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Innovate. Transform. Succeed.

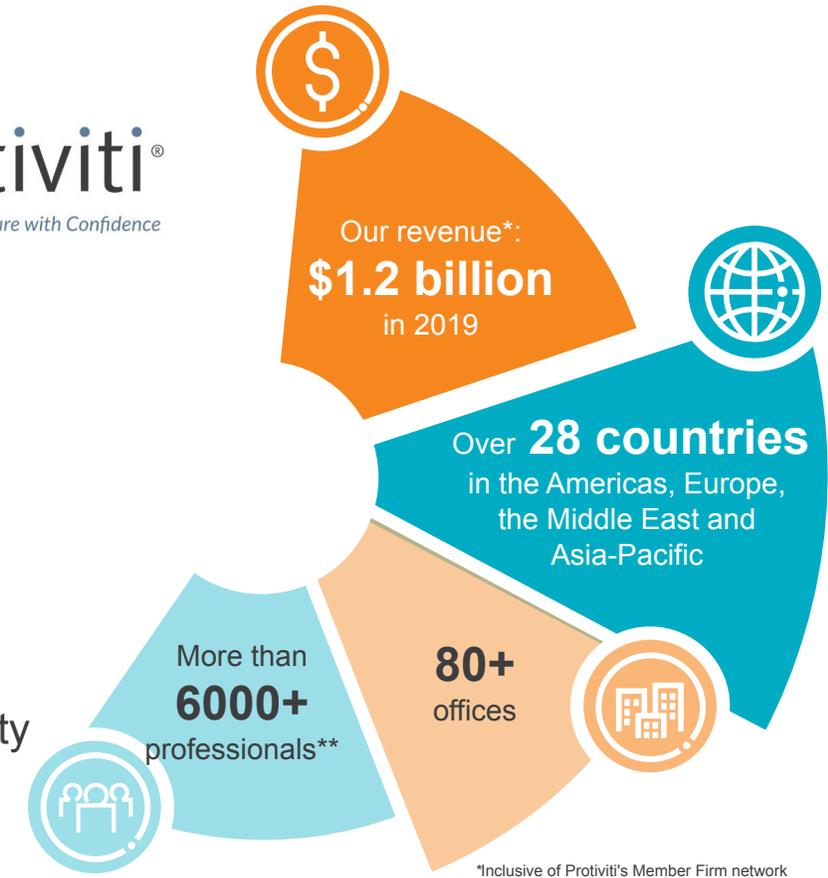
RPA Webinar

3rd December 2020

PROTIVITI OVERVIEW

Protiviti provides consulting & staff augmentation solutions in finance, technology, operations, data, analytics, governance, risk and internal audit to our clients through our network of **more than 80 offices in over 28 countries**

- **Serve 60% of Fortune 1000[®]**
- **Serve 35% of Fortune Global 500[®]**
- We also work with smaller, growing companies, including those looking to go public, as well as with government agencies.
- **Protiviti is a subsidiary of Robert Half International** – giving us a unique ability to deliver Managed Business Solutions, Perm, Temp and Staff Augmentation on top of our consulting services.  **Robert Half[®]**
- In Indonesia we collaborate with **Veda Praxis**, jointly providing local teams, with local language skills, cultural & business context while leveraging Protiviti's global capabilities, experience and teams. We see strong potential in Indonesia, we're committed to supporting clients in Indonesia.
- We're a global partner of UiPath, working closely to delivery best solutions for our clients.



