CGI

Intelligent Automation Opportunities in the Federal Government

Making the most of robotic process automation and artificial intelligence

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Intelligent Automation for Federal Agencies

As technologies like software robots and machine learning become increasingly accessible, federal agencies are finding intelligent automation can provide both quick wins and long-term benefits. This paper presents key considerations to help agencies pursue intelligent automation efforts that will make the most business sense, reduce overall risk, and be more likely to meet agency expectations.

According to a 2017 survey by the Institute for Robotic Process Automation and Artificial Intelligence, the top five task areas that organizations automate are financial operations, human resources, information technology, procurement, and data analytics.

INTRODUCTION

Encompassing a spectrum from basic robotic process automation (RPA) to artificial intelligence (AI), intelligent automation (IA) provides potential for significant efficiency gains across the federal government. Intelligent automation impacts can be felt immediately, as processes that once took days are now completed by software robots in a matter of hours, minutes, or in some cases, seconds. When applied at scale, intelligent automation is a tremendous, cost-effective accelerator for enterprise digital transformation.
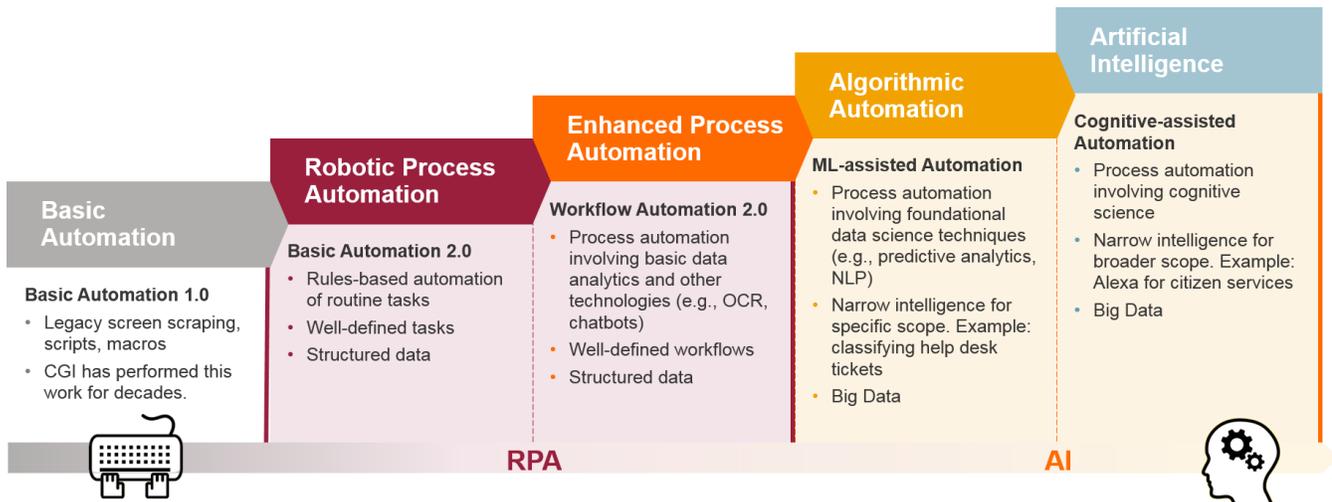

Basic Automation

Basic Automation 1.0
- Legacy screen scraping, scripts, macros
- CGI has performed this work for decades.

Robotic Process Automation

Basic Automation 2.0
- Rules-based automation of routine tasks
- Well-defined tasks
- Structured data

Enhanced Process Automation

Workflow Automation 2.0
- Process automation involving basic data analytics and other technologies (e.g., OCR, chatbots)
- Well-defined workflows
- Structured data

Algorithmic Automation

ML-assisted Automation
- Process automation involving foundational data science techniques (e.g., predictive analytics, NLP)
- Narrow intelligence for specific scope. Example: classifying help desk tickets
- Big Data

Artificial Intelligence

Cognitive-assisted Automation
- Process automation involving cognitive science
- Narrow intelligence for broader scope. Example: Alexa for citizen services
- Big Data

RPA   AI

Figure 1: CGI's Intelligent Automation Spectrum for Federal Agencies

As with other emerging technologies over the years including mobile, cloud and cybersecurity, it has been critical to educate the enterprise on the range of opportunities that are possible with intelligent automation—and also to clear up misconceptions that can impede progress.

