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Getting Started:

Answering Your Questions About Robotic Process Automation



GOVLOOP
E-BOOK
2019



Executive Summary

One of the major perks of public service is already in the name – serving the public. Working in government is a rare job in that after a long day at the office, employees can go home feeling like they’ve made a difference. Or at least, they should feel that way.

Employees in government are increasingly encountering obstacles to meaningful change, however, confronted by stacks of tiresome paperwork and rote, repetitive processes, all of which dampen the impact of their laboring hours.

This problem hasn’t been lost on their employers. Agencies at all levels of government are searching for ways to free up employees to do higher-value work and contribute more to the mission. For that reason, the Office of Management and Budget (OMB) released a memo in 2018 instructing agencies to look for ways to shift from low-value to high-value work in re-evaluating processes, requirements and technologies.

In the memo, OMB explicitly directs agencies to introduce robotic process automation (RPA), a software that can complete simple, rote tasks based on coded instructions. OMB notes that this could help “reduce repetitive administrative tasks.”

So then, what really is RPA? How does it work? Will it replace jobs? And why are so many agencies flocking to this technology now?

These are all legitimate questions that many employees harbor when hearing that automation is coming to their workplace. And for agencies to be successful in implementing these technologies, they need to be able to answer every concern.

The following sections will answer the who, what, when, where, why and how of RPA software. You also will find case studies, explanations of the underlying technology and interviews with leaders in the field.

The Proof of RPA

1st

in the federal government to implement RPA was [NASA](#).

0

NASA [employees](#) have lost their job because of a bot.

“Rather than an accountant manually reconciling two or more sets of data and then researching any differences, RPA technology can automate the reconciliation tasks leaving the accountant with the analytical tasks of researching and understanding the differences.”

– [Bureau of the Fiscal Service](#)

12,000

hours of labor each year are [automated](#) in the General Services Administration (GSA) with RPA, nearly 1,500 working days.

“Not only will automation shift resources to the pursuit of mission outcomes, but it will also reduce human error and improve compliance with contracting protocols and financial analysis and reporting.”

– [OMB](#)

65%

of state CIOs view robotic process automation and artificial intelligence as the “most impactful” [emerging technology](#) in the next three to five years.

95%

faster [processing times](#) were seen by Washington Headquarters Services, a small Defense Department branch providing essential administration support, after bringing in RPA.

10

primary [benefits](#) of RPA are identified by the American Council for Technology and Industry Advisory Council (ACT-IAC).

3-5

hours every day of [available time](#) for bots are recommended by the Office of Financial Innovation and Transformation.

60%

improvement in [processing times](#) was realized by the Treasury Department across seven automated processes.



The Faces of Government Bots

What's in a name? Bots come in many shapes and sizes, but their names reveal that they're often inspired by agencies' favorite historical, or fictional, characters.



George Washington

- Organization: [NASA](#)
- Job: Creating personnel cases for incoming transfers and new hires
- Namesake: George Washington, Founding Father and first U.S. President

Truman

- Organization: [General Services Administration](#)
- Job: Automating elements of acquisition that are administrative, such as populating data into pre-negotiation memos and validating information
- Namesake: Harry S. Truman, 33rd U.S. President who led the establishment of GSA



Weaver

- Organization: [Housing and Urban Development Department](#)
- Job: Preparing a dashboard, importing forms and exporting final copies of rejected mortgage forms
- Namesake: Robert C. Weaver, the first Secretary of HUD

FS2D2

- Organization: [National Science Foundation](#)
- Job: Automating central reporting systems
- Namesake: R2-D2, Fictional Extraterrestrial Droid in "Star Wars"



The What, Why and How of RPA

The What

RPA software is designed to process specified instructions to execute rules-based activities. Different RPA programs are called bots, and they operate as users on systems.

What does all of that mean?

First off, RPA programs usually have a rather narrow focus because they deal with repetitive, mundane tasks. The instructions that RPA developers program into bots are meticulous, and they usually can follow a sequential or flow-chart sort of order. RPA bots are coded to know exactly where to access information and what to do with it.

Since the bots are simply applying instructions to inputs, they never make mistakes in calculating the outputs. If there are mistakes, they're either in the data or the instructions. Therefore, the bots can go about the process using only inputs and instructions – no intelligence or problem-solving skills required.

While they're replacing some of the work that people have been assigned to do, bots are not removing the high-skilled work that most

employees were hired to do, so employees should not worry about RPA as an immediate threat to their jobs.