GLOBAL PRESENCE



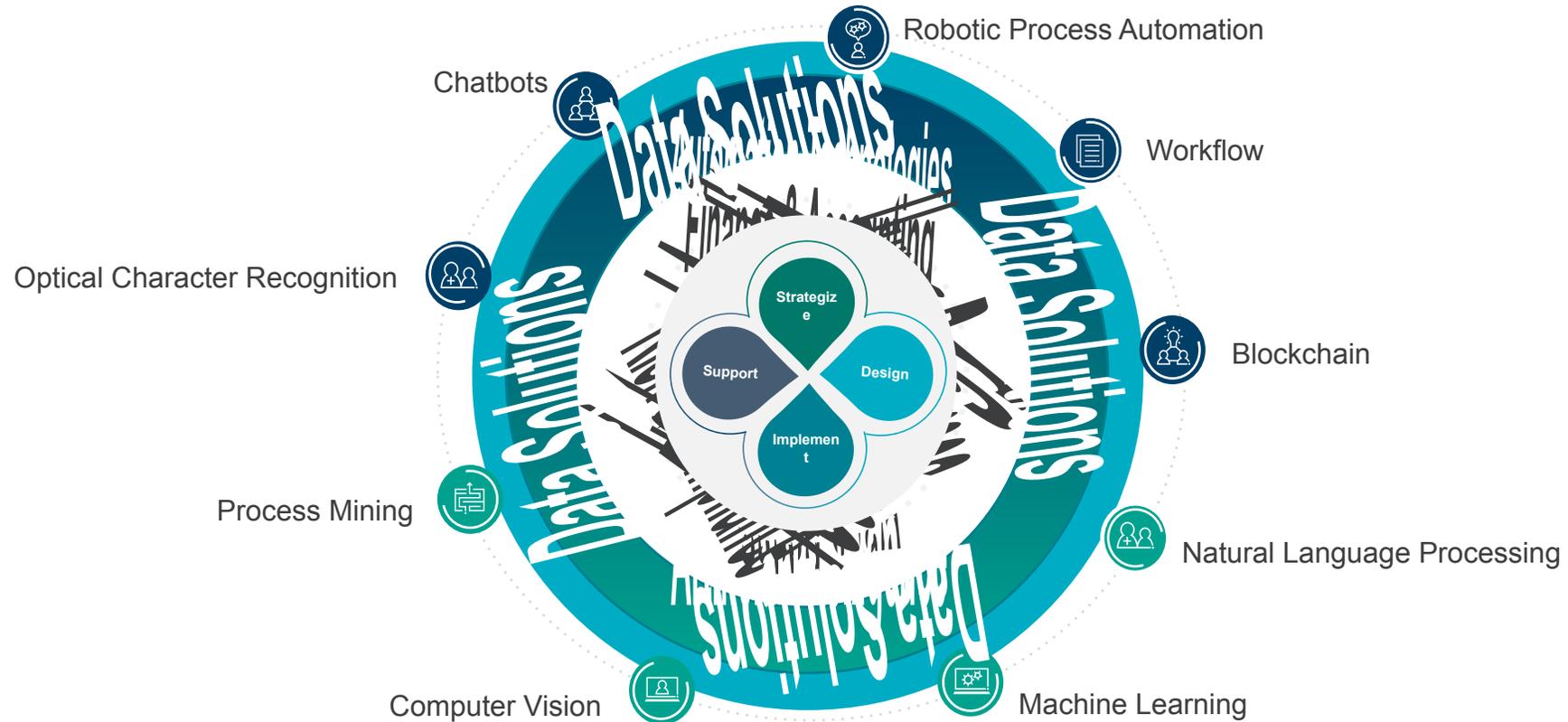
The Americas				Europe/Middle East				Asia-Pacific													
1. UNITED STATES Alexandria, VA Atlanta, GA Baltimore, MD Boston, MA Charlotte, NC Chicago, IL Cincinnati, OH Cleveland, OH Dallas, TX Denver, CO Ft. Lauderdale, FL Houston, TX Kansas City, KS	Los Angeles, CA Milwaukee, WI Minneapolis, MN New York, NY Orlando, FL Philadelphia, PA Phoenix, AZ Pittsburgh, PA Portland, OR Richmond, VA Sacramento, CA Salt Lake City, UT San Francisco, CA	San Jose, CA Seattle, WA Stamford, CT St. Louis, MO Tampa, FL Washington, D.C. Winchester, VA Woodbridge, NJ	4. CANADA Kitchener-Waterloo Toronto	10. FRANCE Paris	11. GERMANY Frankfurt Munich	12. ITALY Milan Rome Turin	13. THE NETHERLANDS Amsterdam	14. UNITED KINGDOM Birmingham Bristol Leeds London Manchester Milton Keynes Swindon	15. SAUDI ARABIA* Riyadh	16. KUWAIT* Kuwait City	17. OMAN* Muscat	18. QATAR* Doha	19. UNITED ARAB EMIRATES* Abu Dhabi Dubai	20. SAUDI ARABIA* Riyadh	21. EGYPT* Cairo	22. SOUTH AFRICA* Durban Johannesburg	23. AUSTRALIA Brisbane Canberra Melbourne Sydney	24. CHINA Beijing Hong Kong Shanghai Shenzhen	25. INDIA* Bengaluru Chennai Hyderabad Kolkata Mumbai New Delhi	26. JAPAN Osaka Tokyo	27. SINGAPORE Singapore

