tr>
<tr>
<td>Explanations to financial statements</td>
<td>• Policies and procedures</td>
</tr>
<tr>
<td></td>
<td>• Description of fraud and actions taken, actions taken on consumer complaints, IT systems, risk management practices, accounts of service disruptions</td>
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</tbody>
</table>
Types of DFS data collected

- Financial data on e-money issuers
- Operational data on e-money issuers and e-money operations
- Risky and suspicious transactions
Types of operational data on e-money issuers

- Number and types of accounts and clients
- Transaction data
- Data on e-money agents
Types of risk data and suspicious transactions

Almost all studied countries require statistics on suspicious transaction reports (STRs) and statistics and descriptions of:

– fraud
– data security breaches
– service disruptions

Only a few require reporting of volumes and values of failed and pending transactions, reversals
Important to limit compliance costs

Keeping compliance costs down is important for DFS in a financial inclusion context.

Relative cost of dedicating staff time to regulatory reporting can affect inclusive providers more.

Some researched countries have lower or no reporting requirements for small nonbank e-money issuers.
Costs depend on data collection mechanisms

Regulatory reporting costs depend more on the **data collection mechanism** than on the amount of data.

Reporting a small amount of data that need to be aggregated and formatted into separate report templates can be more costly than reporting a larger quantity of granular data through an automated process that does not use report templates.
Findings on DFS data reporting/collection

Transparency is greater in advanced economies

- Only a minority of countries publish report templates
- Most EMDEs do not detail the reporting requirements in their websites

There is no single recipe for DFS report template that would work in multiple countries

- Broad DFS data categories do not vary much but sub-categories vary widely
- Multiple combinations of sub-categories
- Variation in key terms and concepts
- Periodicity varies
Weaknesses in DFS data reporting

Inconsistencies
Unclear or inconsistent use of key terms within report templates and across report templates

Gaps
Gaps and inconsistency of consumer complaints reporting requirements across different types of institutions

Duplications
Banks subject to detailed reporting on agents while nonbanks are not, when there is no single agent regulation
The process to create/change reporting requirements

Informal and unstructured, limited to the department that requests the data

Formal, standardized procedures that involve coordination among multiple departments and authorities and consultation with the industry
Centralized data collection

A unit that functions as a central data source for all other departments, being responsible for prioritizing and implementing all periodic electronic data collection, including DFS data.

Act as the interface between different departments when creating/changing reporting requirements and when implementing improvements in the data collection mechanism.

Keep a single catalog of all regulatory reports imposed on all types of institutions helps to avoid duplicate requirements, which could help in estimating the total reporting burden.
Manual processes persist in reporting

- Multiple systems (e.g., product systems or modules, AML/CFT, customer care, core banking, mobile money, etc.).

- Systems that are incompatible with the system used by the compliance unit to fill in the report templates.

- Reporting formats that create difficulties given the IT architecture of an institution.

- Systems housed at different departments or outside the institution (e.g., AML/CFT, customer care).

- Gaps or errors in the automated aggregation and standardization of raw granular data.

Difficulties may also be caused by the system put in place by the supervisory authority, such as reporting portals.

—Office of Financial Research 2015
Manually report submission management

Managing regulatory submissions is less time-consuming and more effective when using IT tools. In Europe, most supervisors keep automated controls of regulatory submissions.

In studied EMDEs controls of submissions are mostly done manually using Excel spreadsheets.

Automating submission management involves developing IT systems to collect, store, and periodically update master data.
Lack of standardization
These words can mean different things for different institutions

<table>
<thead>
<tr>
<th>Agent</th>
<th>Mobile wallet</th>
<th>Transaction types</th>
<th>Client types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent point</td>
<td>E-money account</td>
<td>Sorting transaction categories</td>
<td>Account types</td>
</tr>
<tr>
<td>Agent till</td>
<td>Mobile money account</td>
<td>Cash-in, Cash-out, Transfers</td>
<td>Retail (final)</td>
</tr>
<tr>
<td>Transaction device</td>
<td>Location</td>
<td></td>
<td>Customer/ accounts</td>
</tr>
<tr>
<td>Cash point</td>
<td></td>
<td></td>
<td>Wholesale (corporate)</td>
</tr>
<tr>
<td>Super-agent</td>
<td></td>
<td></td>
<td>customers (includes agent and merchant accounts)</td>
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</tbody>
</table>
Lack of standardization

Most countries in the study consider an account or agent active when there is at least one transaction in the past 30 or 90 days, but not all country regulations define these terms.

