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Process Robotics

An emerging solution to unfunded mandates, shrinking federal workforce, and excessive contractor spend

From the 1977 **Star Wars** movie character, C-3PO, to the 1982 **Knight Rider** TV series character, KITT, to the 2013 **Her** movie character, Samantha, we have envisioned "artificial intelligence" that enhances human life by learning the human way of performing tasks requiring no intervention. Process Robotics, the new buzz word in the private sector, which describes systems designed to perform routine tasks and operations performed by humans, may help bring federal agencies one step closer to that dream.

What is Process Robotics?
If funding could be redirected to mission, if long delays in basic business processing could be improved, if service levels could be tightened without millions of dollars of investment, would you engage? Is it real? Has the time come for this simple technology? The solution set around Process Robotics has moved into production in the commercial sector. In the most simple terms, the technology mimics the user, with the same security rule set as a user, requires minimal system integration, can be implemented in months, and initial findings are freeing up dollars. Interesting?
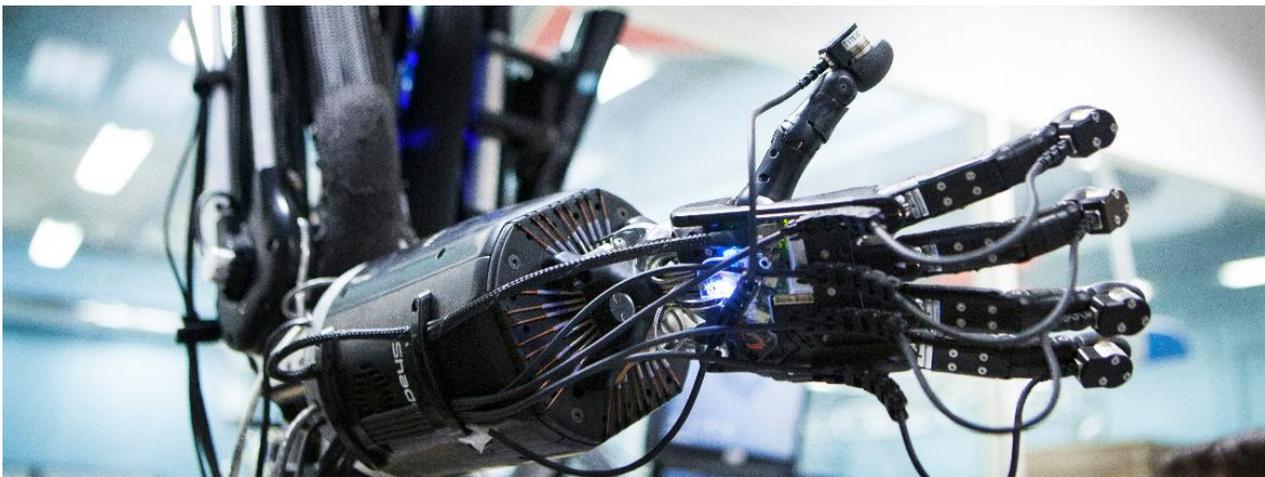
Challenge

Federal agencies are facing unprecedented budgetary and regulatory disruption as they manage mounting budget constraints while trying to be more agile to increasing mission objectives. As agency scope increases, so does the number of mission-related transactions. With the inability to hire more federal staff, the federal government is forced to spend dollars on contractor support or shift resources away from the mission to handle these routine, manual tasks. The convergence of additional factors–exploding amount of federal program data, increased regulatory compliance, and demand for greater government value–is adding fuel to these challenges for the federal government.

Process Robotics can provide federal agencies the capability to operate more efficiently with reduced resources.
- Unnecessary Contractor spending
- Limited ability to hire additional federal workers, long lead time to hire federal workers, a retiring workforce, and unfunded mandates have created an environment that requires increased contractor spending.
- Back office vs. Mission-focused
- Government managers are spending too much time working manual, back office administrative functions and less time on the mission where they can identify excess funds, make data- driven program decisions, and work on new mission initiatives. The ability to balance the size and composition of the federal workforce so that it is able to deliver high quality services is a key federal human capital challenge[1].
- Excessively long service levels
- The shrinking government workforce and the need to control agencies' personnel costs, the potential wave of employee retirements that could produce gaps in leadership and institutional knowledge, and increased mandates are driving longer service level times for the completion of government services[2].

Potential solution

Process Robotics is becoming increasingly attractive in the commercial sector for addressing today's requirements and preparing for the demands of tomorrow. Transforming federal workload to Process Robotics for event-based, high volume, back office transactions can empower federal managers to better utilize limited capacity to take on more impactful mission roles and responsibilities. Federal agencies may no longer have to make costly upfront capital outlays for application licenses, implementations, or ongoing operations and maintenance. They merely have to specify outcomes and have 'bots' deliver the services.

1 GAO-14-723T: Human Capital Management Challenges and the Path to Reform. Jul 15, 2014.
2 GAO-13-283: High-Risk Series: An Update. Feb. 14, 2013.

Under the hood–how does Process Robotics work? Process Robotics can execute routine tasks to which the federal government is currently allocating human resources with a higher throughput rate, significantly reduced error rate, and less reliance on costly contractor support.

Through a lightweight approach, Process Robotics can train 'bots' that automate repetitive tasks of medium complexity without changes to the existing process infrastructure.

