



ROBOTICS STEALS THE SHOW AT HUD

Like many other Federal agencies, the U.S. Department of Housing and Urban Development (HUD) faces the challenge of budget constraints and simply did not have enough time or resources to fully deliver all of its mission critical activities. In the face of this challenge, the HUD OCFO leadership team began the journey of finding a better way of doing business. This is the story of how HUD leaders leveraged Robotics Process Automation (RPA) to improve business processes, create efficiencies, transform the culture, and make it a better place to work for their employees.

"We are well on our way to impact and improve financial controls and efficiencies within our Finance Transformation Initiatives. RPA is a great tool to improve effectiveness and efficiency in making strides toward protecting taxpayer funds".
– Irving L. Dennis, Chief Financial Officer

What is RPA?

RPA is the use of specialized computer programs, known as "bots," to automate and standardize repeatable business processes. Imagine a robot sitting in front of a computer, reviewing an application, and then entering keystrokes on a keyboard.

While RPA does not involve any form of physical robots, software bots basically mimic human activities by interacting with applications in the same way a human being would. Bots work directly across application user interfaces by mimicking the actions that a human being would perform. For example, a bot can be programmed to log in and out of an application, copy and paste information, open emails and attachments, fill out forms, respond to emails, and analyze data. Working as a virtual assistant, a bot can consistently and accurately complete tedious and time-consuming tasks. This saves time and creates an opportunity for employees to work on higher-value, mission critical tasks; tasks that require human intervention.

How is RPA Different from Traditional Automation Approaches?

Unlike traditional automation initiatives that often require extensive developer resources to integrate systems and applications, RPA does not disrupt any underlying systems. The bots work across the existing applications just as a person would. The technology is especially useful for addressing challenges with legacy systems and in situations where an organization lacks the resources to fully integrate its information technology systems and applications.

How has HUD Used Bots to Shift from Low- to High-Value Work?

To better understand how RPA is shifting HUD employee work from low to high-value tasks, HUD's OCFO Finance Transformation Initiative is a good case in point.

Every year, HUD executes numerous processes to prepare financial statements that provide a snapshot of how the organization's funding was used. One particular process typically took about six and a half months to complete and required approximately 2,100 hours of employee time, or manpower, to produce. The cycle typically began by manually consolidating data, a process of copying and pasting large amounts of information from many Excel spreadsheets into one. Reviewing and correcting the data was a manual process that occurred continuously from the beginning to the end of the process. Data was sent to a statistician who would



develop and return samples for accrual validation testing. Employees then manually obtained grantee email addresses and entered them into a spreadsheet. Then there was a manual mail merge of over 600 unique survey letters in Microsoft Word. Finally, emails were sent out to hundreds of grantees with individualized survey forms attached.

To automate this process, a bot was programmed to replicate the steps that the HUD employees performed manually. The Bot retrieves the data from multiple spreadsheets, applies the business rules, validates the information, and finishes by compiling the information into a single file. The bot also automatically selects a statistically valid sample of grants and then consolidates the information by grantee. A second Bot is also programmed to compose an email to each recipient and attach a unique, custom-generated survey form. The cycle finishes after the first Bot sends the messages out.

From start to completion, the automated process now takes about 65 hours, saving HUD OCFO over 2,000 employee hours, and significantly reducing the cycle time from six months to three or four weeks. Additionally, the bots have reduced the level of effort required to perform the grant accrual validation processes by 97%. The employees previously assigned to this task are now able to spend time on higher-value activities such as data analysis. See the table below for a detailed breakdown of the time and resource savings.

| Process Steps | Prior Level of Effort | New Level of Effort (Automation) |
|--|--|---|
| 1. Obtain open grant listings | • 1 week (1 Resource / 40 Hours) | • 1 day (1 Resource / 30 seconds) |
| 2. Develop the grantee survey letter template and obtain grantee survey letter template approval | • 2 weeks (3 Resources / 160 Hours) | • 1-2 days (3 Resources / 4 Hours) |
| 3. Sampling plan and grantee samples | • 2 weeks (2 Resources / 100 Hours) | • 2-3 days (2 Resources / 20 Hours) |
| 4. Obtain grantee point-of-contact information | • 6-8 weeks (2 Resources / 140 Hours) | • 2 weeks (2 Resources / 40 Hours) |
| 5. Distribute surveys, perform follow-up, obtain and compile results | • 8-10 weeks (5 Resources / 1,500 Hours) | • 1 day (2 Resources / 30 seconds) • 2 weeks to obtain results from Grantees |
| 6. Extrapolate results | • 1 week (2 Resources / 60 Hours) | • 1 day (2 Resources / 30 seconds) |
| 7. Finalize the sampling plan letter | • 1 week (2 Resources / 60 Hours) | • 1 day (2 Resources / 1 Hour) |
| 8. Accrual and actual analysis | • 1 week (2 Resources / 40 Hours) | • 1 day (1 Resource / 30 seconds) |
| TOTAL | 6.5 months / 2,100 Hours | 3-4 weeks / 65 Hours |

The Future of Bots at HUD

Current efforts are just the tip of the iceberg. OCFO believes there are many programs within the Department that are ready for robotics, and as internal processes are identified for streamlining, additional bots will be deployed. Some of the OCFO business processes already identified for RPA include: payroll, accounts receivable and payable, invoice processing, inventory management, report creation, and data migration. These



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processes will form the basis of HUD's OCFO initial RPA expansion as it looks to shift over 50,000 hours of employee time from low to high-value work.

Overall, RPA has significantly improved the quality and timeliness of the work at HUD, and the way HUD does business. The possibilities are endless, the results are conclusive. RPA is here to stay – at HUD at least.