Secondly, while specific RPA programs home in on what they're designed to do, bots can take care of a variety of tasks that previously would have required human intervention. From scrubbing a document to sending progress report emails, bots can take care of a variety of agencies' compliance and reporting chores.

Next, when agencies install RPA, they're adding a new "user" on systems. RPA doesn't work by magic; it uses a cursor and keystrokes to get the job done. Therefore, it occupies systems like a human employee, and it requires a profile and credentials. Because of that, RPA bots do have a brief onboarding period after their development.

A final important thought: RPA might operate like a regular user, but there's no mistaking it for one when watching bots in action. RPA bots can go at multiples of the speed that human employees reach, sometimes completing tasks in seconds that would have taken people hours.



The How

To see the process in action, consider the example of an RPA bot charged with reporting website visitors' information to a specific portal:

1. A user signs up to receive email updates about a new agricultural policy.
2. The bot accesses the portal's backend and documents all the information that was provided on email address, the person's identity and the types of emails they wanted to receive.
 - a. If someone signed up for emails without providing an email address, RPA bots could send this information in a separate report as well.
3. Then, employees review the RPA-generated report to create an email list in accordance with the type of content people requested.

Note: Bots are impressive in their speed, accuracy and tirelessness, but don't give them too much credit. RPA wouldn't necessarily be able to match the types of emails that users want to receive to users themselves, as that process requires logic. These types of processes are best saved for artificial intelligence, which simulates human intelligence.

The Why

Agencies are turning to RPA for many reasons, but the primary benefit is the ability to free up workers from hours of mundane tasks. As employees can redirect their attention to more important and high-value activities, agencies are able to avoid overtime costs, capture revenue elsewhere and, simply, get more done.

Don't always look to the bottom line for RPA's direct benefit, though. The agency will still have to pay for the same amount of employees and cover all of the traditional costs after implementing RPA. But the value of work for each employee involved with RPA expands once the technology is incorporated.

These benefits trickle down. One major advantage of RPA that proponents point to is that it re-engages the workforce, potentially helping agencies attract younger job-searchers – a longstanding challenge in government.

Finally, RPA also leads to more accurate work done more quickly. Bots significantly outpace human employees on simple, repetitive tasks, and bots don't have typos. A bot that handles data will also always conform to one standard, helping to lay the groundwork for future projects with analytics or artificial intelligence.

RPA in Action

Too many times in government, technologies make a name for themselves, only for that name to end up as just another “buzzword.” What began as a promise to fundamentally re-engineer how agencies operate ends up more like a fresh new paint job – with the same clunky engine underneath. In other words, nothing changes.

RPA is something different. While it might not overhaul the whole system, across technology environments, RPA provides efficiency enhancements that help agencies fundamentally improve their operations. The Defense Logistics Agency (DLA) is a great example.

DLA, responsible for the supply chain movement of Defense Department items from point A to point B, began looking at RPA in 2017. After RPA drew interest from leadership, the agency launched its first initiative in mid-2018 and has since automated more than 50 processes, with another 60 in the queue.

These implementations have fallen across a variety of roles, from onboarding to logging.

