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VIRGINIA: PIONEERING ROBOTIC PROCESS AUTOMATION TO FIRST NATIONAL SERVICE OFFERING

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Executive summary

The Virginia Information Technologies Agency (VITA) provides information and innovation technology (IT) services and solutions to 65 executive branch agencies and other organizations to support government service delivery to Virginians. With an ever-present focus on modernizing service offerings and exploring new capabilities under the Commonwealth's multisupplier business model, robotic process automation (RPA) emerged into view.



RPA is a scripted program that completes various, repeatable tasks and processes on behalf of a human user, but without the human risk and need for dedicated human resources. No person is perfect, but when critical government services and sound accounting needs rely solely on human effort for timely completion and 100% accuracy, the potential for unintended error and risk arises. Additionally, by leveraging technology for more repeatable, labored tasks, the human effort can be freed and redirected to more complex and valuable efforts overall.

To fully explore and understand the potential benefit of RPA technology and its application to government work, the VITA team pursued several pilot projects over the past eight months. Even as the exploration progressed, VITA received real-world, tangible requests for assistance with optimizing workflows and streamlining processes from customer agencies, especially as they worked to address immediate and voluminous needs presented by the COVID-19 pandemic. VITA completed an internal pilot and lent critical services to partner agencies who needed a solution for simplifying technology-based processes. At publication time, several additional state agencies have requested to use the capabilities for their own customized needs, and even in beta, the offering is considered a great success.

With the initial exploration complete and demand for RPA growing, the VITA team is now poised to deliver the technology as the first end-to-end service product offering in the nation, complete with a Center of Excellence to educate agencies about specific governmental use cases and capabilities.

Project Narrative:

Idea

In lockstep with [VITA's guiding principles](#) to be an innovative, strategic partner for customer agencies, the VITA team could see benefits in applications of RPA, but needed to build an in-house test case to fully experience the uses first-hand, collect lessons learned and assess long-term returns on investment in a public sector environment. The team conducted thorough market analysis and industry research to build in application to its own processes in pursuit of a natural fit for a pilot.

The first step was to understand how RPA works from concept to deployment. RPA automates rules-based, repetitive tasks performed by humans to collect and process data. The "robots" in RPA are software bots that follow prescribed rules to carry out business processes. Bots distinguish RPA from other automation technologies by using applications' user interface (UI)

to interact with data sources and output targets as a human user would, rather than relying on programmatic access. Inputs to RPA can include and support both structured data such as forms, spreadsheets and databases, as well as unstructured data like emails, chats, notes, voicemail messages and recordings.

RPA outputs can include queries, calculations, transactions, issue exceptions and trigger other business processes. By streamlining these tasks, RPA brings opportunity for exponential cost savings, enhanced accuracy, better quality, faster processing times, more control of processes, the ability to collect insights and analytics, and the empowerment of team members to spend time on more important projects and tasks.

Following research of the technology and applications, VITA chose to pursue an internal process, financial invoice review, to test the theory of whether the technology could be beneficial in a public sector environment.

Implementation

Pilot selection

Each month, VITA team members review hundreds of invoices and thousands of line items, which serve two main purposes: ensure that the Commonwealth is billed properly for contracted products and services and validate that all invoices are coded to the correct project. With the volume of needs, the work is time consuming and requires both continuous focus and deep attention to detail.

Inaccurate invoices can result in overpayments for goods and services and loss of financial return on investment. With the number of services constantly growing, invoice volume will continue to rise, increasing potential need and risk associated with solely manual, human-led processes.

In the past, among the many items audited, the examination of prior period adjustments and the evaluation of invoices against labor rate cards revealed the highest frequency of error. This manual review process requires extensive manipulation within Excel, as well as considerable time toggling among various applications and spreadsheets. The team found that once the specific RPA script has been developed, it can be applied to billing processes from prior months or even years to ensure accuracy, which could result in retroactive credits and cost savings.

