



REGTECH FOR REGULATORS  
ACCELERATOR



## REQUEST FOR APPLICATIONS

**PROJECT:** Development of a Prototype Application Programming Interface (API) and Back Office Reporting and Visualization Application for the Bangko Sentral ng Pilipinas' Financial Regulatory Reporting System

**PROJECT LOCATION:** Metro Manila, PHILIPPINES

**GRANTING ENTITY:** Rockefeller Philanthropy Advisors (RPA)

**MAXIMUM GRANT VALUE:** US\$100,000

**PUBLICATION DATE:** 3 October 2017

**PROPOSAL SUBMISSION DEADLINE:** 29 October 2017 23:59 Manila Time (UTC + 08:00)

**PROJECT IMPLEMENTATION DATES:** December 2017 – June 2018

**SELECTION PROCESS MANAGED BY:** BFA, as part of the RegTech for Regulators Accelerator (R<sup>2</sup>A) Project

**SUBMISSION:** E-mail all documents to Aneth Kasebele at [akasebele@bfaglobal.com](mailto:akasebele@bfaglobal.com), with a copy to Chris Page at [cpage@rockpa.org](mailto:cpage@rockpa.org), and subject line "RFA: R<sup>2</sup>A Philippines Project"

**LANGUAGE:** All submissions must be written in English.

# I. Introduction

## The RegTech for Regulators Accelerator (R<sup>2</sup>A)

The RegTech for Regulators Accelerator (R<sup>2</sup>A) partners with leading financial sector authorities to pioneer the next generation of tools and techniques for market supervision and policy analysis. Financial authorities want to better monitor and understand financial marketplaces that are increasingly complex and innovative. R<sup>2</sup>A accelerates this capability by helping them re-imagine how they collect and manage data and prototyping new solutions to strengthen their capacities. Through R<sup>2</sup>A, partner financial authorities seek to harness technology to improve the speed, quality and comprehensiveness of information in support of targeted, risk-based decision-making.

Accessing new data sets and more effectively analyzing the available data would allow financial authorities to establish a body of knowledge and evidence to drive risk-based, smart policy reforms that promote financial inclusion while ensuring financial stability and integrity.

Launched in October 2016, R<sup>2</sup>A is partnering with the Bangko Sentral ng Pilipinas, the Bank of Ghana, and the Mexican Comisión Nacional Bancaria y de Valores to develop and test next-generation RegTech prototypes that could serve as examples for other supervisors and regulators to follow. R<sup>2</sup>A also engages closely with technology innovators, creating structured opportunities for them to propose solutions and collaborate with financial authorities in the design and testing of promising ideas.

This initiative is funded by the Bill & Melinda Gates Foundation, Omidyar Network, and the U.S. Agency for International Development. The project is managed by BFA with Rockefeller Philanthropy Advisors (RPA) as fiscal sponsor. For more information about this program, please visit [www.R2Accelerator.org](http://www.R2Accelerator.org).

# II. Project description

## Project summary

In the context of the R<sup>2</sup>A initiative, the Bangko Sentral ng Pilipinas (BSP, the Central Bank of the Philippines) has requested the development of an Application Programming Interface (API) and back office reporting and visualization application (the Project) to:

- (i) Allow financial institutions to submit data digitally and automatically to the financial authority;
- (ii) Increase the volume, granularity, and frequency – and improve the quality – of data submitted to the central bank; and
- (iii) Enable BSP staff to improve data validation and analysis and generate customized reports for supervisory and policy development purposes.

By improving data quality and access and developing new tools for data visualization and analysis, the Project will support the BSP's efforts to effectively implement a risk-based supervisory approach that reduces compliance costs and promotes financial inclusion while ensuring financial stability and integrity. Moreover, the BSP will be able to capture crisper insights on the Philippine financial sector that will be used to develop policies such as the financial inclusion strategy.

