NASCIO 2021 State IT Recognition Awards
Emerging and Innovative Technologies

Pandemic Electronic Benefit Transfer (P-EBT)
Robotic Process Automation Initiative

Project Initiation and Completion Dates
October 2020 – December 2020

Sandra Patterson
Chief Information Officer
Office of Administration Health and Human Services IT Delivery Center
Commonwealth of Pennsylvania

Executive Summary

The Department of Human Services (DHS), Office of Income Maintenance (OIM) serves as the leader in the direction and coordination of benefit assistance programs, such as Temporary Assistance for Needy Families (TANF), Medical Assistance (Medicaid & CHIP), Supplemental Nutrition Assistance program (SNAP), and Low-Income Home Energy and Assistance program (LIHEAP) for millions of Pennsylvanians.

Under the Families First Coronavirus Relief Act (FFCRA), states were allocated additional federal funding to provide benefits to the families of children who could no longer access free or reduced-cost meals at school. Through the Pandemic Electronic Benefits Transfer (P-EBT) program, eligible school children receive temporary emergency nutrition benefits loaded on electronic benefit transfer (EBT) cards that are used to purchase food. With schools across Pennsylvania closed to in-person learning or operating on hybrid schedules with reduced in-person instruction due to COVID-19, OIM received a significantly high volume of calls from families inquiring about their child's P-EBT eligibility. To determine eligibility, OIM staff needed to manually review and filter through several different files to retrieve the necessary information. This slow and painstaking process averaged 10-15 minutes per case, which soon resulted in a backlog of over 4,000 eligibility inquiries.

To alleviate the strain on staff and reduce the backlog of processing P-EBT benefits, DHS began exploring an enterprise-level Robotic Process Automation (RPA) infrastructure. The OIM, Office of Administration and supplier partner Deloitte collectively developed a strategy and implemented an RPA solution (aka a "bot") to automate the issuance research process. This solution allowed DHS to expedite the resolution of inquiries to confirm P-EBT eligibility.

The automated solution was designed, developed, and deployed in 8 weeks. It executes an average of 400 assignments each day and saves approximately 8,250 hours of manual work by OIM staff, valued at nearly $300,000, by automating the eligibility confirmation process. It has decreased issuance research processing times by more than 80% and eliminated the backlog of cases, helping to ensure that low-income children continue to have access to healthy and nutritious meals.

Additionally, the P-EBT bot project established the enterprise level infrastructure necessary to support a shared service technology platform that leverages the RPA software. The success of the P-EBT bot has prompted several DHS program offices to plan implementations of bot solutions to support and automate existing business and operational processes.

Idea

The Department of Human Services (DHS), Office of Income Maintenance (OIM) is focused on directing and coordinating billions of dollars in benefit services for the citizens of Pennsylvania, including TANF, Medicaid, CHIP, SNAP, and LIHEAP. With statewide mitigation efforts in response to the COVID-19 pandemic resulting in remote learning for children, the Pandemic Electronic Benefit Transfer (P-EBT) program was created to provide additional benefits to families of children who were unable to access to free and reduced priced meals at their school during the academic year. As a result, the number of inquiries OIM received related to P-EBT eligibility increased significantly.

To capture all P-EBT inquiries, a Web-based repository tool called WebEOC was used to store pertinent information associated with each P-EBT inquiry. Once captured, OIM staff followed a manual process of reviewing and filtering several different issuance data files containing over 1 million records to retrieve the necessary information to confirm P-EBT eligibility. When executed manually, it took OIM staff approximately 10 to 15 minutes to complete a transaction or single inquiry, leading to delays in issuing P-EBT benefits and putting children at risk for food insecurity.

The low complexity, repetitive, and manual nature of the eligibility confirmation process, along with the need to open and review data from multiple systems and documents, made this process an ideal candidate for an emerging and innovative solution that would greatly improve the customer experience and alleviate the challenges faced by numerous commonwealth families.