*Protiviti Member Firm

INTELLIGENT AUTOMATION & DATA SOLUTIONS OVERVIEW



Protiviti provides targeted assistance and/or end-to-end support. We leverage the latest technologies and methodologies to innovate, helping organizations transform by focusing on business value. Our consultants bring a deep understanding of the industries in which they operate, awareness of leading practices, expertise in new and emerging technologies and imagination to help clients innovate, transform and succeed.



All the above are relevant to Indonesia and its Financial Services Industry...

OUR GLOBAL RPA EXPERIENCE IN FINANCIAL SERVICES AUTOMATION

>300

Over 300 high profile, strategic & tactical implementations of RPA solutions delivered for our clients. **Including Fortune 1000® and Fortune Global 500® Clients.**

We delivered RPA work for Financial Services Clients around the world on 6 continents across Retail, Business, Corporate & Commercial, Private, Wealth Management, Investment Banking, Insurance, FinTech and more.

6 continents

+57%

Average cost reduction or revenue increase for processes/activities where RPA was deployed. The results speak for themselves, but the potential is even greater.

OUR VISION FOR INDONESIA FINANCIAL SERVICES INDUSTRY

Indonesia focusing on next-gen technologies

Indonesia is committed to implementation of next-gen technologies and we're seeing the potential for one of the fastest adoptions of new technologies across the region exactly in Indonesia. This is further supported by Government focus on driving those and will only increase.

Automation of repetitive tasks

Elimination of standardised, repetitive tasks which take a lot of effort, cause errors, delays and pain for the industry.

Focus on value-add activities

Enabling individuals to focus on the real value-add activities, RPA and other technologies to augment the daily activities within Financial Services Industry to drive real value add.

Innovation

Innovation is a core value and at the heart of our success and we see this as a key enabler for Indonesia and Indonesia Financial Services Industry. The use of "next-generation", "design thinking" and other innovative practices will help to move to a more digital data-enabled, agile and continuous improvement focus.

Digital Workforce Management

With the rise of RPA, ML, AI and other next-gen tech we're moving towards increased digital workforce, something that will have huge implications to the industry, how organizations operate and the role of HR and other departments.

Need to Build & Invest in the right skills and knowledge

Automation & other next-gen tech is advancing faster than the enterprise knowledge required to support it, Indonesian Financial Services Industry needs to focus on building the skills, knowledge and capabilities to ensure long-term sustainability.