## The BSP Application Programming Interface (API) and back office reporting and visualization application

Most of the data analyzed by central banks to determine the health of supervised institutions and the overall financial sector come from reports that financial institutions submit periodically to the financial authorities. Compliance reports are submitted using specifically created and curated Excel spreadsheet templates that are transmitted via mail, e-mail, or web portals. Each financial institution must fill out multiple Excel spreadsheets on a daily, weekly, monthly, quarterly, or annual basis, depending upon the requirements set by the regulator for different types of data and firms. Filling out these spreadsheets is time-consuming and resource-intensive for financial institutions. Much of the data submitted is duplicated across many other reports and is simply presented slightly differently for different purposes. Errors and delays – and therefore penalties – are common.

The BSP's Supervisory Data Center (SDC) receives reports that are often incomplete, late, and/or inconsistent. Data cleaning and validation consumes significant resources. The e-mailing of compliance reports (and follow-up communication to address inconsistencies and errors) is inherently insecure. Web portals are a step in the right direction but still introduce a human security risk factor. The SDC transfers (and often aggregates) manual data from compliance reports into new Excel forms that are used by analysts, supervisors, and regulators. Any requests for additional information not included in the regular reports must be submitted to the SDC, which must then create a new report manually. Because the process is heavily manual and resource-intensive, the quantity of available data that is actually analyzed is limited. These challenges are common to most central banks.

Through this project, R<sup>2</sup>A and BSP will pioneer the development of an Application Programming Interface (API) and back office reporting and visualization application. This prototype will

- (i) Allow financial institutions to submit data digitally and automatically to the financial authority;
- (ii) Increase the volume, granularity, and frequency – and improve the quality – of data submitted to the central bank; and
- (iii) Enable BSP staff to improve data validation and analysis and generate customized reports for supervisory and policy development purposes.

The project will deliver a prototype rather than a fully-complete, production-ready product. The prototype will be tested with two financial institutions and will treat data required for only a small subset of the required reports. This will enable R<sup>2</sup>A and BSP to test the feasibility of the prototype solution, address issues that arise, and better estimate the time and resources required to roll out a comprehensive solution to all licensed institutions.

The two institutions that will collaborate with R<sup>2</sup>A and BSP during the prototyping phase are:

- Bank of the Philippine Islands (BPI), a locally-owned bank with more than 20 subsidiaries; and
- JP Morgan Chase (JPMC), an international B2B bank.

A full-fledged solution would provide the BSP with a greater volume of more granular and higher-quality data that would also be delivered more frequently by all supervised institutions. Through a system based on APIs and containerized or otherwise packaged client software, the BSP would be able to accept and process data sets from financial institutions without requiring them to produce Excel reports. The API and client software would enable each financial institution to push data into a warehouse once at regular intervals and receive timely error messages for submitted data that does not pass validation.

Automation would allow for consistent and timely submission, which would dramatically reduce penalties for late or erroneous submissions. Automation would also improve the data validation process by detecting duplicate submissions and mistakes when the data are pushed to the data warehouse, thereby giving the financial institution time to make corrections. By automating the process of data submission, collection, cleaning, and validation, errors would be reduced and both supervised financial institutions and the BSP would save significant time and money.

Moreover, when new regulations are issued or existing ones are amended, reporting requirements are often revised and templates must be updated. Each financial institution needs to understand the new requirements, update validation formulas, and update the existing templates. This process is time-consuming, and mistakes are common. Since the type and scope of data sent by the financial institutions typically does not change (only the manner in which it is structured), generating reports from raw data would allow the BSP to make any required changes on their end and eliminate the need for constant revisions on the financial institutions' side.

The BSP would extract data in different ranges using SQL queries. All queries would be composable<sup>1</sup> and each step would be logged. From the data submitted, the SDC would be able to generate relevant reports automatically and quickly. Customized reports could be created by BSP staff without requiring the SDC's intervention. Visualization software would allow the data to be presented in a more meaningful and digestible way. This would allow the creation of charts, graphs, and dashboards in near-real time. Data could be requested at much faster intervals (hourly even) so that more granular statistics and measurements could be generated. Ultimately, more data could be generated and analyzed.