Onboarding

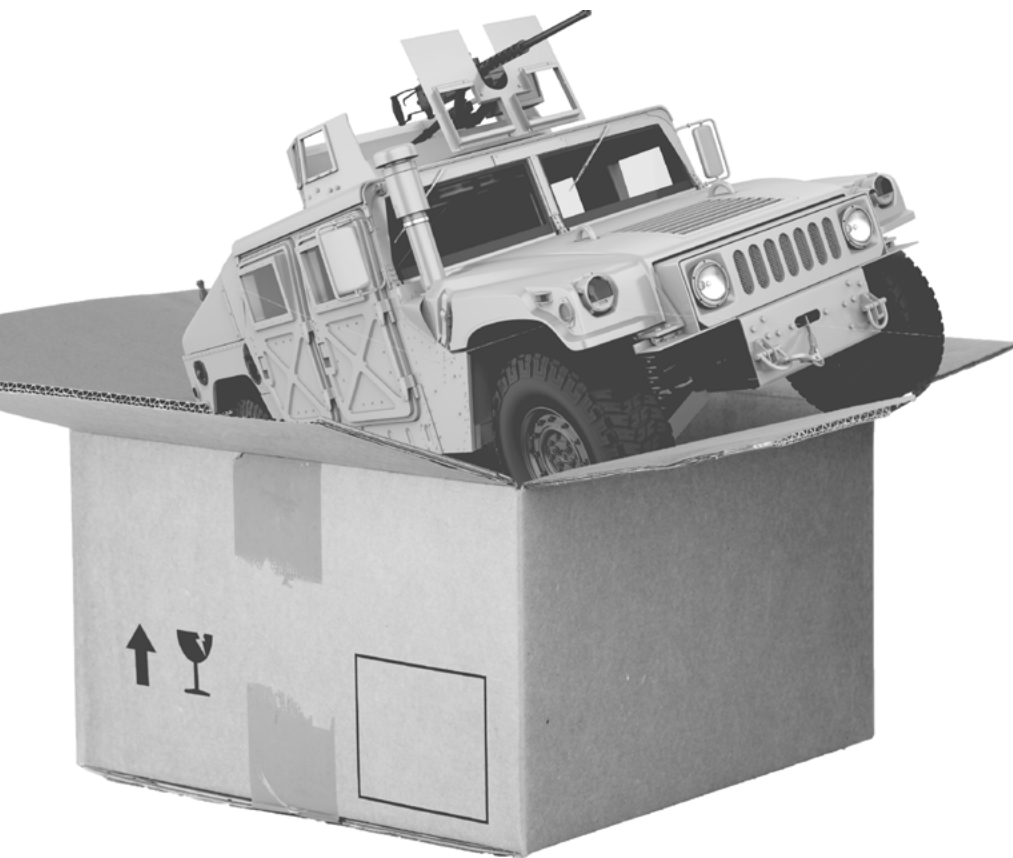
New employees at DLA will encounter the benefits of RPA during one of their very first experiences at the agency.

When new hires are onboarded, IT teams traditionally have to put them through systems, authorize them access, and enable all the necessary software on computers. This process can be time-consuming, forcing new employees to wait days, if not weeks, before they can access all the tools needed to do their job in full. That delay is costly for IT teams too, who are managing that process in addition to their more pressing responsibilities.

With RPA in place, employees can get to work straight away, as the bot can transfer information from HR systems to IT credentialing portals in a flash — ultimately saving about \$2 million annually in working hours that once were spent waiting on systems.

Lockwood said that RPA bots can often save employees 10% of their time, if the right process is chosen.





Logging

In daily life, ordering isn't perfect. If someone's only got a left sock, for example, good luck trying to get a store to sell a matching right sock. Pigeon-holed, that poor customer then has to buy a whole other pair – or several – understanding that one sock will be superfluous.

The same principle applies for the military supply chain. So as not to waste, DLA Disposition Services scans and logs shipments for “excess property” that can be used elsewhere in the military. Without automation, the process was manual, involving the regular coordination between representatives at different sites searching for items they need and uploading surplus information. Time, data quality and communication were all barriers to efficient exchanges here.

Using a bot, however, DLA has transformed this process. An RPA bot with user credentials can now log onto the system and peruse uploads, quickly matching wanted items and interested parties. In step with human employees, the bot can issue a system alert if that item is in dire request elsewhere. The bot even knows, as it is programmed to do so, to assess high-priority requests first.

What this means is that RPA can, for example, help deliver a perfectly good, brand new Humvee from the Navy to the Army in short order. The quick turnaround could save a base from waiting weeks on an overseas shipment – not to mention saving the U.S. government money by maximizing its purchase.

People Plus Machine: North Dakota's Future Workforce

Recently, North Dakota Chief Information Officer (CIO) Shawn Riley captured headlines with a [TED Talk](#) titled “Why You Should Want to Be Replaced by a Computer.” While his presentation discussed automation and invention’s historical record of generating more exciting, higher-value jobs, Riley’s talk, and its title, also played to a common fear: Will robots put humans out of work?

Following Riley’s speech, GovLoop spoke with other automation leaders in North Dakota’s government – Chief Technology Officer (CTO) Duane Schell and Chief Data Officer (CDO) Dorman Bazzell. They addressed a number of topics, including automation use cases, best practices and workforce impacts.

This interview has been edited lightly for length and clarity.

GovLoop: What's robotic process automation being used for in North Dakota?

Schell: Robotic process automation is one of the key tools in our toolkit, looking at a larger automation strategy. We are still in the process of standing that infrastructure up, so in parallel, we are building the infrastructure to leverage RPA, as well as looking at a multitude of processes.

Bazzell: If I can add on that just a little bit, we have about 20% of our state government employees over the next four years who are eligible for retirement. So that equates to somewhere between 3,000 and 5,000 people that we anticipate over that four-year period who will leave. What we have walking out the door is a lot of tribal knowledge, plus a lot of knowledge in a lot of manual processes. We are on the journey to start automating those processes.