Process Robotics bots can be built in a matter of days vs. months, can react to dynamic changes in underlying infrastructure without intervention, and can interact with data sources to learn from exceptions as they occur in real- time. All with the same controls as the user.

Step 1: Process Developers specify the detailed instructions for 'bots' to perform and publish them to the 'bot' controller repository

Step 2: The 'bot' controller is used to assign jobs to robots and to monitor their activities

Step 3: Each 'bot' is located on a client environment— which may be virtualized or physical—where it interacts directly with business applications
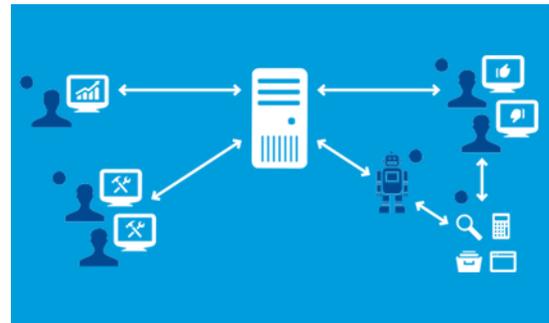
Step 4: Business users review and resolve any exceptions or escalations

Step 5: 'Bots' are capable of interacting with a wide range of existing enterprise applications

Engagement approach
In order to develop and deploy initial Process Robotics 'bots' against long-standing business processes, one needs to assemble a design and deployment team of trained practitioners that understand legacy processes and systems, programming, process familiarity, and understands how to negotiate the way processes will be handled in the future.

The following roles should be considered for a successful deployment:
Operating Model Analyst (OMA): Subject matter expert that analyses the process environment to understand where Process Robotics 'bots' can be deployed.

Technical Design Architect (TDA): Technology expert that understands and designs placement of Process Robotics bots in process environment.

Business Transformation Integrator (BTI): Business integrator that takes the business process and performs the work of the transformation and integrates the Process Robotics 'bot' into the environment.

Quality Tester (QT): Independent evaluator of the new design, implementation plans, and operational metrics and outcomes.

Getting started
Federal agencies will need to select pilot processes with high cost attributes, low service level conditions, or those that exhibit ineffective business processes, define automation scenarios and desired outcomes, and consider the impact of contemplated automation changes across their organization and teams. There are typically five steps to developing an automation strategy:

What? **Assess for Process Robotics opportunities** Which process are good candidates for Process Robotics, which processes are suitable to pilot, what are the impacts of the pilot?

Why? **Build your business case**
What are the benefits, what are the pain points being alleviated, what is the strategy for re-deploying existing staff after automation to mission when available?

How? **Determine the optimal operating model**
Which operating model works best for your organization, do you have the right team to support the new Process Robotics?

Who? **Identify Process Robotics partners**
Who are the main vendors most suited for your organization, which sourcing option makes the most sense?

When? **Plan the Process Robotics roadmap**
How long should the pilot be, how will you scale, how will you communicate demonstrated value to stakeholders?

Making the federal case for Process Robotics
Process Robotics leverages advanced technologies and has already demonstrated its case across multiple commercial entities. If the federal government can utilize this technology, it can be able to realize unprecedented cost savings and operational efficiencies that mirror what their commercial counterparts have been able to achieve, driving more funding to the core mission of the agency while still providing quality operations support services.

The benefits of Process Robotics outweigh traditional approaches such as large scale IT transformation, Business Process Management Suite (BPMS) implementation, and outsourcing which tend to be lengthy, costly to implement, and require integration across multiple legacy systems as shown in the figure below.

Transforming to the use of Process Robotics can enable federal agencies to:
- Improve ability to focus limited resources on high-value tasks
- Automate time-consuming, error prone, and repetitive back office transactions
- Improve statutory compliance rates to new legislative mandates (DATA Act, Affordable Care Act)

Process Robotics in action
With innovation like IBM's Watson, products like Automation Anywhere bot tools, IpSofts Amelia and many others, technology is advancing and enabling Process Robotics.

Process Robotics impact on the federal government

Process Robotics can provide federal agencies the capability to operate more efficiently with reduced resources. Process Robotics can be impactful in any function running high volume, rules-based work. It can perform these tasks around the clock at a fraction of the cost of a human resource without manual errors or need for mitigating processing risk.

The technology Process Robotics brings to the table is far more advanced and capable than any previous solution to the government's growing challenges. Whether it be operational, HR, or procurement processes, Process Robotics could be the solution.

Next steps for the federal government

While Process Robotics is emerging from its infancy, it is clear that it is can be an effective solution to some of the federal government's most pressing problems. Leaders should consider closely monitoring the deployment and success of Process Robotics, and continually think about different ways this technology can be applied across federal agencies.

It is important to remember that successful automation of complex services is as dependent on the orchestration of diverse initiatives and proper service delivery as on the technology itself. While the potential impact that Process Robotics can make seems infinite; how quickly Process Robotics will begin to transform the way we work across the board remains to be seen.

Federal security considerations

As stated in the Federal Information Security Modernization Act (FISMA) of 2014, federal agencies will need to be mindful of their Certification & Accreditation policies and procedures, i.e. approved software lists.

Having a vendor accredited through the government-wide cloud could accelerate more rapid deployment across multiple agencies. It is also recommended to engage with agency technology groups to help the operations groups achieve the greatest impact.

Summary

Process Robotics is now in production globally. Resistance to change is normal, but should not stand in the way of progress. Nearly every process has areas that can benefit from Process Robotics, where is your pilot?

Contacts

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