Strategic Partnership

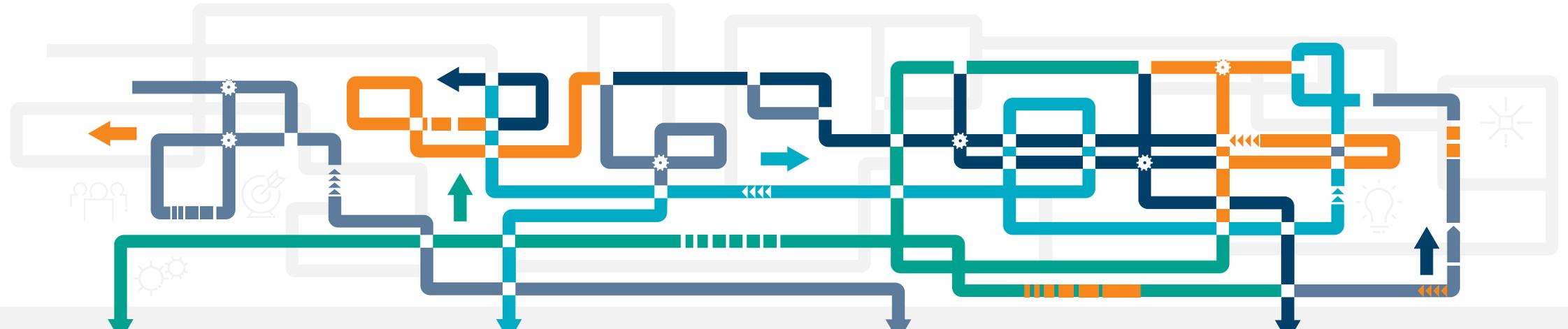
Establishing the right partnerships across ASEAN, APAC and Globally will be crucial for Financial Services Industry in Indonesia. We believe that Indonesia is well positioned to benefit from the right partnerships and solutions if it invests the time and effort in developing those.

Trusted Local Teams & Global Expertise

Engaging trusted local teams with the right cultural, language and business understanding of Indonesia, while leveraging global expertise, experience and capabilities.



KEY POINTS TO CONSIDER FOR SUCCESS



Automation Strategy	Process Evaluation & Solution Design	Program Implementation	Program Support/Development
<p>Business Case & Roadmap Development Develop realistic cost-benefit/ROI analysis and build strategic roadmap to initiate and build automation capability</p> <p>Technology Selection Support sustainable platform selection based on functional capabilities, market position and client-specific requirements</p> <p>Proof of Value Develop pilot programs to demonstrate viability and obtain buy-in before considering enterprise-wide deployment</p>	<p>Process Analysis & Prioritization Identify & prioritize processes suitable for automation</p> <p>Process Optimization Support the optimization & standardization of processes prior to automation</p> <p>Solution Definition & Design Design the “to be” process based on the best technologies and automation solutions</p>	<p>Establish Operating Model Determine target operating model taking into consideration culture, change management protocols, security and governance</p> <p>Solution Development Design, build and test</p> <p>Build COE & Governance Design and/or operate the Center of Excellence model to support the program across the organization</p>	<p>Change Management & Training Provide change management support, minimizing the impact on employees and business operations</p> <p>Monitor & Maintain Provide ongoing support and maintenance</p> <p>Program Enablement Support design and installation of technology platform</p>

And always get the right support...

WHAT SUCCESSFUL RPA LEADERS FOCUS ON

Use RPA for much more than cost savings

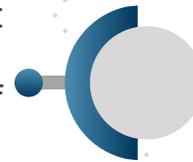
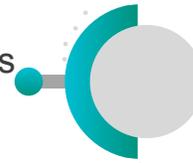
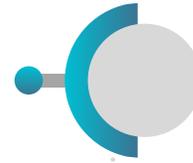
Organizations are already putting RPA to use to improve quality, speed and performance. In the future, they plan to significantly increase the use of bots in everything from IT management and marketing to research and development and product development

Invest heavily in the technology

RPA leaders are spending five to ten times as much on RPA as other companies. Failing to invest sufficiently can damage an organization as competitors outflank them in efficiency and effectiveness.

Tackle employee concerns

RPA leaders thoroughly understand employee concerns about job disruption. To allay these fears, RPA leaders explain their plans, communicate with employees and proactively train staff for more productive work.



Create business cases that deliver value in a broad range of areas

RPA leaders are garnering a wide variety of benefits from these tools. The top three criteria for their business cases are better quality, speed to market and faster process speeds.

Scale RPA across the enterprise

RPA leaders ensure IT infrastructures can support the use of the technology across the company and carefully monitor and maintain each application. They also ensure the RPA tools they use today will support the adoption of advanced artificial intelligence (AI) in the future.