Implementation

Recognizing the vital need for automation and improved service delivery to Pennsylvanians during the pandemic, OIM collaborated with the Office of Administration and Deloitte to design, develop and deploy the first RPA solution for DHS. The P-EBT "bot", using Automation Anywhere Enterprise, was created to enhance benefit delivery through faster response to eligibility inquiries.

For the implementation of the P-EBT bot, DHS leveraged an Agile approach, which consisted of the following three phases:
- **Discovery Phase:** Sessions were conducted to review the business requirements and process, and discuss and define the automated process, which includes refining business rules needed for automation and identifying the technical/security requirements and business impacts of the automation.
- **Sprint Phase:** This included designing, developing, and testing of the bot solution. The bot was then developed as specified in the process documentation.

Testing occurred to verify interactions with existing systems, as well as validating the bot was functioning as designed.
- **Production Phase:** Once testing was completed, the bot code was migrated from the testing environment and deployed in the production environment.

The P-EBT bot works by launching a web browser to access the WebEOC platform using the appropriate URL. Like a user, the bot enters log-in credentials to gain access to the platform. To maximize efficiency, the bot uses four separate credentials to access the WebEOC platform, enabling simultaneous processing of records. After logging into the WebEOC platform, the bot navigates to the Assignment Pane to retrieve eligibility inquiries, known as assignments, with a status of 'Bot Research Needed' (Shown in Figure 1).
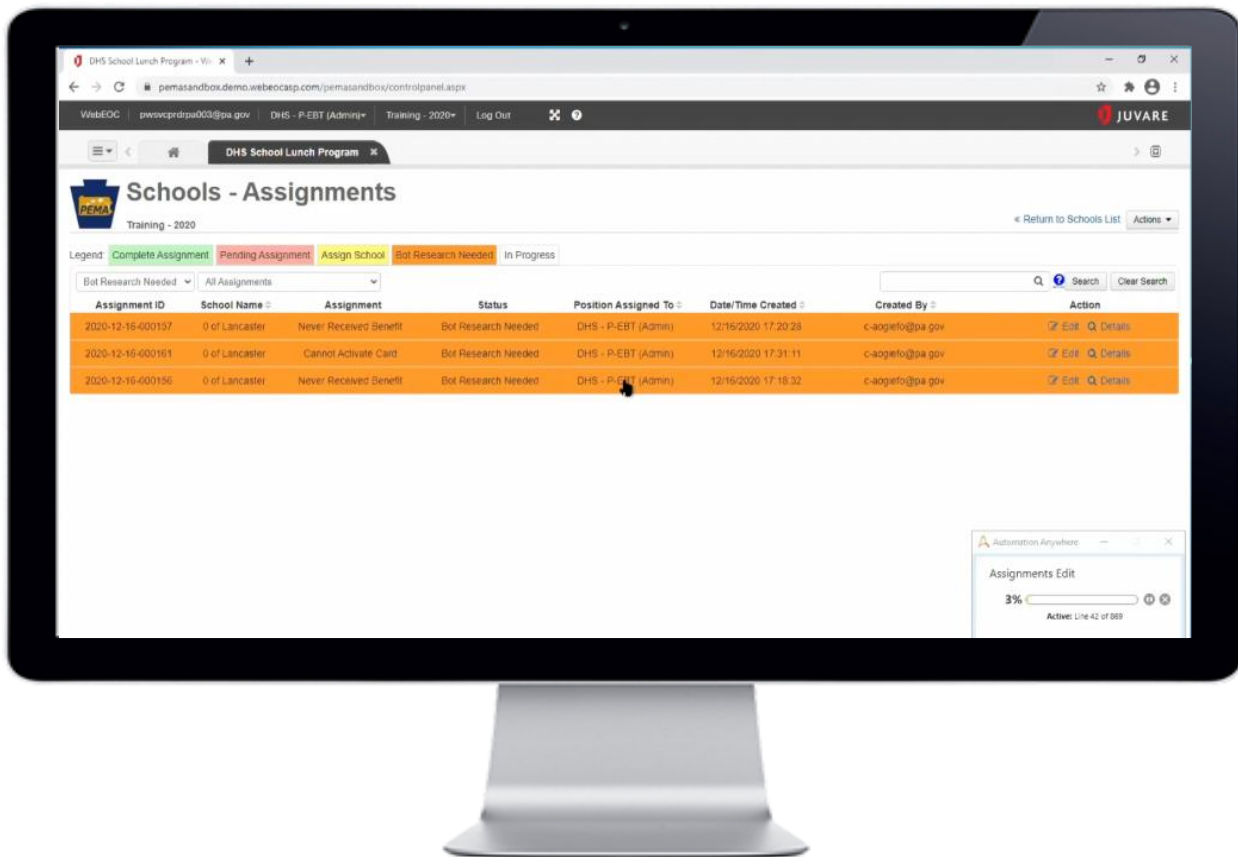

