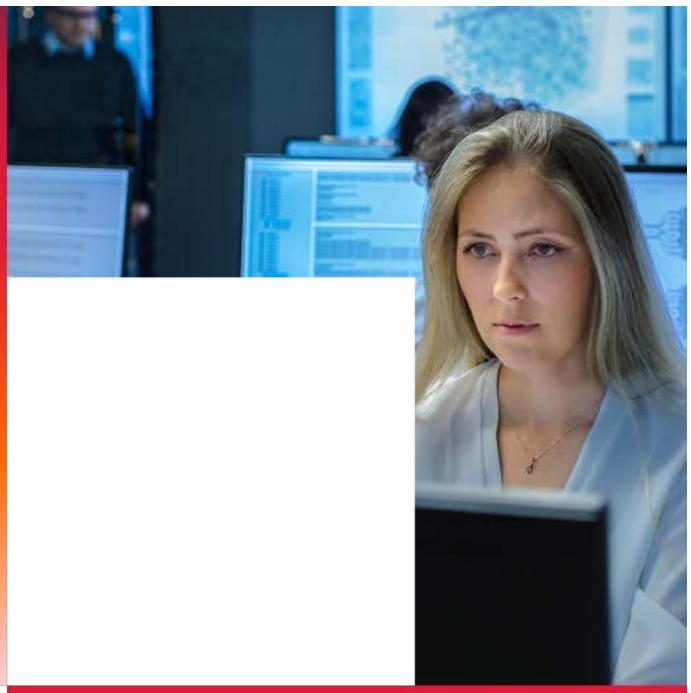

Intelligent Automation

Optimizing mission results with Robotic Process Automation and Artificial Intelligence

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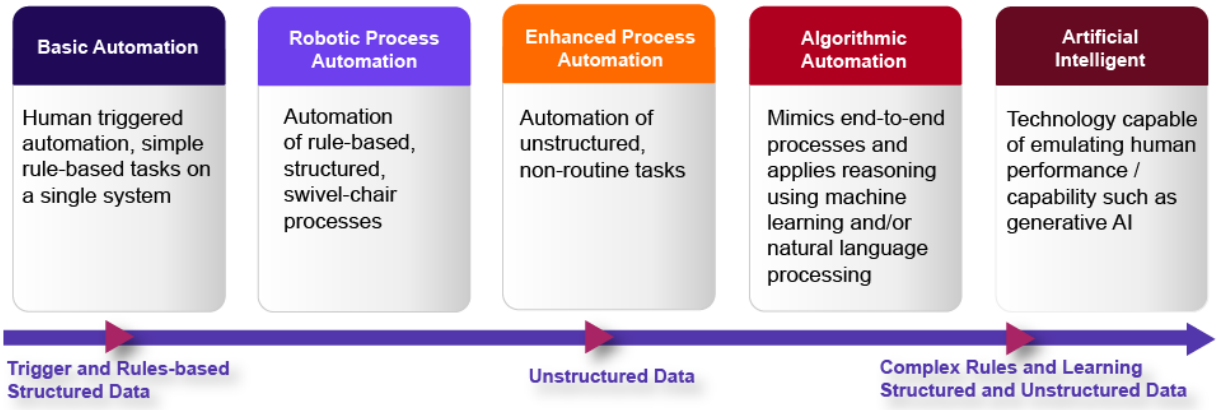
Intelligent automation

As bots, machine learning and artificial intelligence solutions become increasingly accessible, federal agencies recognize that intelligent automation can provide both quick wins and long-term benefits.

Intelligent automation brings emerging technologies such as robotics, Internet of Things (IoT), advanced analytics and artificial intelligence (AI) to bear to improve government services. Fundamentally, intelligent automation directly enables operational efficiencies and supports more data-driven decision-making.

Intelligent automation can include relatively simple automations leveraging robotic process automation (RPA), conversational AI solutions like chatbots or IoT-based automations, as well as AI-powered cognitive virtual agents or augmented reality. When applied at scale, intelligent automation is a tremendous, cost-effective accelerator for federal digital transformation.

Figure 1 – Intelligent automation spectrum



As with other emerging technologies over the years, including mobile, cloud and cybersecurity, federal leaders have had to educate the enterprise on the range of opportunities that are possible with Intelligent Automation—and clear up some 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 the organization. Other concerns may include:

- A reduction in budget as efficiencies increase
- An expansion of information assurance risk
- A variety of organizational change management challenges