Finally, data security would be dramatically improved since automated communications would be secured with industry-standard encryption, including any measures specifically called for by financial regulation. At a minimum, all communications would be secured with industry-standard SSL/TLS.

## Description of required prototype

From a technology perspective, APIs are a “solved problem” in that the necessary components and specifications for data transmission, security, and storage of the resulting data have been either standardized or formalized into best practices. The challenge for the selected vendor will be applying these technological best practices and standards in the Philippine regulatory and supervisory context. Thus, the organizations that submit proposals do not have to be solely RegTech- or FinTech-focused,

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<sup>1</sup> Composable queries promote the ability to pass data from a base query to an outer query, in essence chaining building blocks of a query together. This is a powerful way to build queries component-wise such that the amount of code needed is minimized and the performance is maximized. The primary benefit of composability is that the base query results may be further manipulated (e.g., filtered, paginated, sorted, merged, etc.) by an outer query.

but may need to meet with the BSP to understand validation rules, regulation, and other contextual constraints. Any tech firm or team with the relevant technical expertise is encouraged to apply.

Prototype requirements include:

- The development of a single, standalone application that will expose an API for two test financial institutions to build against, in order to allow for the digital submission of financial figures for two pre-selected compliance reports. This API will enable each financial institution to push data into a data warehouse at regular intervals.
- The ability to collate data and to run previously created validation formulas (usually contained as macros in Microsoft Excel documents at present) against all data submitted. This will serve to ensure that any data submitted are useable even during the prototype phase.
- Storage of all submitted data in a manner that allows extraction through pre-written SQL queries. All queries will be composable and each step will be logged.
- At a minimum, industry-standard SSL/TLS security for all communications.
- Data storage in a single central location, with the intention that reports will be generated from the data via SQL queries, to ultimately allow visual reports such as graphs to be generated on the back end.

The Project has four phases: (i) interface design for a prototype API, (ii) development of a prototype API (Proof of Concept); (iii) testing of the API; and (iv) analytics and visualization of the data.

### (I) INTERFACE DESIGN (INTEGRATION SPECIFICATIONS)

During the first phase, the selected vendor will gather requirements from the BSP and the two partner financial institutions and provide an initial design document that includes integration specifications. This living document should include specifications for the client-facing portion of the API, communicated in a manner such that clients of the API can understand how to integrate and submit data without necessarily understanding the entire architecture behind the API software. This document is to be shared with the two partner financial institutions to allow them to develop client-side software during the development phase.

### (II) DEVELOPMENT (PROOF OF CONCEPT)

As a Proof of Concept, the selected vendor will build a prototype API that allows the BSP to receive a small subset (a representative sample) of all data required in a controlled environment. Any data being submitted via the API will be sample data to start, with real data only being introduced to the system once proper security protocols are in place. Starting with a prototype and a small data set will allow the vendor to quickly identify and address any unforeseen issues early in the Project development cycle. The Proof of Concept will also facilitate candid discussions among Project stakeholders regarding issues such as technical concerns and data security.

### (III) TESTING

Once the proof of concept has been completed to the satisfaction of the involved parties, testing on real institutional data can begin. The prototype will be tested with two financial institutions to allow the vendor to ensure that the API can handle the delivery, receipt, validation, and storage of real data before the prototype is scaled and rolled out to other supervised institutions. This approach also minimizes the risk of interruption due to unforeseen technology failure and serves to inform estimates of the cost to scale the prototype to a production-grade service.

#### (IV) ANALYTICS AND VISUALIZATION

Once the prototype API has been developed and tested with the partner institutions, the focus can shift from data acquisition to data analytics and visualization. The selected vendor should (i) assess the needs of the BSP to understand which dashboards, reports, and statistics are most useful and/or difficult to produce under the current reporting system; and then (ii) propose and develop a prototype mechanism for extracting and visualizing this information from data submitted via the API. This could involve creating custom SQL queries, scheduling the generation of reports, and outputting in various formats.