Perhaps the most pervasive misconception is that automation is a tool to reduce the workforce. Whether this belief is a source of anxiety or anticipation depends on a person's position and role within an organization, but it is commonly held. Other concerns include:

- Reduced budgets as efficiencies increase
- Increased information assurance risk
- A variety of organizational change management challenges

These misgivings may seem all too familiar, as they arise whenever any significant change is being made to existing processes and operations. Agency leaders should recognize the importance of education to address these concerns so that intelligent automation implementations are not hindered unnecessarily.

For example, organization leaders should think through how intelligent automation can free up employees from mundane tasks to focus on higher value activities. These activities may include a greater focus on citizen-facing services to improve the customer experience, or back-office improvements to more effectively support the mission. By making these opportunities an explicit part of a strategy for intelligent automation, agency leaders will be better equipped to keep their organization well informed, address workforce concerns of anticipated changes, and improve the overall ROI of its automation initiative.

ROBOTIC PROCESS AUTOMATION

RPA is the logical evolution of basic business process automation. It shifts an organization's operational mindset from a traditional, human-first approach to a hybrid human-robot workforce that is focused on holistic automation. RPA is being rapidly adopted to automate an increasing percentage of business and IT processes. Depending upon the scenario, software robots can be designed to execute with or without human intervention.

In 2018, the CGI Client Global Insights[1] found that 56 percent of central and federal government respondents are in some phase of testing or implementing RPA.. While that figure is not specific to the U.S. federal government, it does indicate the high degree of interest that has developed to the point of action in a relatively short time.

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[1] As part of the 2018 CGI Client Global Insights, CGI conducted 1,400 in-person interviews with business and IT executives to gain insights on top industry trends and their business and IT priorities and plans. (www.cgi.com/client-global-insights)

According to a 2017 survey by the Institute for Robotic Process Automation and Artificial Intelligence,[2] the top five task areas that organizations automate are:

- Financial operations
- Human resources
- Information technology
- Procurement
- Data and analytics

RPA brings targeted improvements within specific transactions, processes and systems for a range of internal and external benefits that include:

- Consistency of responses and service across interactions
- Real-time off-hours processing of needs or requests
- Continuous compliance and security
- Real-time reporting on speed, performance, issues, etc.
- Integration of work involving multiple systems

RPA technology platforms enable a software robot to interact with applications to perform repeatable tasks by automating rule-based processes. They allow agencies to rethink business processes, enabling the workforce to turn their attention to higher value responsibilities. As software robots take over rote tasks, employees—aided by technology—can work on solving critical business and mission problems, and addressing neglected areas of operations. By augmenting human capital with RPA and more advanced intelligent automation capabilities, agencies can better achieve the fundamental goal of digital transformation—improved organizational effectiveness, accelerated by technology.

Through effective use of RPA, agencies also are better able to meet the expectations of customers, collect and analyze data, and share institutional knowledge from the memories of employees into an automated robotics platform.

ARTIFICIAL INTELLIGENCE

With intelligent automation, RPA is just the beginning. For example, artificial intelligence capabilities have matured to enhance RPA for more robust data-driven automations. Forty-two percent of central and federal government executives we interviewed for the 2018 CGI Client Global Insights say they are exploring AI. Agencies can consider a wider breadth of process automation possibilities, by applying AI algorithms and techniques to larger, unstructured data sets that would otherwise not be feasible for humans to analyze in a cost-effective manner.

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[2] Institute for Robotic Process Automation and Artificial Intelligence Survey. IRPA-AI. June 2017 (https://irpaai.com/2017-rpa-landscape-annual-review/)

While there is no one definition of artificial intelligence, it generally refers to a system's cognitive ability—learning to "think" in a manner similar to humans, enabling decision-making so that the system handles data and takes action just as a human would do—but with much greater speed and accuracy.

Artificial intelligence also plays a key part in intelligent data capture. Through AI, developers can create systems that use natural language processing and machine learning to facilitate data extraction. AI enables deep learning and data analytics that can bring new speed and depth to information processing and predictive analytics.