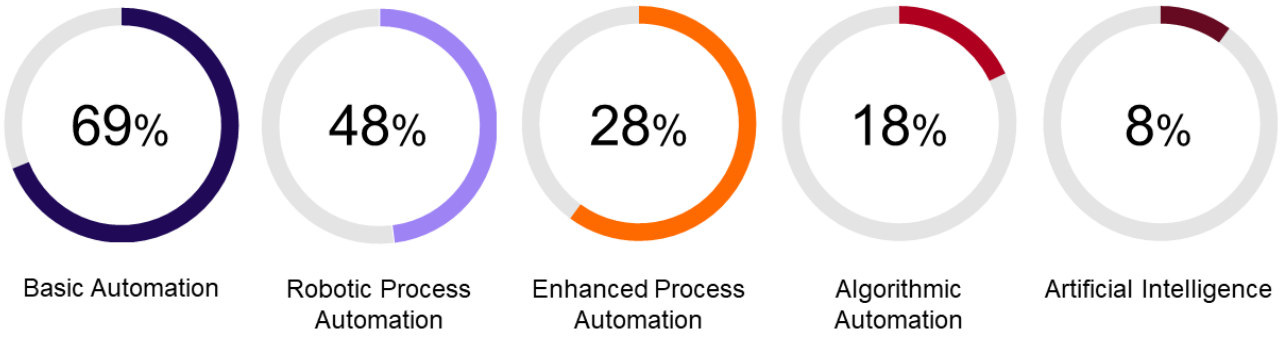
These misgivings may seem all too familiar, as they arise whenever significant change is made to familiar processes and operations. Agency leaders should recognize the importance of change management to address these potential concerns so that intelligent automation implementations are readily adopted.

The evolution of robotic process automation

As the logical evolution of basic business process automation, RPA has gained traction for automating repetitive, high-volume manual processes involving multiple applications, enhancing employee productivity and lowering costs. It shifts an organization's operational mindset from traditional, human-first interactions to a hybrid human-robotic workforce focused on holistic automation. Depending upon the scenario, software robots can be designed to execute with or without human intervention.

Robotic process automation has come a long way since its first U.S. federal government use in 2017. In 2023, as part of the CGI Voice of Our Clients program, we met with 267 central and federal government executives to gain insights into their top trends, priorities and plans. Figure two highlights the types of automation leaders said they are most frequently leveraging (either implementation in progress or completed).

Figure 2 – Use of intelligent automation in central and federal government



The largest growth area has been in RPA, up 12 percentage points from 2022. And agencies are achieving results. The 2021 State of Federal RPA Report, published by the RPA Community of Practice, reviewed 49 programs that had created almost 1,000 automations, freeing up almost 1.5 million hours of capacity.

RPA brings targeted improvements beyond efficiency gains. When applied to specific transactions, processes and systems, RPA can help achieve:

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

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

The emergence of artificial intelligence

Over the past few years, intelligent automation capabilities have matured quickly, and many agencies are introducing more robust, data-driven automations in addition to RPA. To achieve mission results, agencies are looking to leverage artificial intelligence toolsets and techniques. For example, large language modeling (LLM) techniques are very popular for interrogating data sets that would not otherwise be possible to analyze cost-effectively.

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

Artificial intelligence is defined by United States Code as
"a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations or decisions influencing real or virtual environments."

Although AI has been in use in the private sector for some time, the role of AI in government has received significant attention recently with the introduction of capabilities such as large language models and Generative AI. AI, though, is a much broader term, and we suggest that agencies take this broader definition of AI—encompassing various forms of data science-driven automation techniques—when considering the applicability of these technologies to federal use cases.

While significant hype surrounds the use of AI, only a few federal agencies have implemented this type of advanced automation in production. As shown in Figure 2 above, the CGI Voice of Our Clients program revealed that, globally, only 8% of central and federal government executives indicated they had AI implementations in progress or completed. Certainly, though, agencies are exploring its potential. At the end of calendar year 2023, U.S. federal agencies had identified over 700 potential use cases for AI leveraging techniques such as natural language processing, machine learning, neural networks and deep learning.

Government constituents are equally aware of AI. Directly from their smartphones and tablets, people are using AI-driven apps in their daily lives for banking, energy consumption, shopping and more. Becoming digital to meet citizen expectations continues to be the top trend government executives cite in our global research. Now is the optimal time to evaluate how AI innovation can support that transformation.

The value of a holistic intelligent automation strategy

RPA and AI platforms have matured in recent years through increased adoption and investment. 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 have sharply decreased, making the business case for intelligent automation more compelling for executive leadership. For some organizations, the question now is how to best leverage the full spectrum of intelligent automation, at scale, to achieve operational efficiencies, improve citizen services and deliver mission results.

For organizations in the early stage of their digital transformation, intelligent automation can play a key role in aligning digital workflows and automating processes. AI-enabled digital assistants offer opportunities to deliver real-time information to agency employees to aid in supporting the mission.

Agencies with mature architecture models are well-positioned to leverage intelligent automation platforms at scale. IT organizations that have invested in well-managed cloud and DevSecOps processes can apply more advanced automations, at scale, that understand, automate and operate end-to-end processes.

Defining success

To succeed in intelligent automation, approach it 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. The workforce must understand and support the introduction of automation to adopt it. In addition, as agencies introduce more complex, data-driven intelligent automation, such as generative AI, they must consider a broader set of stakeholders beyond the workforce—constituents who want to understand that ethical AI practices are being used at that the outputs of AI methods are reliable and unbiased.