When you look at automation for actually filling some of those gaps, what does it let you do to focus on your workforce in five or 10 years?

Bazzell: Those highly manual processes are gaps, right? Those are gaps in a seamless way of government operating efficiently. RPA allows us to fill in those gaps. But it's not an endpoint. The other side of the coin is what we're doing

around process improvement. So, if all we're doing is automating a process, it becomes very unhelpful, because that process is likely very inefficient as it is.

What are some examples of those processes that you are looking to improve, as well as bring this technology into?

Schell: When you talk about what we're going to do, I think it's what aren't we going to do as we look at what the possibilities and what the opportunities are across state government. When you look at almost any process or service across state government, there is some level of very defined repeatable work that is part of the process of delivering almost any service. The traditional areas around RPA are largely from HR and finance, and that's where we're focusing some of our initial efforts. But when we look at our human services area, I think we see a tremendous amount of opportunity.

What are you doing to prepare the workforce for once some of these tasks that might occupy 10 to 20% of what they do day to day are automated?

Bazzell: Certainly, there's training. We have courses that we are using throughout the state around leadership anywhere.

Schell: What we're doing as part of automation in that environment, and kind of bringing them up to speed is, step one, walk us through your process. Help us understand what a day in the life looks like, and then as we understand that process, we can better shape technology.

Is automation something that could eventually reduce the size of the workforce?

Schell: What the policymakers choose to do, I can't speak towards. But, I think across the board through automation, we have the opportunity to improve the quality, responsiveness and depth of service that the citizens want, and need, from the state. So, may

there be a time when policymakers change and downsize? I can't speak to that. But short term, I don't see any of that happening, just simply because of the backlog that already exists across state government.

Technology is just a tool that we use, where appropriate, to serve the citizens of the state. Across the board, there is massive amounts of demand, in terms of how we might serve the citizens in a more effective, better way. So, you know, I don't see the technology as reducing the workforce. I see the technology as enhancing the quality of the service that the citizens get, and frankly expect, from our agencies and the services they offer.

Bazzell: And the "extended" part, and that's the word Duane used, is really extending the capabilities of the human to do more efficient work. And in our case, it's extending the ability of state workers to enhance the experience and services for our citizens.

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Leading an RPA Revolution to Success

An interview with Keith Nelson, Global Head of Public Sector, Automation Anywhere

A single RPA bot can save agencies thousands of full-time employee hours every year. Multiply that across more than 100 bots, and then RPA's full potential is realized.

Still, when learning about the benefits of RPA, organizations frequently focus on single case studies of how one bot alleviated the repetitive, manual workload of one task. Of course, these stories are important to anecdotally illustrate how RPA works, but isolated instances fail to capture the scope of transformation that RPA can have on an agency.

"This is a technology that can actually help drive the bottom-line benefits, the mission of what government's intended to deliver," said Keith Nelson, Global Head of Public Sector at Automation Anywhere. Automation Anywhere is a company that offers easy-to-build RPA solutions for government, as well as the private sector.

GovLoop recently spoke with Nelson about how to make the most of RPA at agencies. And it turns out, many are missing out on RPA's full potential because their scope is too limited.

With bots, Nelson said, there is strength in numbers. Therefore, an agency will really unshackle employees and promote innovation by deploying automation throughout its enterprise. Four or five bots aren't enough for an RPA revolution, Nelson said; dozens or hundreds of bots are needed.

Several common pitfalls have organizations spinning their wheels on RPA transformation projects, however. Agencies can be decentralized in their approach, for one, leading to duplicative, labor-intensive and piecemeal developments. Also, agencies can fail to pair business needs with bot development, leaving important opportunities unfilled and IT teams unprepared.

Both of these trip-ups are resolved by a formal, organizational strategy for RPA. Although RPA pilots should start small – a common truism for technology projects – agencies should have an end state in mind and a plan to get there from the get-go. A central office for RPA will help to suffuse its adoption throughout an agency.

Of course, plans are often easier said than done, which is why agencies need to find tools that can easily link business needs to RPA development. Better yet, everyday users should have the opportunity to build the bots themselves.

"You really can't scale if every time you want to build a bot you have to wait in line for IT to get back to you," Nelson said.

