The Robots are Coming: Driving Efficiency in Contracting
Workshop Session #4
March 13th, 2019
Today’s Agenda

- Workforce of Today vs. Workforce of Tomorrow
- What is Robotics & Cognitive Automation and What are the Potential Impacts?
- Agencies with Robotics w/ Federal Use Cases
- Current Processes Breakout Exercise
- The Robotics Roadmap
The workforce of today has three primary personas doing all transactional/administrative work along with mission driven work...

We want to focus on high value work...

...but there is so much transactional, ‘data gathering’ work that needs to take place before we can get to the mission-focused ‘data user’ activities.

The amount of time spent on transactional work limits the amount of time available for analysis & innovation...

Mounting issues... compliance, backlog, not enough staff, overtime, excessive contractor spend...

Time spent on work

Represents ‘human workforce’

Nature of work

Data Gathering

Data Using
R&IA add a fourth ‘Digital Personal’ to the ‘Total Workforce’ of tomorrow

As the newest member of the ‘Total Workforce’ I can handle transactional work, unstructured data ingest & insight generation.

Freed from transactional work, we can spend more time analyzing data, making informed decisions, & innovating!

R&IA
‘Digital Workforce’

Time spent on work

Represents ‘Digital workforce’

Shifting workforce towards using data as opposed to gathering

Represents reallocation of human workforce

Data Gathering
Nature of work
Data Using

Leadership
Contract Support
Staff / Analysts
Robotic & Intelligent Automation extends Process Robotics to include Intelligent Optical Character Recognition and Intelligent Automation.

Robotic & Intelligent Automation (R&IA) moves the Public Sector further along the AI spectrum.
Robotic & Intelligent Automation (R&IA) is delivered through software that can be trained to undertake rules-based tasks.

**What it can do**
- Opening email and attachments
- Logging into web/enterprise applications
- Moving files and folders
- Copying and pasting
- Filling in forms
- Reading and writing to databases
- Scraping data from the web
- Connecting to system APIs
- Making calculations
- Extracting structured data from documents
- Collecting social media statistics
- Following “if/then” decisions/rules

**Intelligent OCR**
- Use of Machine Learning, NLP, and OCR engines to perform content classification and advanced extraction
- Verification of extracted data via connection to external services
- Adobe PDF reader
- Simple rules-based text conversion

**RPA**
- Software
- Rules-based
- A tool
- Physical, walking, talking robots
- A system or application

**Intelligent Automation**
- Predictive modeling and machine learning
- Pattern and image recognition
- Intended to displace workers from jobs
- Able to go rogue and act independently
Robotic & Intelligent Automation has already demonstrated real impacts through various implemented projects throughout Government.

- **Funds Disbursement Process**: 85% reduction in processing time.
- **Security Fitness Assessment (SFA) Process**: 72% reduction in transactional task costs, 100% reduction in transactional task hours, 92% reduction in processing time.
- **Financial Collection Process**: 205% ROI, 87% reduction in transactional task hours, 30% reduction in processing time, 20% increase in process accuracy.
- **Lab Proficiency Testing Process**: 98% reduction in processing time.
- **Uploading Financial Adjustments Process**: 95% reduction in transactional task hours, 68% reduction in processing time.
- **Cash Reconciliation Process**: 89% time savings.
- **Un-submitted Time Valuation Process**: 95% reduction in transactional task hours, 92% reduction in labor costs, 4% increase in process accuracy.
100+ robots are currently being delivered across 36 federal agencies, helping them realize rapid ROI.

Client Bots by Function*:

- Finance, 67
- Mission, 23
- IT, 3
- HR, 1

*Less than total number of bots due to masked or TBD functions

Client Bots by Account Industry:

- Health, 12
- Defense/Security/Justice, 33
- Civilian, 35
- State / Local / Higher Ed, 6

Client Bots by Vendor Type:

- UIPath, 67%
- AA, 15%
- Blue Prism, 10%
- Kofax Kapow, 9%
- N/A, 5%
- Nuance, 1%

Client Highlights

**Scenario 1**  
**Document Management**

- Hours Saved Annually: 31,500
- 90% reduction in processing time
- Documents Processed/Year: 90,000

**Scenario 2**  
**Reporting & Consulting Processes**

- 2x Throughput increase
- 1,200+ Hours Saved Annually

**Scenario 3**  
**Supplier Intake**

- Federal Developers advised & trained
- 93% reduction in processing time
- 99.9% Compliance Increase