The only way to be certain that a project has fulfilled its purpose is to measure outcomes. Because intelligent automation can apply to such a variety range of activities, the exact metrics are often project-specific. However, taking a holistic approach, organizations can define high-level key performance objectives to be measured across intelligent automation projects. This rigor enables effective evaluation of automation investments, recognizing that once deployed, automations must be maintained. General key performance indicators may include:

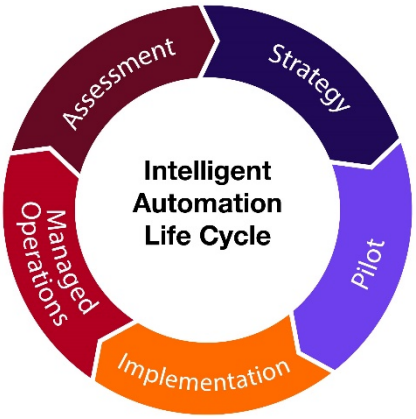
- Higher quality, increased accuracy and time savings
- Greater consistency in service delivery
- Enhanced customer experience and customer service
- More effective utilization of budget
- Greater workforce flexibility and employee satisfaction
- Improved compliance and reduced fraud

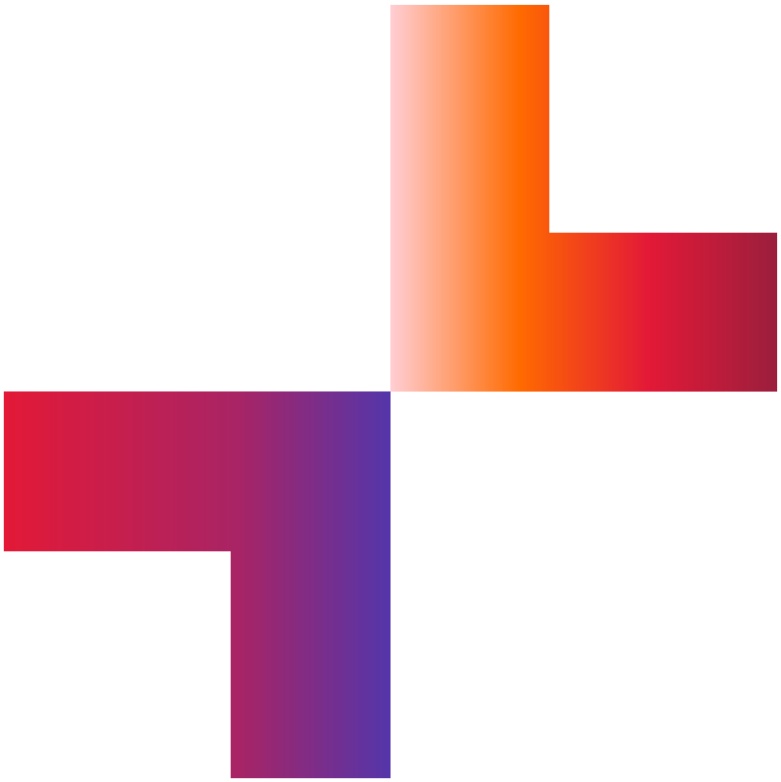
How CGI can help

CGI collaborates with agency business and IT leaders to mature use of RPA at greater scale, applying our intelligent automation life cycle approach:

- **Assessment:** Through a series of business and technology assessments, we work with you to define organizational automation goals, desired outcomes and key performance indicators that will measure IA activity and workforce impact.
- **Strategy:** Our experts engage with you to develop enterprise strategies and roadmaps, plan pilot projects, select technologies, manage change and justify investments through robust benefits/ROI analysis.
- **Pilot:** We engage with your stakeholders to develop initial pilots that deliver near-term business value, establish proper governance, and instill best practices for development and operations for scaling up enterprise-wide.
- **Implementation:** Leveraging agile best practices, we collaborate with you and your stakeholders to rapidly develop, test and release automations across the enterprise's programs and services. We apply secure-by-design approaches, working with agency security personnel to define bot credentials in compliance with agency zero trust objectives.
- **Managed operations**: Automations, like any IT services, have a life cycle; we review automation investments to assess viability and adjust as warranted. We instantiate a government- or CGI-managed Robotic Operations Center (ROC) to reduce the burden associated with long-term operations and maintenance of the enterprise IA program.

Figure 3 – CGI's intelligent automation life cycle approach





Insights you can act on

Founded in 1976, CGI is among the largest IT and business consulting services firms in the world. We provide comprehensive, scalable and sustainable IT and business consulting services that are informed globally and delivered locally.

CGI works with federal agencies to provide insights-driven solutions for civilian, defense, space and intelligence, federal health services and national security missions. Our teams have deep roots in the public sector, bringing a diverse range of capabilities and experiences, and a rich historical understanding of our customers' challenges and operational requirements. We operate at the intersection of bold thinking and disciplined execution to rapidly achieve mission outcomes at scale.