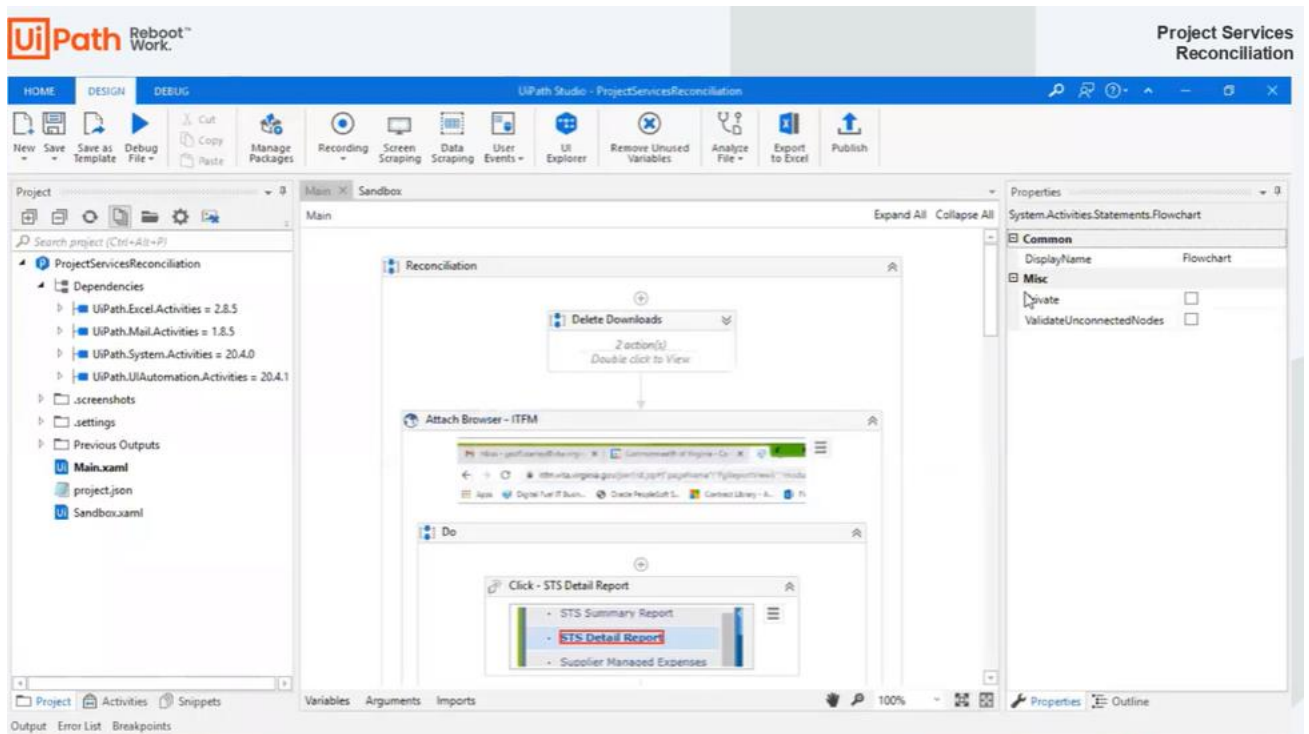
Pilot launch and success

The goal was to validate the current labor billed by a supplier in the information technology financial management (ITFM) tool. This process can be tedious and lengthy, and without RPA, is 100% human-driven to do the necessary comparisons and calculations.

VITA selected a single supplier for the test case, choosing the supplier responsible for enterprise server, storage, and data center services to validate the accuracy of the content. For the proof of concept, VITA team members chose the following items to test:

1. Validate that the correct labor rate was being utilized by the supplier.
2. Ensure that the drilldown dollars and quantities in ITFM matched the dollars and quantities on the "face of the invoice" in ITFM.
3. Ensure pricing and quantity were calculated appropriately.

4. Identify potential duplicate billings by comparing the service period start and end date for each resource name for a specific project billing.



The studio tool and workstation captures the review and reconciliation process to be applied

By automating this process with RPA, VITA will greatly reduce the time taken by the ITFM team to perform the validation, as well as removing the element of human error where manual comparison of numbers is most prevalent and where costly mistakes are possible.

The VITA team partnered with a private company, UiPath, to document the process associated with validating the labor rates used in the supplier's invoices. As VITA shared the steps to complete the invoice validation process, they were captured by the company's tool. Once all the steps were documented, a customized script was developed to automate the process and apply it to a stack of invoices.

The automation completed its full review of all charges in mere minutes. VITA estimated that approximately 16 hours were invested to develop the script and that it would take several months to fully realize the savings of those hours. However, the benefit of accuracy was realized immediately, and VITA could apply the process to data submitted in the past to retroactively check for accuracy. Additionally, to fully capture the return on investment, VITA would need to account for any anomalies in the data which would require human interaction to resolve.