Dormant agents or accounts are usually those that have been inactive for a certain period.

These categories are important for monitoring operational risk.
**Impact of observed weaknesses**

The observed weaknesses can lead to:

- Inaccurate, delayed reported data
- Not comparable data across institutions
- More time spent by supervisor fixing data problems ("cleaning data")
- Higher compliance costs

→ Reduced effectiveness of DFS supervision

**How to address weaknesses**

Better planning and standardization.
Technology to reform collection mechanism.
Emerging supervisory approaches require better data

- Shifting from focus on reports to underlying data
- Expanding and automating the collection and analysis of unstructured data
- Increasing the scope of data
- Reducing the time to report and manual procedures

The higher the level of data granularity, frequency, and scope, the greater the need to reform the data collection mechanism.

RegTech and SupTech offers solutions for data reporting and collection.
Shift to granular data
If adequate analytical skills and resources are available

Greater flexibility for richer supervisory insights
- Supervisors calculate any desired indicator
- Ensure calculations are correct and standardized
- Limitless number of analyses
  - Manipulating, combining
  - Finding relationships across data points
  - Not constrained by predefined indicators

Most of today’s EMDE DFS supervisors not accustomed to granular data

Depending on the data collection mechanism, granular data could reduce compliance costs for institutions
Deciding about granularity

<table>
<thead>
<tr>
<th>How would granularity impact compliance costs?</th>
<th>Is there legal impediment for collecting granular data?</th>
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<tbody>
<tr>
<td>Is there analytical capacity to standardize, validate, and analyze granular data?</td>
<td></td>
</tr>
<tr>
<td>What extra insights could granular data provide?</td>
<td>Would the supervisor be risking its reputation?</td>
</tr>
<tr>
<td>Would a reform of the data collection mechanism be required to avoid excessive compliance costs and ensure data quality?</td>
<td></td>
</tr>
</tbody>
</table>
Types of data collection mechanisms

- Separate files (Excel, PDF, Word, TXT, etc.) that are sent electronically (email attachments, web portal, or another file transfer system) or provided in hard media (e.g., memory stick)
- Automated processes or a mix of automated and manual processes
- Input approach, in which sets of granular data are uploaded automatically by the institution into a database at or accessed by the supervisor.
- Pull approach, in which raw granular data are extracted (pulled) by the supervisor from the institution’s IT systems.
New tech-fueled alternatives

Data input approach

Data pull approach

Reporting utilities

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EMDEs lack heavy legacy systems, practices, infrastructure, and fully developed regulatory and supervisory frameworks.

Gradual steps taken by, and the approaches currently adopted in, advanced economies may not be necessary for EMDEs.
Hurdles to new solutions

Some RegTech and SupTech solutions rely on technologies that may not be well-understood, well-accepted, or legally permitted in certain EMDEs, such as cloud computing.
DFS data as part of wider strategy

Some EMDE authorities lack an overarching strategy and interdepartmental coordination for improving regulatory data beyond DFS data.

This may result in

- Fragmented, duplicate and uneven data quality
- Outdated mechanisms co-existing with state-of-the-art mechanisms
- Encompassing reforms of data collection mechanisms to support effective supervision should be pursued.
Data collection and analytical capacity

Improving DFS or any data collection will bring limited benefit if there is no adequate analytical capacity at supervisory authorities to transform the data into supervisory intelligence.

Capacity may be lacking to map data needs in the first place, and to standardize data effectively.
SupTech Solutions

BearingPoint
Improving data collection for DFS supervision

Experiences with integrated approach for collection, processing, validation, analytics and dissemination of micro and aggregated data
We provide end-to-end solutions for all stakeholders along the regulatory value chain. From a single financial product to an individual organization, from a particular asset class to a market sector, in one country and across borders at the micro and macro level. We serve financial institutions, intermediary regulatory platforms, central banks, and supervisory authorities with our RegTech product suite.
Regtech could address a wide array of requirements related to regulatory reporting, financial crime, operational risk (including cybersecurity and fraud detection), consumer protection and data protection regulation. Examples in these domains include BearingPoint’s Abacus solution for compliance with the European supervisory reporting requirements…

“Banks will find it increasingly difficult to maintain their current operating models, given technological change and customer expectations.”