### III. Key qualifications

The Project requires an organization with the capacity, relevant experience, and resources required to develop a prototype API and back office reporting and visualization application for financial regulatory reporting. Key qualifications include the following:

- (i) Demonstrated ability to build and/or integrate with large public-facing APIs, to intelligently design user interfaces for non-technical and technical customers, to properly write documentation, and to maintain an enterprise ecosystem.
- (ii) Experience with data analytics and building user-interactive applications.
- (iii) Institutional understanding of tech industry best practices and familiarity with industry-standard server-side and client-facing technologies.
- (iv) Ability to dedicate sufficient staff resources (e.g., developers, a designer and a project manager) throughout the prototype development and testing stage.

### IV. Project award

The successful applicant will:

- Be awarded US\$100,000 to develop and test the required solution. This is a fixed-sum grant award, which must cover all of the applicant's expenses related to the development and testing work, including staff time, hardware, software, travel, and all other project-related expenses.
- Participate in R<sup>2</sup>A working groups to be introduced to the global community of regulators and supervisors, investors and academics that are partnering with R<sup>2</sup>A.
- Be invited to participate in other events hosted by R<sup>2</sup>A partners to (a) understand the needs of emerging market financial authorities and (b) explore innovative solutions.
- Be featured in the R<sup>2</sup>A website and publications as a pioneer within the emerging RegTech for Regulators community.

- Benefit from association with prominent organizations such as the Bill & Melinda Gates Foundation, the Omidyar Network and the US Agency for International Development, the three funders of R<sup>2</sup>A.

## V. Timeline for applicant selection and project implementation

The awardee will be announced in November 2017, with work commencing in December 2017. This Project will ultimately deliver a prototype no later than 1 June 2018.

DATE	ACTIVITY
3 October 2017	Application period opens
29 October 2017	Application deadline
27 November 2017	Proposal review completed
28 November 2017	Winning applicant notified
6 December 2017	Project start date
1 June 2018	Project completion

## VI. Rules and guidelines

### Key features

Key features of this initiative are:

- Rapid turnaround time: We will select the winning vendor and award the \$100,000 USD within approximately one month of proposal submission.
- Blinded review process: After a shortlist is developed, reviewers with a track record in identifying innovative ideas will rate shortlisted proposals without knowing the name of the vendor submitting the proposal.

### Tips for applicants

- Your proposal must demonstrate an innovative approach that meets all stated goals and complies with all restrictions and guidelines.

- ii. Personal and organizational information submitted in Part 1 of the proposal will be evaluated to create a shortlist. Shortlisted proposals are sent to reviewers without personal or organizational information. Do not include this information in Part 2 of your proposal. Proposals that include personal or organizational information in Part 2 of the proposal may be automatically removed from consideration. See [“How to Apply”](#) below for more details.
- iii. In addition to subject matter experts, your proposal will be reviewed by a panel with broad expertise and a track record in identifying innovations – these reviewers may not be deep domain experts in your field. You must describe your ideas in clear language without the use of jargon unique to your field.
- iv. The work proposed in your application must include a clear set of key activities required to develop and test the prototype solution. Proposals with vague descriptions or vague methodologies will not be funded.

## How to apply

You are required to submit a Microsoft Word® document or another document capable of being read by Microsoft Word® software. Proposals must adhere to the following page limits:

- *Part 1 – Experience, expertise, and resourcing:* No more than 5 pages in length (minimum 11-point font). Additional information such as CVs and examples of prior relevant experience may be included in an Annex. No page limits apply to the Annex, but evaluation of Part 1 will be based primarily upon the information included in the body of the proposal.
- *Part 2 – Technical proposal and execution plan:* No more than 10 pages in length (minimum 11-point font).

For more information regarding the content of Parts 1 and 2, please see [“REVIEW OF PROPOSALS”](#) below.

The information that you provide to us may be shared with external reviewers and the R<sup>2</sup>A Steering Committee.