Impact

VITA's initial pilot success expands to address emergency needs spurred by COVID-19

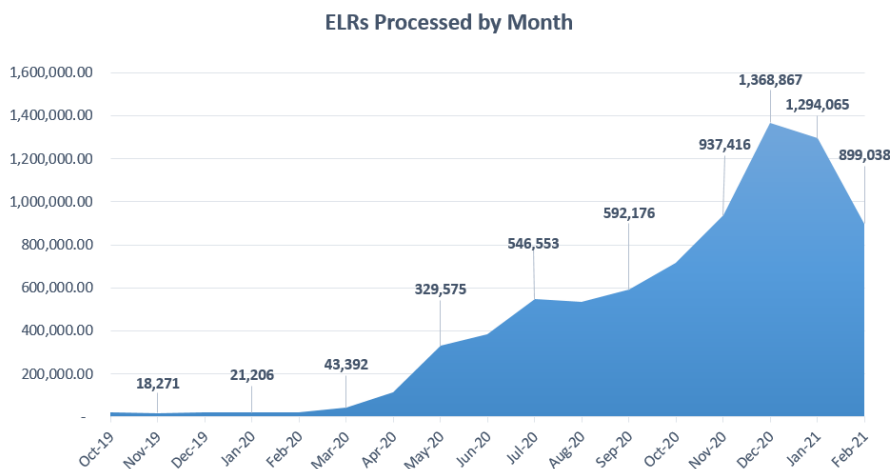
The first proof of concept was a success. The required steps to accurately complete the task were accomplished and verified, and VITA now has the opportunity to ensure a high percentage of invoice charges are reviewed and evaluated, especially if expanded to other supplier invoices. The new ITFM process used in the proof of concept will move to full utilization and deployment by VITA's multisourcing service integrator.

Further expansion will yield a favorable material impact on the Commonwealth, as the automation can verify all the current invoices within the regular monthly review period. Once the automation completes its monthly run, it can utilize the down time to review historical charges, making the most of its overall investment.

As VITA's internal pilot progressed, the team received requests from customer agencies for assistance that RPA was equipped to help fulfill, particularly as they responded to effects from the COVID-19 pandemic. The Virginia Department of Health (VDH) was faced with mounting health documentation and reports, and needed a centralized way to digitize, compile and analyze hundreds of thousands of lab reports across the Commonwealth.

With the RPA technology in reach and development within the Virginia enterprise environment, VITA was able to rapidly connect the department with the technology. RPA delivered for VDH, and brought an increase in overall electronic lab reports' access by nearly 7,000% from Dec. 2019 to Dec. 2020. Together with scanning capabilities, RPA more fully accelerated overall digital transformation and saved hours of time, innumerable resources and bandwidth in replacing paper processes with this digitization, even as staffing levels for the technology team remained largely the same. The technology allowed staff members the opportunity to dedicate their time more fully to other lifesaving tasks and projects, which exponentially increases the overall return on investment.

COVID Impact - Electronic Lab Reports (ELR)



VEDSS is the single largest data source for agency COVID-19 reporting, it feeds the agency COVID-19 dashboard

- From December 2019 to December 2020, there was 6,773% increase in the amount of ELRs processed. In Feb. 2021 the increase has dipped to 4,514%.
- The VEDSS data footprint was 370 GB in April 2020, compared to 1900 GB as of Feb. 2021. This is a 513% increase in the size of the data footprint.
- The number of active users averaged between 230-300 prior to the pandemic. The number of active users as of Feb. 2021 is about 1700, an ~ 566% increase

Electronic lab reports across Virginia were digitized through robotic process automation, allowing for a nearly 7,000% increase in number of reports processed and accessible

Next Steps

With a successful proof of concept delivered and real-world scenario applications, VITA has successfully launched RPA as a service, with the nation's first full-scale, end-to-end product offering coming very soon. Once RPA is fully integrated into VITA's enterprise portfolio, the service could potentially reach and benefit up to 65 state agencies and offer exponential, compounding benefits both immediately and over time. VITA will continue to build on its test

cases, including with another upcoming business process in VITA's accounts payable department.

In addition to building the service as an offering, the VITA team is committed to providing education and resources to partners by launching its own RPA Center for Excellence, which more fully introduces the Virginia enterprise to the emerging technology. The center offers valuable training opportunities in RPA, builds a network of partners across the enterprise who use the service for new ideas, and develops a library of coding and scripts that can be used to customize for agencies' individual needs, building on previous experience without requiring the unnecessary duplication of research efforts. The VITA team is making further investments to the service, including adding a dedicated team member for the work, purchasing licenses and customized support from the private industry, and committing more staff time upfront to optimize the work for later realized return.

The service institution is a critical priority aligned with the 2021 State Chief Information Officers Top 10 Priorities, focusing on needs for sound budget and fiscal management, process optimization, appropriate access management and overall consolidation.