Reap payoffs before everyone else

RPA leaders are far more likely to see improvements in revenue generation, productivity and cost reductions than other companies. And they have the most aggressive expectations of growth driven by RPA in the next two years.

Source: Protiviti [2019 Global RPA survey](#)

LET'S GET TO REAL CASE EXAMPLES

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SOLUTION QUALITY CONTROL, DATA INTEGRITY, IMPROVEMENT AND MONITORING

A set of robust measures has been implemented to ensure quality of solution

	<p>Use of Stored Procedures to optimize the performance and data quality</p> <ul style="list-style-type: none">• Stored Procedures were used instead of direct query calls. The precompiled execution plans that accompany a Stored Procedure ensure faster execution time of the queries.• Stored procedures also help us with the abstraction of the logic and avoid the need to alter the query.		<p>Live production run carried out in multiple batches</p> <ul style="list-style-type: none">• The entire live input dataset was run in different batches to ensure speedy and accurate delivery of the extracts.• The batch volume was controlled using service queues for load balancing and optimum performance.
	<p>Input data pre-validation (Data validator engine)</p> <ul style="list-style-type: none">• The input data was pre-validated to ensure that the Client Number numbers, scenarios and alert dates are in the correct format, right standard and within the acceptable range.• In addition, entry-level validation of all scenarios was carried out.(e.g. « HRG » scenario excluded).		<p>Production run support provided to the makers</p> <ul style="list-style-type: none">• All three issues reported by the Client makers have been resolved.• During the live support period, all data provided to the makers was found to be 100% accurate.
	<p>Pre-validated logic for selecting a specific query to ensure data quality and faster extraction</p> <ul style="list-style-type: none">• All 8 selected queries (stored procedure) were validated and automated to ensure run-time efficiency.• This helped the bot to avoid any runtime errors which could result in inaccurate/ inconsistent/ incomplete results that could lead to delays in delivery.		<p>Live monitoring of all production runs</p> <ul style="list-style-type: none">• The solution has been designed to allow on-screen/live monitoring which helps track running instances as every run was monitored by the team to ensure prompt response, whenever needed.• Simultaneously, a permanent status log was generated to provide accountability for the bot's actions.
	<p>UAT results validation</p> <ul style="list-style-type: none">• The client team validated and confirmed all UAT results. The UAT success rate was 100%.• The input data for the UAT contained some of the most complex scenarios.• UAT output files were cross validated with human extracted files and found to be 100% correct.		<p>Production run 3-way quality checks</p> <ul style="list-style-type: none">• The final output of each run was validated against the underlying transaction data for each scenario.• Output files were cross-checked with the alerts of each batch to ensure data quality.• Manual replication of alerts yielding zero transactions (63 alerts) helped verify the bot's accuracy.
	<p>Live production monitoring and quality checks</p> <ul style="list-style-type: none">• 2-level quality checks were performed on all 8 batches and all results were found to be accurate.• Any alerts that were affected by connectivity/database access issues during the run were identified and completely reprocessed to ensure data completeness and accuracy.		<p>Production run activity logs monitoring</p> <ul style="list-style-type: none">• The activity logs were continuously monitored to ensure data accuracy.• This enabled the bot controller to re-initiate the process when faced with downtime and database access/connection issues.

SALESFORCE DATA EXTRACTION AUTOMATION

A Salesforce bot was programmed to fetch customer data from the Salesforce website. In addition, the bot was designed to format the extracted data for each customer in accordance with the template provided (MS Word file). The files generated by the bot were saved into a shared folder. As a result, before starting a new investigation, makers were able to access the robot-generated report file for the Client Number assigned to them and use it as a canvas for the rest of the investigation. **This solution completed processing which saved over 50 work-hours of effort and ensured 100% accuracy for completed cases.**