Sound Practices: Implications of fintech developments for banks and bank supervisors
Basel Committee on Banking Supervision

Revitalised or relegated? #BaselCommittee report looks at #Fintech effects on banks & bank supervisors http://www.bis.org/bcbs/publ/d415.htm …
World Bank & G20 Global Partnership for Financial Inclusion (GPFI) quotes BearingPoint Institute and highlights the AuRep project in its report

#GPFI referencing our #RegTech & the AuRep project in the #G20 report on Digital Financial Inclusion: Creating an Enabling Legal and Regulatory Framework

**AuRep** project as notable exception for leveraging technology to build oversight capacity automating Regulatory Reporting and Supervision input-based” approach that enable regulators to capture more granular data on financial sector activity, including on activity by new market entrants, or related to new digitally-enabled delivery mechanisms or products, while **reducing the reporting burden on regulated institutions.**
Abacus360 Regulator

Modular solution for data collection, risk-based supervision, regulatory analytics and dissemination

Abacus360 Regulator

Supervisory and Statistical Processes

**Basel / Solvency XBRL collection**

1. XBRL validation and Filing Rules
2. Import
3. Internal checks
4. KPI/KRI calculation and breach reporting
5. Visualisation and aggregated reports
6. Analytics
7. Remittance & dissemination

**Granular/ CCR collections**

1. SDMX validation and Filing Rules
2. Import
3. Internal checks
4. KPI/KRI calculation and breach reporting
5. Visualisation and aggregated reports
6. Data-analytics
7. Remittance & dissemination

**Ad-hoc collection**

1. Data input
2. Online validations
3. Import
4. KPI limit check
5. Internal validations
6. Analytics
7. Remittance & dissemination

Regulated FIs

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"We managed to report with ABACUS/Regulator in July, and the data was good quality. Both sides were proud of the performance."
Simona Chiochiu, head of IT at the National Bank of Romania (December 2015)
"They sent very good consultants from the beginning who really knew what our experts were talking about ... The goal was always very clear, and the way to reach the goal was very straightforward" major European Central Bank

ABACUS/Regulator for Solvency 2 and Basel III ICAAP collection, aggregation and distribution
Austrian regulatory data collection model

“The Austrian model ‘ensures consistent, and highly qualitative data, whilst ‘reducing the amount of checking we have to do… The big win for the banks is that they are not burdened with the problem of completing templates on many different topics’.”

Johannes Turner, director of statistics at the National Bank of Austria (March 2015)
Largest regulatory data collection, aggregation and distribution factory worldwide

"ABACUS/GMP is still being rolled out, but the signs are positive so far. It works, it really works”
Johannes Turner, director of statistics at the National Bank of Austria (December 2015)

… regulators still struggle with legacy systems, and the pace of reporting and monitoring modernization … is often behind where it needs to be given the rate of growth with notable exceptions”, G20 Global Partnership for Financial Inclusion

Approximately 1200 registered GMP users

All major Austrian banking groups (over 1000 MFI with target for 1400)

2 000 000 000 granular data sets per date (loans, securities, counterparties)
18 000 files per month

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Abacus360 Regulator @ numerous regulators in Europe

Fully integrated solution for granular data collection and central credit register
Abacus360 Regulator

Integrated platform for collection, analysis and dissemination of supervisory and statistical data for central banks and regulatory authorities
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http://reg.tech
#RegTech
National Bank of Rwanda
The new data collection system
Why an electronic data warehouse?

- Develop efficient and integrated data repository center
- Eliminate statistical inconsistencies
- Enable efficient data capture
- Enable efficient access to data and information
- Create environment for efficient data sharing
- Integrate data from multiple sources
- Develop centralized approach to data analysis and reporting
- Enable development and utilization of business intelligent tools and strategies
Addressed challenges of old reporting framework

Manual reporting (external stakeholders)
- Heavy resource requirements
- Time-consuming and inefficient
- High costs and information comes after reporting period

Data consolidation (NBR)
- Data spread across multiple systems
- Manual consolidation time consuming
- Data integrity issues

Regulatory reporting
- Central bank reporting manual and time-consuming
- High cost of errors, inaccuracies, audits, and compliance issues
- No audit trails in case of any manual reporting
Other benefits

- Consolidate and improve the quality of countrywide financial data.
- Everyone in Rwanda looks at the same numbers and information.
- Providing accurate, complete and timely information helps in formulating the right policy at the right time.
- Automating entire BNR reporting not only saved time and cost for all stakeholders but also improved accuracy and efficiency.
- Improve reporting turnaround time by using an efficient & seamless reporting tool across the region.
- Deep dive analytics by segments, products, customers, regions as well as analyze trends across dimensions.
- To take course corrections ahead of time rather than analyzing the data at end of the period.
Architecture