## Eligibility

This RFA is open to organizations worldwide, including non-profit organizations and for-profit companies.

## Review process

### HANDLING OF PROPOSALS

The R<sup>2</sup>A project’s policies are intended to restrict public dissemination of application materials. These policies and procedures include having external reviewers sign confidentiality agreements and requiring that reviewers destroy or return to the R<sup>2</sup>A project all copies of information acquired or created during the course of performing a review.

## REVIEW OF PROPOSALS

The review process is executed in four steps:

- (i) First, Part 1 of each application will be reviewed internally by the R<sup>2</sup>A project team to create a shortlist. For the purposes of creating the shortlist, applicants will be evaluated according to the following criteria:
  - **Relevant experience (50%)**, as demonstrated by a list of representative past projects, including examples of prior experience specifically related to the development of APIs and back office reporting and visualization applications as per the requirements detailed in the RFA;
  - **Technical and managerial expertise (30%)**, as demonstrated by information on the qualifications of key staff to be involved in the Project; and
  - **Adequate resourcing (20%)**, as demonstrated by the ability to devote sufficient resources to complete the work within the established timeframe.

A maximum of three applicants will be shortlisted for further consideration.

- (ii) Next, Part 2 of each short-listed application is reviewed. The reviews are chaired by the R<sup>2</sup>A project director and are conducted by reviewers from outside the R<sup>2</sup>A project. Reviewers are selected from the world's leading innovative minds and comprise both experts in the topic area and experts in complementary areas with a track record of innovation. (Not all reviewers have deep expertise in the topic; please consider this information when drafting your proposal.) Proposals are sent to reviewers without applicants' personal or organizational information from Part 1.

The criteria considered during this phase are:

- **Innovative Approach:** Does the idea offer a creative approach to the problem outlined in the topic?
  - **Topic Responsiveness:** How well does the proposal address the key needs illustrated in the RFA?
  - **Execution Plan:** Is the work described feasible within the budget and time allocated for the project?
- (iii) Step 3 involves validation and selection of the winning proposal based upon feedback from reviewers during the second step of the evaluation.
  - (iv) Finally, the R<sup>2</sup>A project conducts a due diligence review of the firm submitting the winning proposal to ensure that applicants are appropriate recipients of project funds. This due diligence review ensures that the applicant has the basic capacity to (i) receive the award (taking into consideration legal requirements to which the R<sup>2</sup>A project is subject) and (ii) perform the work described. Applicants will be contacted as part of the due diligence review.

## MANAGEMENT OF CONFLICT OF INTEREST

To identify and avert conflicts of interest among reviewers, reviewers will not be permitted to review proposals from organizations with which the reviewer has a self-identified conflict of interest.