Department	Financial Crime
Function	Salesforce Data Extraction for Customer Profile Creation
Process name	Salesforce Automation
Process description (operation, activity, outcome)	Read input list of Client Numbers and extract relevant data fields from Salesforce in order to create a Word Report, conforming to the provided template
Role required to perform the process	Maker/Checker
Process schedule	Attended bot that is triggered at 6 pm (GMT + 8) on a daily basis
Average handling time	-
Transaction volume	370 complex cases (at the time of deployment)
No. of full time employees supporting this activity	8 (6 makers, 2 checkers)
Input	Input Client Number List (Excel file), Config File (Excel file), Template File (Word file)
Output	Email with an attachment containing the zipped Client Number – wise Reports (Word files), Bot Run Status Report (Excel file)

The following activities were in scope for RPA, for this automation workflow:

1. Read the template word file and the config file.
2. Open and read the input file for the list of Client Numbers.
3. Launch browser (Chrome) and log in to source system.
4. Log in to Salesforce and extract data for all Client Numbers.
5. Save Client Number Word Reports in Output Folder.
6. Write Run Status report and save it in the Run Status Folder.

Processing	Total Cases	Verified Cases	Unknown Exceptions	Throughput (%)	Run Time (min)	Avg. Time Per Case (sec)
Round_1	16	15	1	93.75%	11	41
Round_2	378	372	6	98.41%	238	38
Round_3	378	367	11	97.09%	237.5	38

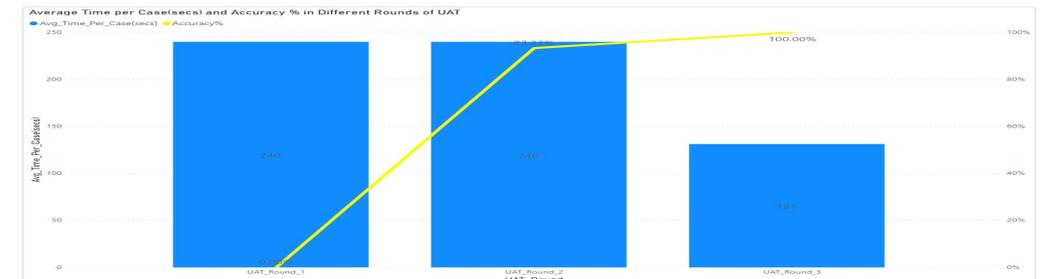
FUNDING REVIEW AUTOMATION

A “Funding” bot was programmed to download funding ledgers for multiple Client Numbers from a source system. Each Client Number could have multiple ledgers and these ledgers could be recorded in different currencies. When done manually, this task was tedious, highly time-consuming and open to various errors. The bot saved time and removed any possibility of errors by downloading all ledgers and segregating them by currency, for each Client Number. In addition, all currencies were automatically converted to USD using FX rates pulled from xe.com. Important metrics like the count of transactions and the total transaction amount were recorded in a “Summary” tab within the output file for improved readability. These robot-generated ledgers were made available in a shared folder. The makers could access them whenever they needed to review funding information for a case. **This solution completed processing which saved over 60 work-hours of effort and ensured 100% accuracy, removing rework and enabling the teams to focus on reviews.**

Department	Financial Crime
Function	Funding Review
Process name	Funding Review Automation
Process description (operation, activity, outcome)	Retrieve weekly FX rates, download Client Number funding account ledgers for all currencies and prepare summary reports for all Client Numbers
Role required to perform the process	Maker/Checker
Process schedule	Attended bot that is triggered at 10 pm (GMT + 8) on a weekly basis
Average handling time	-
Transaction volume	330 complex cases (at the time of deployment)
No. of full time employees supporting this activity	8 (6 makers, 2 checkers)
Input	Input Client Number List (Excel file), Config File (Excel file), FX Rates File (Excel file)
Output	Client Number – wise Funding Review Reports (Excel files), Bot Run Status Report (Excel file)