Figure 1: Bot searches for assignments within the WebEOC platform

Once assignments are identified, the bot creates a queue to process and capture the following information on each assignment: Assignment ID, Status, and Created Date, which is stored in a SQL Server database.

After setting the queue, the bot confirms that the assignments within the WebEOC platform contain the following populated fields:

1) Number of Children
2) Child's First and Last Name
3) Child's Date of Birth
4) School District

After confirming that the assignment meets the business logic outlined above, the bot utilizes a script to access the P-EBT issuance SQL Server database and validates the information in the assignment matches the child's P-EBT issuance data in the SQL Server database (shown in Figure 2).
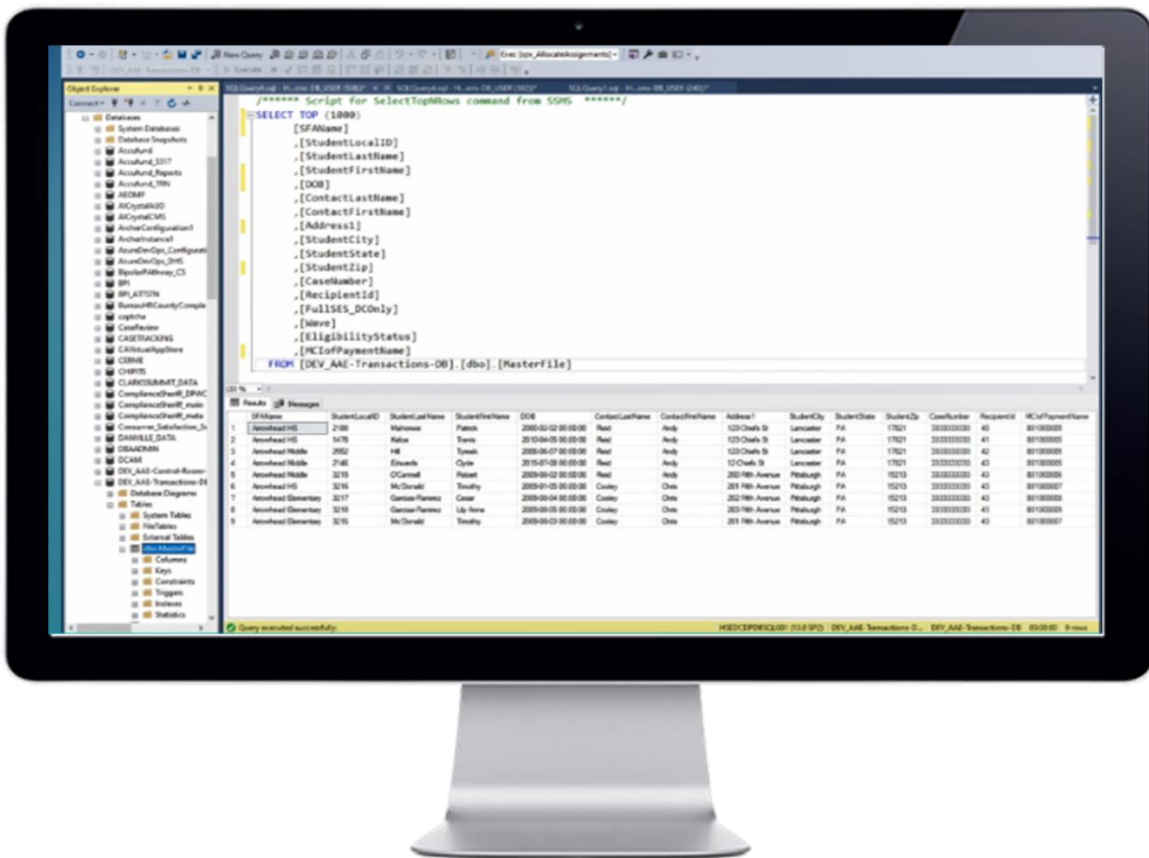