All of this adds up to an ability to automate more complex work. For example, in a hybrid cloud environment, AI can correlate IT asset management and event data to automate incident response, bringing self-healing capabilities to the infrastructure. Even if the overall operation is not repetitive enough to fully implement RPA, certain aspects can be given over to intelligent automation, leading to greater efficiency and accuracy in the management of the cloud environment, with tighter security and more strategic asset allocation.

WHY NOW?

RPA and AI platforms have matured in recent years through increased adoption and investments in both the private and public sectors. Intelligent automation toolsets have become more accessible to tech-savvy business users, more feature-rich for advanced developers, and easier for IT operations to manage and maintain.

The upfront costs, resources, and time required to implement an initial pilot also have sharply decreased, making the business case for intelligent automation more compelling for executive leadership. By taking an approach of "Think Big, Start Small, and Scale Quickly," agencies can focus automation efforts in a sequence of initiatives that make the most business sense, reduce overall risk, and are more likely to meet agency expectations.

GETTING STARTED

Intelligent automation is a complement to business process re-engineering. As federal agencies look to transform end-to-end business and IT processes, CGI recommends considering the opportunities of intelligent automation during the early stages of any process redesign initiative.

While most agencies will begin with a proof-of-concept and small projects, the ultimate goal should be enterprise scale. The earlier an agency can prove the value of intelligent automation and achieve quick-win ROI, the more successful the overall effort is likely to be.

To identify the most opportune applications of intelligent automation, agencies should consider:

- Which business processes are the most consistent or routine?
- Where do processes face bottlenecks or stoppages due to a heavy backlog of inbound requests?
- Which processes are the most labor intensive?
- Which processes require manual retrieval or analysis of structured data sources?
- Which processes require complex analysis of large sets of unstructured data, such as documents in an enterprise content repository?
- Which processes require frequent rework or revisions due to compliance failures, fraud, or other irregularities?
- Which processes are overly complex and are strong candidates for re-engineering?
- Which business processes rely heavily on integration with multiple legacy systems that are prone to unplanned outages or downtime?

As this list suggests, there are two broad qualities of a process that are ripe for automation: either they are marked by complexity, such as multiple data streams, regulatory compliance, or high demand; or, they are simple routines, done the same way every time.

However, agencies should not pick their most challenging projects for their early forays into intelligent automation. Start with easily accomplished efforts that can still demonstrate a level of calculable ROI. Early success will build confidence, among all of the various groups affected by intelligent automation. As agency leaders see a proof-of-concept working as expected, and begin to realize its expected return on investment, confidence in intelligent automation will rise and leaders will be less hesitant to approve more ambitious projects.

Judicious choices of which processes to automate will always be critical, no matter how confident agency leaders become. Before implementing any projects, agencies should conduct an intelligent automation assessment to identify, quantify and qualify scenarios. Selecting just a few that are strong candidates for automation and which will yield the largest ROI. Additional assessments after the initial implementation can reveal still more processes where intelligent automation could benefit the organization.

DEFINING SUCCESS

To succeed in intelligent automation, it should be approached as a workforce-related business process evolution rather than a technology implementation. Granted, the technology is important, and implementing it well plays a role, but at a basic strategic level, automation changes the shape of an organization's workforce needs.

Because of the significant impacts intelligent automation can have within an organization, change management is essential. Whether through the organization's own employees or an industry partner, experience with change management is critical. The majority of technology projects that fail do so at least in part because they lack a defined change management strategy.

The only way to know for sure whether a project has fulfilled its purpose is to measure outcomes. Because intelligent automation can apply to such a varied range of activities, the exact metrics are project-specific. However, in general, success metrics might include:

- Higher quality, increased accuracy, and time savings
- Greater consistency in service delivery
- Enhanced customer experience and customer service
- More effective utilization of budget
- Greater workforce flexibility and employee satisfaction
- Improved compliance and reduced fraud

HOW CGI CAN HELP

CGI provides expert services to help federal agencies:

- Assess automation opportunities
- Build a strategy and business case
- Establish a cost-effective operating model
- Plan and execute a strategic automation roadmap
- Develop, implement, and manage intelligent automation solutions

Our services are specifically designed for the unique needs of government agencies to realize the benefits of automation without added complexity or risk. Working with CGI from the beginning provides expertise and continuity throughout the project's life. However, we can join you at any stage.

LEARN MORE

To find out more about CGI's offerings for the federal government, go to
www.cgi.com/us/federal, or contact us at info@cgifederal.com.

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