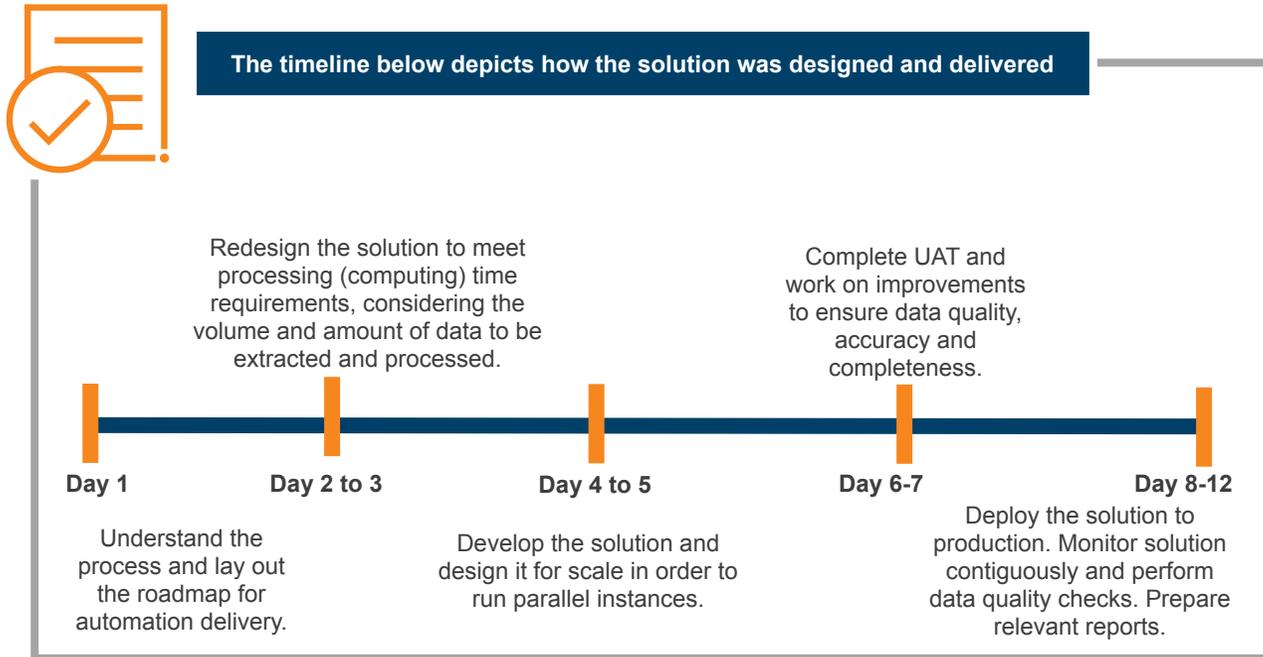
The following activities were in scope for RPA, for this automation workflow:

1. Download the weekly FX rates from xe.com
2. Open and read the input file and the FX Rates file
3. Launch browser (Firefox) and log in to source system
4. Download the funding account ledger for all Client Numbers (for each currency)
5. Save Funding Review Reports in Output Folder
6. Write Run Status report and save it in the Run Status Folder



SQL DATABASE INFORMATION EXTRACTION AUTOMATION

The SQL bot was designed as a microservice that would connect to both the live and archive client databases. Once connected, the robot picked up the “date” and the “rule” fields from each alert ID. This information helped the robot select the right query to be executed. The robot used stored procedures to execute the query as they have a faster execution time. The robot then collated all the transaction data for a Client Number and categorized it scenario-wise. The transaction data for each scenario was available in a separate tab in the output file. Finally, the bot removed all duplicates and saved the file. The output files were saved in a shared older. The makers could download these files and extract the transaction data for further analysis. **This solution completed processing which normally would take 290 work-days in just 5 day, enabling the team to focus on reviews.**



We used Microsoft’s latest generation offering of high performance computing features called “Background Worker” while leveraging the functionality of a “Microservice”.

This enabled us to complete a process that would ordinarily require a computing time of 6,963.13 hours (~290 days) in 5 days using just one laptop (Intel Core i7 8th generation processor, 24 GB RAM, running on Windows 10).



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