External Stakeholders
- Banks
- MFIs
- Insurance FIs
- MNOs
- MTOs

Staging Area
- Extract
- Transform
- Validate

Data Marts (HTML5)
- Interactive Dashboards
- Report Suite
- Catalogue
- OLAP Analytics

Metadata Layer
- Historical
- Financials
- Non Financials
- Operational
Data Flow ADF/Uploads Architecture and Components

- **External Stakeholders**
  - Banks
  - Insurance
  - MNOs & MTOs
  - Micro Finance
  - Exchange Houses
  - Government Departments

- **Internal Stakeholders**
  - T24
  - ERP
  - Payment System
  - Credit Reference Bureau
  - Internal Statistics
  - Publications

- **Data Transmission** (Internet/Intranet)
- **Interface** (DB link, Web Service, Adapter)
- **Frequency** (Daily, Weekly, Monthly, Annual)
- **Data Connectivity** (Push, Pull, Push & Pull)
- **File Type** (XBRL, XML, Excel, CSV)
- **Staging Area**
- **Data Integrity / Validation**
- **Data Controls** (Console, Auditing, Alerts, Checklist)
- **Database**
Initial Requirements from External Stakeholders

- Name of core system
- Other applications
- Database type
- Network type
- Dedicated focal persons (here most institutions have nominated)
## Type of Digital Financial Services Data

<table>
<thead>
<tr>
<th>Sr No</th>
<th>Template_Name</th>
<th>Template_Description</th>
<th>Frequency</th>
<th>Template File Name</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>PAYAGENT</td>
<td>Payment Agent Info</td>
<td>Monthly</td>
<td>BNR Upload Format For MNO - Payment Agent v1.0.xlsx</td>
</tr>
<tr>
<td>2</td>
<td>NETWPERF</td>
<td>Network Performance</td>
<td>Monthly</td>
<td>BNR Upload Format For MNO - Operational Performance v1.0.xlsx</td>
</tr>
<tr>
<td>3</td>
<td>CHWAYFWD</td>
<td>Challenges WayForward</td>
<td>Monthly</td>
<td>BNR Upload Format For MNO - Challenges WayForward v1.0.xlsx</td>
</tr>
<tr>
<td>4</td>
<td>MNOCONPR</td>
<td>MNO - Consumer Protection</td>
<td>Monthly</td>
<td>BNR Upload Format For MNO - Consumer Protection v1.0.xlsx</td>
</tr>
<tr>
<td>5</td>
<td>MNOCUSACT</td>
<td>MNO - Cust Acct Summary</td>
<td>Monthly</td>
<td>BNR Upload Format For MNO - Cust Acct Summary v1.0.xlsx</td>
</tr>
<tr>
<td>6</td>
<td>MNOFRMGT</td>
<td>MNO - Fraud Management</td>
<td>Monthly</td>
<td>BNR Upload Format For MNO - Fraud Management v1.0.xlsx</td>
</tr>
<tr>
<td>7</td>
<td>MNOSUBGEN</td>
<td>MNO - Subscriber Gender Age</td>
<td>Monthly</td>
<td>BNR Upload Format For MNO - Subscriber Gender Age v1.0.xlsx</td>
</tr>
<tr>
<td>8</td>
<td>MNOTXN</td>
<td>MNO - Transactions</td>
<td>Monthly</td>
<td>BNR Upload Format For MNO - Transactions v1.0.xlsx</td>
</tr>
<tr>
<td>9</td>
<td>MNOTRUST</td>
<td>MNO - Trust &amp; E-Platform Account</td>
<td>Daily</td>
<td>BNR Upload Format For MNO - Trust &amp; E-Platform Account v1.0.xlsx</td>
</tr>
</tbody>
</table>
What’s Next

Current status
• All MNOs now connected and data pulled on a daily or monthly basis.

Challenges
• Gaps in business processes leading to not capturing most important customer information (e.g., sender or receiver location).
• MIS gaps missing some important fields for KYC (e.g., gender).
• Initially poor coordination and ownership caused delays in implementation.

Next steps
• Data validation before complete cut off of manual reporting (by Dec 2018).
• MNOs to update core systems in order to capture KYC requirements.
• MNOs to automate business processes (e.g., complaint and fraud handling and management).
Thank you

To learn more, please visit

www.cgap.org