Automation Anywhere offers an easy-to-use suite of capabilities that oversees all bots in production or in use. Users can simply hit "record" on Automation Anywhere's app, perform the manual task, and the RPA bot will copy and remember those actions for reuse. The tool is easy enough for business users to design bots and nuanced enough for developers to integrate artificial intelligence into more complex models, meaning that with Automation Anywhere, agencies can thoroughly scale.

Like spokes on a bike wheel, successful bots radiate from a central hub – all working together. And with the wheels of an RPA strategy in motion, agencies can cover a lot of ground.

Takeaway: Automation was never about just one or two processes being streamlined. Bringing in user-friendly platforms, agencies can scale automation throughout their enterprise – led by everyday users who, with no-code and low-code solutions, build bots to answer business needs.



First to Automation, NASA Takes RPA Agencywide

The National Aeronautics and Space Administration (NASA) was the first federal agency to officially implement RPA, after the NASA Shared Services Center (NSSC) introduced the idea at an agency kickstarter competition in 2017. After receiving some initial seed money, NSSC became NASA's testing ground – and the larger federal government's testing ground for RPA. The south Mississippi office has since been so successful with eight bots across 40 processes that RPA will be rolled out agencywide in April 2020.

With the launchpad of its Washington Bot, NSSC's project has served as a model for RPA efforts at the General Services Administration (GSA) and other federal agencies. GovLoop talked to Pamela Wolfe, Chief of NSCC's Enterprise Services Division and the leader of its RPA program, about taking the first step for government bots, the challenges that came with being first and what's next.

This interview has been edited lightly for length and clarity.

GovLoop: NSSC was first in the federal government to bring in RPA. How did that idea come about?

Wolfe: Our portfolio manager was looking at innovation opportunities, and NASA had an innovation kickstart contest, where people

submitted ideas for innovation. Then, some were selected and given some seed money to do a pilot or proof of concept. Our portfolio manager submitted an idea about RPA, and we were one of the finalists that was given some seed money to do a proof of concept for RPA. That's really how we got started.

It was really plowing ground that had not been plowed before in the federal government – a lot of work to determine how you would put digital workers into your workforce and get them access to systems, a lot of scrutiny on the IT security aspects and the credentialing of these digital workers. As a matter of fact, we

went live at the NSSC, providing these services, in January of '18, and we are in the process of rolling this out agencywide.

Oh, wow.

Yeah, and scheduled for that to go live in April of next year, in April of 2020. So, we've been working very heavily on governance and there's a lot of lessons learned and things that we've shared with other government agencies as they started the journey. We've identified similar issues that we felt needed to be addressed at a federal level.

Just going back to being the first agency to ever do this too, what challenges came with really stepping foot on untrodden ground?

Well, certainly there were a lot of IT security concerns around the software and the vulnerabilities that may be present when you're doing this, and our IT security team had a real concern about giving the bots access to systems.

Frankly, there's two camps on that. From our financial segment auditor's perspective, they really like the unattended bot, because they can go into the system of record, they can identify when a bot is doing a transaction, and they

know exactly where to go to get the audit and the control information and the documentation associated with those transactions. Conversely, our IT security team really wanted to use attended bots, because of their concerns with allowing bots to have access to their systems. There was reluctance with thinking that these bots could go in and make system changes, which they absolutely cannot do.

You have 40 automations in place. So, are there 40 bots in place then, or do some bots tackle multiple automations?

Across the industry, we're learning that some people use "a process" and "a bot" interchangeably, and they're really not. So, we have 40 processes in production, but we have eight bots in production. We have multiple processes running on a single bot, as long as the duties for those particular automations do not conflict with each other.

Once you're automating a process that was busy work for employees, do they pretty quickly get on board?

Oh, they absolutely get on board quickly. And as soon as you automate one mundane task, they're ready for you to automate the next one.

I wonder if you actually started this trend in government. I've always been interested in the different names that are given to RPA bots. And of course, for the first one, you all went with Washington. What went into that decision?

Well, you know, it's funny that you mention that, because we spent a lot of time on how do you name the bot. In our pilot, we had to identify one bot and several things were thrown out. So again, our portfolio manager at the time said, "We're just going to start with the presidents, okay." And so, we started out with Washington Bot, and then we had Adams Bot. But once we had those two in place, we had this huge discussion about how there is no diversity in the presidents.

It went round and round and round, and finally, we all decided we would go with the NASA missions. So, our first two were named for presidents, but after that, it goes in sequence based on when NASA missions were.



Thank you to Automation Anywhere for their support of this valuable resource for public sector professionals.



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