Figure 2: Bot search for issuance data within the SQL database

If the child's information matches, the bot updates the assignment with the issuance data pertaining to the child. If the child's information is not found, the bot updates the assignment with additional output stating that the assignment requires staff review due to missing data. For assignments in which more than one child is listed, the bot

validates that all information in the assignment matches the children's P-EBT issuance data in the SQL Server database.

The bot then updates the assignment with summary details that highlight discrepancies in each child's P-EBT issuance data and the appropriate output based on data availability. Once the issuance research is completed, the bot saves the assignment and updates the status of the assignment to 'Pending'. This allows OIM staff to identify assignments that contain the necessary issuance information to confirm P-EBT eligibility.

Impact

Through the implementation of the P-EBT bot, the manual issuance research process has been nearly eliminated, streamlining case eligibility determination activities for P-EBT benefits.

The P-EBT bot was the first implementation of RPA technology for DHS. In the span of eight weeks, DHS, OA, and Deloitte designed, developed, and deployed the P-EBT bot while simultaneously installing, configuring, and integrating the on-premise RPA technology, Automation Anywhere Enterprise, within the existing infrastructure.

The P-EBT RPA Initiative has made a significant impact in enhancing benefit delivery for Pennsylvanians during a critical time in need. By leveraging RPA technology to automate the P-EBT issuance research process, the solution is helping OIM complete its core mission of providing benefit support to families and children.

Prior to the implementation of the P-EBT RPA solution, staff manually reviewed all inquiries for P-EBT benefits, which led to delays in issuing benefits and an increasing backlog. Since the deployment of the solution, the bot has provided the following benefits:

- Within 3 weeks of the deployment, the P-EBT backlog containing over 4,000 inquiries was eliminated, leading to citizens receiving benefits at a faster rate.
- Issuance research processing times have decreased by *more than 80%.*
- The bot continues to process on average *400 assignments every day* to confirm P-EBT eligibility for low-income children.
- The automation of this task allows OIM staff to dedicate more time to customer-facing tasks.
- The bot provides DHS with the ability to reallocate *8,250 operational hours* or four full-time employees, resulting in over *$297,000 cost savings annually.*

The P-EBT bot has not only streamlined existing OIM business processes, but it also established the enterprise level infrastructure necessary to support a shared service technology platform that leverages the RPA software. With a fully functioning RPA infrastructure, DHS and other agencies could scale RPA well beyond this singular use case. This has prompted several DHS program offices to plan implementations of bot solutions to support and automate existing business and operational processes.

These solutions will be deployed in an Agile manner, which enables simplified integration with existing applications and collaboration with cross-functional teams, significantly decreasing the delivery time when compared to custom development initiatives.

As RPA serves as the foundation for intelligent process automation technologies, the implementation of the P-EBT bot has provided opportunities to evaluate other cognitive technologies such as chatbots and optical character recognition (OCR). Emerging technologies will continue to enhance our RPA capabilities, improve efficiencies, and support the commonwealth's vision to modernize digital technology and improve the delivery of government services to Pennsylvania citizens.