## Key elements of R<sup>2</sup>A project agreements

- R<sup>2</sup>A projects have a term of ~6 months beginning on the Project start date (see timeline on page 7).
- The amount awarded is \$100,000 USD.
- Grant funds may not be used to reimburse expenses incurred prior to the Project start date.
- The applicant must return a fully executed agreement to RPA no later than the date and time indicated by the R<sup>2</sup>A project team. Upon receipt of a fully executed agreement, RPA will disburse the first \$50,000. RPA will disburse the second \$50,000 upon satisfactory completion of all of the following project requirements:
  - a. Drafting an initial design document with integration specifications to be shared with the two partner financial institutions to allow them to develop client-side software during the development phase. This living document should include specifications for the client-facing portion of the API, communicated in a manner such that clients of the API can understand how to integrate and submit data without necessarily understanding the entire architecture behind the API software.
  - b. Development of a single, standalone application that will expose an API for two financial institutions to build against, in order to allow for the digital submission of financial figures for two pre-selected compliance reports. The API solution must satisfy the following requirements:
    - i. Ability of each financial institution to push data into a data warehouse at regular intervals.
    - ii. Ability to collate data and to run previously created validation formulas (usually contained as macros in Microsoft Excel documents at present) against all data submitted.
    - iii. Storage of all submitted data in a manner that allows extraction through pre-written SQL queries. All queries will be composable and each step will be logged.
    - iv. At a minimum, industry-standard SSL/TLS security for all communications.
    - v. Data storage in a single central location, with the intention that reports will be generated from the data via SQL queries, to ultimately allow visual reports such as graphs to be generated on the back end.
  - c. Testing the API with sample data.
  - d. Testing the API with real institutional data from two financial institutions to allow the vendor to ensure that the API can handle the delivery, receipt, validation, and storage of real data before the prototype is scaled and rolled out to other supervised institutions.
  - e. Developing a prototype for data extraction and visualization. The selected vendor should (i) assess the needs of the BSP to understand which dashboards, reports, and statistics are most useful and/or difficult to produce under the current reporting system; and then (ii) propose and develop a prototype mechanism for extracting and visualizing this information from data submitted via the API. This could involve creating custom SQL queries, scheduling the generation of reports, and outputting in various formats.
  - f. Submitting a final Project Report (see “[Project reporting](#)”, below).
- Joint proposals are welcome, provided that a lead organization is identified for the purposes of contracting and communication with RPA and the R<sup>2</sup>A project team. Subject to RPA approval, awardees may be permitted to subcontract for services, up to a maximum of

\$49,999 USD. Please be aware that this limit applies to funds paid by an awardee to any other organization (or an individual employed at another organization) as a subcontractor, including payments to collaborators working at another organization.

- All awardees are entitled to purchase equipment, provided that the cost of each item is less than \$5,000 USD. Purchase of items of equipment exceeding \$5,000 USD is subject to RPA approval.
- Project funds may be used to cover the full direct costs of the project, but no awardee will be entitled to use funds to cover indirect costs. Indirect costs are defined as (1) overhead expenses incurred as a result of the Project, but that are not easily identifiable with the Project; and (2) administrative expenses that are related to overall general operations and are shared among projects and/or functions. Examples of indirect costs include, but are not limited to, executive oversight, accounting, grants management, legal expenses, utilities, and facility maintenance.
- For-profit non-US awardees may not use more than 20% of Project Funds for activities in the U.S., including travel to or from the U.S.
- Awardees will be required to sign a project agreement that sets out the rights and responsibilities of the awardee and RPA. Awardees understand that (i) Project Funds have been contributed by private charitable entities; (ii) the knowledge and information gained from the Project will be promptly and broadly disseminated; and (iii) Project outputs will be made available at an affordable price to financial authorities within developing countries.

## Project reporting

R<sup>2</sup>A Philippines project applicants must provide as part of their proposal a plan for sharing regular progress updates with the BSP and R<sup>2</sup>A. Examples may include a shared agile sprint board, comprehensive e-mail updates, or slide decks that can be reviewed on a recurring basis.

Additionally, all awardees must prepare and submit a Final Project Report. The report should be a cumulative, stand-alone document that describes the work performed with the Project funds during the Project term. The goal of the technical section of the report is to provide context and guidance for owners/maintainers of the system going forward, so at a minimum it must include any technical data gathered, reporting templates used, models developed, validation rules implemented, and summary conclusions. The financial section of the report should include a brief summary of the manner in which you spent the project funds.

## Inquiries

Please direct all questions about this initiative, selection criteria, or application instructions by e-mail to the following address: [akasebele@bfa-global.com](mailto:akasebele@bfa-global.com).

## Disclaimer

RPA and BFA reserve the right to edit, invalidate, terminate, and/or reissue this RFA at any time and for any reason. RPA and BFA also reserve the right to select an organization through an alternate method and/or adopt an alternate timeline for applicant selection that differs from the method and/or timeline described above under “[Timeline for Applicant Selection and Project Implementation](#).” Furthermore, RPA and BFA expressly disclaim responsibility for any costs incurred by any applicant in responding to this RFA, regardless of whether the RFA is edited, invalidated, terminated, and/or reissued at any time and for any reason.