**Scenario 4**  
**Financial and Accounting Processes**

- 6x Throughput capacity increase
- 59% reduction in processing time
- 4 FTEs Added capacity

All bots placed in production were completed within 12 weeks.
## Process Selection Criteria Used to Identify Processes for Automation

### What makes a process a good candidate for Process Robotics?

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<th>Criteria</th>
<th>Description</th>
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| **Number of Systems Used** | Process should typically require employees to access multiple independent systems to complete the process. | List of Systems Used  
                      |                                                                           | Ease of Access / Integration                      |
| **Transaction Volume**  | Process need not necessarily be limited to high-value transactional processes. Any process that is labor intensive, time-consuming, or has high-cost impact errors qualifies. | Annual Volume  
                      |                                                                           | Subject to Seasonality                            |
| **Prone to Errors or Re-Work** | Manual activities in the process today result in errors due to human operator mistakes (e.g. complexity of work or infrequency of activity). | Error Frequency  
                      |                                                                           | Error Impact                                      |
| **Process Predictability** | Process needs to be defined in terms of a set of unambiguous business rules. | Size of Decision Trees  
                      |                                                                           | Business Logic Complexity                         |
| **Rules Based Exception Handling** | Simpler processes with little exceptions in delivery are excellent candidates in the beginning. With experience, there is potential to expand to processes that are more complex or error prone. | Number of Exceptions  
                      |                                                                           | Business Rules for Exceptions                     |
| **Manual Work Involved** | Process should have little automation support today and large amounts of manual work. | Number of Keystrokes  
                      |                                                                           | Number of FTEs                                    |
| **System Upgrade Timing** | Process should be avoided if it interacts with a system scheduled for a major planned upgrade within 6 months. Major upgrades beyond minor enhancements need to be planned for in order to prevent rework. | Date of Upgrade  
                      |                                                                           | System Importance to Workflow                     |
| **Controls Importance** | Process that is high-risk or has sensitive data that requires strong oversight and set of internal controls. | Process Risk Levels  
                      |                                                                           | Audit Data Requirements                            |
|                         |                                                                           | Regulatory Demands                                 |
Prompt: For what specific task(s) or subtask(s) in the contracting process could Process Robotics be employed?
A deliberate path starts with an assessment followed by a pilot project, and sets the stage for enterprise scalability.

**The Process Robotics Roadmap...**

- **Operating Model Assessment**
  - Ideation and prioritization
  - Domain prioritization
  - Process analysis
  - Business case development

- **Proof of Concept PoC) / Pilot**
  - Leverage OMA to accelerate build and reduce implementation risk
  - Architecture analysis
  - Training – people, process, and tech

- **Launch Solution / Build COE**
  - Develop, test, and refine based on feedback from PoC / pilot
  - Build COE to govern capability

- **Scale Across Enterprise**
  - Identify resource requirements
  - Deploy solution at enterprise level, leveraging scalable infrastructure

- **Scale**
  - Identify resource requirements

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**OMA**

**Launch / Build COE**
We have generally observed...

| **Tactical, quick win RPA implementations are taking precedence over a cohesive, end-to-end strategy that considers change management implications** |
| **Organizations taking a de-centralized approach to RPA, testing the capability across multiple functions with uncoordinated initiatives** |
| **Organizations focused on demonstrating cost reduction – de-emphasizing broader value propositions of RPA and complementary technologies** |
| **Organizations taking a ‘try before you buy’ approach, testing various vendors in silos before considering Enterprise solutions, limiting the potential for scale** |
| **RPA is used to fix broken processes, which increases bot complexity, operational and control risk, and increases effort required to automate processes** |
| **RPA projects are often conducted in isolation with little consultation with other parts of the business** |

However, in planning, the best organizations...

| **Define an up-front strategy** including an Enterprise Operating Model, Delivery Methodology, Business Case, Change Management Strategy, and Roadmap |
| **Establish a centralized capability**, embedding RPA into existing Digitization & Automation programs and initiatives |
| **View RPA as one component of the Virtual Workforce** that can transform the way humans and technology interact, for both employees and customers |
| **Select one vendor and define an Enterprise Architecture** solution and set of standards that can be replicated and scaled across functional groups |
| **Stabilize and make processes as efficient as possible** before implementing automation to maximize value and reduce time and effort to implement |
| **Engage stakeholders from the program's outset** to ensure effective buy-in and adoption and align the RPA program with other investments and organizational priorities |

Organizations expanding their automation programs today can learn from a number of common pitfalls that early adopters experienced when deploying RPA at scale.
Process Robotics Presenters

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