Maximus Higher Education

NSPAA 29th Annual Technical Assistance Workshop

How Robotic Process Automation (RPA) Can Assist with Staffing Shortages and Improve SPA Operational Efficiency

June 5, 2025

maximus

Research administration consulting services and solutions

- Indirect Cost Rate proposals
- Space surveys
- Grants management
- Asset management

CRIS   WebSPACE   ERS

gettyimages
Credit: Galeanu Mihai

Introductions

Harold Horton – Maximus

Dr. Rashonda Harris – Maximus and Purple Sheep

Angela Garzon, Northwestern University

Walter Carper, Maximus

maximus

Agenda

- Maximus Background

- Federal Climate & Research Administration

- Staffing Crisis in Sponsored Programs

- Robotic Process Automation (RPA) and AI

Case Study: Maximus Partnership
- Invoicing at Northwestern University
- Demonstration of Invoicing Robot

maximus

Maximus Higher Education Practice

Organization and structure

- Established in 1985
- Headquartered in Northbrook, IL, with multiple satellite offices across the country

Consulting services

- F&A proposal assistance, Space Survey, Negotiations
- Fringe benefit rate proposals
- Reviews of service/recharge centers
- Moveable and Fixed Asset Inventory
- Sponsored Programs/Grants Management

Software Solutions

- AI - Robotic Process Automation
- Comprehensive Rate Information System (CRIS®) used by 250 institutions (90 of top 100)
- WebSpace® — Space Inventory and Survey System used by over 80 institutions
- Effort Reporting System ®

40
Years of Experience

30
Full-time consulting and IT staff

500+
Colleges and universities served (**over 30 HBCU's**)

Maximus Grants Management Services

- Organizational Review and Change Management

  o Structure/Staffing levels

  o Business Processes

  o Technology/AI - RPA

  o Staff Training

Maximus Grants Management Services

- Policies and Procedures Compliance Review
  - Review Pre-Award and Post Award Policies in High-Risk Areas
  - Option: update existing policies and SOPs and create new ones if needed

   	Policy requires updates for one or more of the following reasons: does not reference OMB, does not specify roles and responsibilities, or lacks key information.
   	Policy requires updates e.g., OMB requirements, does not specify roles and responsibilities, or lacks information.
   	No recommended changes

Risk Scorecard

Status	Policy	Recommended updates	Reference
 	Allowable Costs and Activities - Cost Principles Policy	Add clear definitions and examples of direct and indirect costs and those that that can be both e.g., Admin salaries. Link for "Chart of Allowable and Unallowable Costs does not work."	The OMB Uniform Guidance (§200.420 through §200.475) Cost Principles
 	Capital Equipment	Develop policy on classification, safeguarding, depreciating and retiring equipment.	OMB_200.313 Equipment
 	Cost Sharing	Missing guidance on reduction of effort. Combine with Cost Share Guidelines. Include in policy approvals for proposals which require too much cost sharing.	https://www.ecfr.gov/Cost Sharing
 	Cost Transfers	Add the procedure for processing cost transfers that require multiple reviews and approvals. Assign responsibility for approving cost transfers over 90 days.	http://www.ecfr.gov/Cost Transfers

6

Maximus Grants Management Services

- Interim Staffing for full cycle of Pre and Post Award Operations
  - proposal development, review, and submission
  - award management, billing/invoicing, collections
  - project closeout

✕ Definitions

Document Understanding AI

Document understanding leverages pre-trained Machine Learning Models to recognize documents by type and based on the type, extract information from the document using keywords and spatial clues.

Robotic Process Automation

RPA utilizes software robots to emulate human interaction with applications via their Graphical User Interface (GUI).

Zero Touch/Straight Through Processing Percentage

The ultimate achievement is to have the robots process everything (zero touch.) The degree to which that is achieved is expressed as STP% (straight through processing percentage.)

"Automate to Elevate"

Dr. Rashonda Harris, MBA, CRA

Automate to Elevate

- **Federal Climate & Research Administration**
- **Staffing Crisis in Sponsored Programs Offices**
- **Enter Robotic Process Automation (RPA) and AI**
- **A Human-AI Partnership**

maximus

Questions

Northwestern University Invoicing Process

Leveraging AI Document Understanding and Robotic Process Automation for "Zero Touch" Processing

Northwestern University Invoicing Process

- Average monthly volume of invoices received based on the past 3 months: ~578

- Daily processing goal: ~8-10 per team member

Current Challenges:

- Internal processes not completed/ incorrect

- Volume of incorrect invoices sent back to subrecipients paired with delayed response time

maximus

Northwestern University Invoicing Process

- Subcontract invoices are emailed to our central inbox and are manually downloaded and assigned to each of our 8 team members across the 4 reporting teams

- Invoices are received from various subrecipients with sponsors including NSF, NIH, and Foundations, to name a few

- An invoice is opened alongside its corresponding invoice tracker spreadsheet for data entry and review

- The invoice is reviewed for accuracy and compliance with contractual requirements

maximus

Northwestern University Invoicing Process

- Our internal processes are also reviewed before submission; Requisition approval, Purchase order change approval. Department is contacted if action is required

- If the invoice meets all requirements, it is submitted through our financial system NuFinancials where it is routed for department and then PI approval.

- ASRSP provides final approval of the submitted invoice and then payment is issued

maximus

NWU Invoice Processing

Prototype of RPA/AI enabled solution to automatically process invoices.

Walt Carper June 2025

Invoice Processing Demo

Document Understanding AI

Document understanding leverages pre-trained Machine Learning Models to recognize documents by type and based on the type, extract information from the document using keywords and spatial clues.

Robotic Process Automation

RPA utilizes software robots to emulate human interaction with applications via their Graphical User Interface (GUI).

Zero Touch/Straight Through Processing Percentage

The ultimate achievement is to have the robots process everything (zero touch.) The degree to which that is achieved is expressed as STP% (straight through processing percentage.)

Continuous Solution Evolution

**Document Understanding Improves over time…..**

- Initial training is performed using a representative sample from your vendor community.

- When the AI cannot decode with certainty, the human supervisor can correct AI. This new learning will become absorbed into the AI.

- STP% is rarely 100%, though 98% or more is achievable – there are always "oddball" documents that occur to infrequently to warrant retraining the AI – human exception handling is more cost efficient.

- Key metric for RPA is Hours Returned to the Business (HRB.) When the value of hours returned to the business exceeds the cost of the bots, then automated operations are a net benefit to operations.

Maximus Solution Advantage

We offer our customers distinct advantages through our platform:

- Our service platform is the UiPath Government Cloud – a FedRAMP certified for use by the Federal Government, DoD and other sectors where security is paramount.

- The fixed costs of service delivery are distributed across all customers.

- All customers benefit from continuous improvement of the AI/document understanding. The models are continuously refined and shared across the entire customer base.

- Although the platform is shared, every customer has an isolated instance and therefore, **data is not shared**. Your information is always yours and yours alone.

Invoice Processing
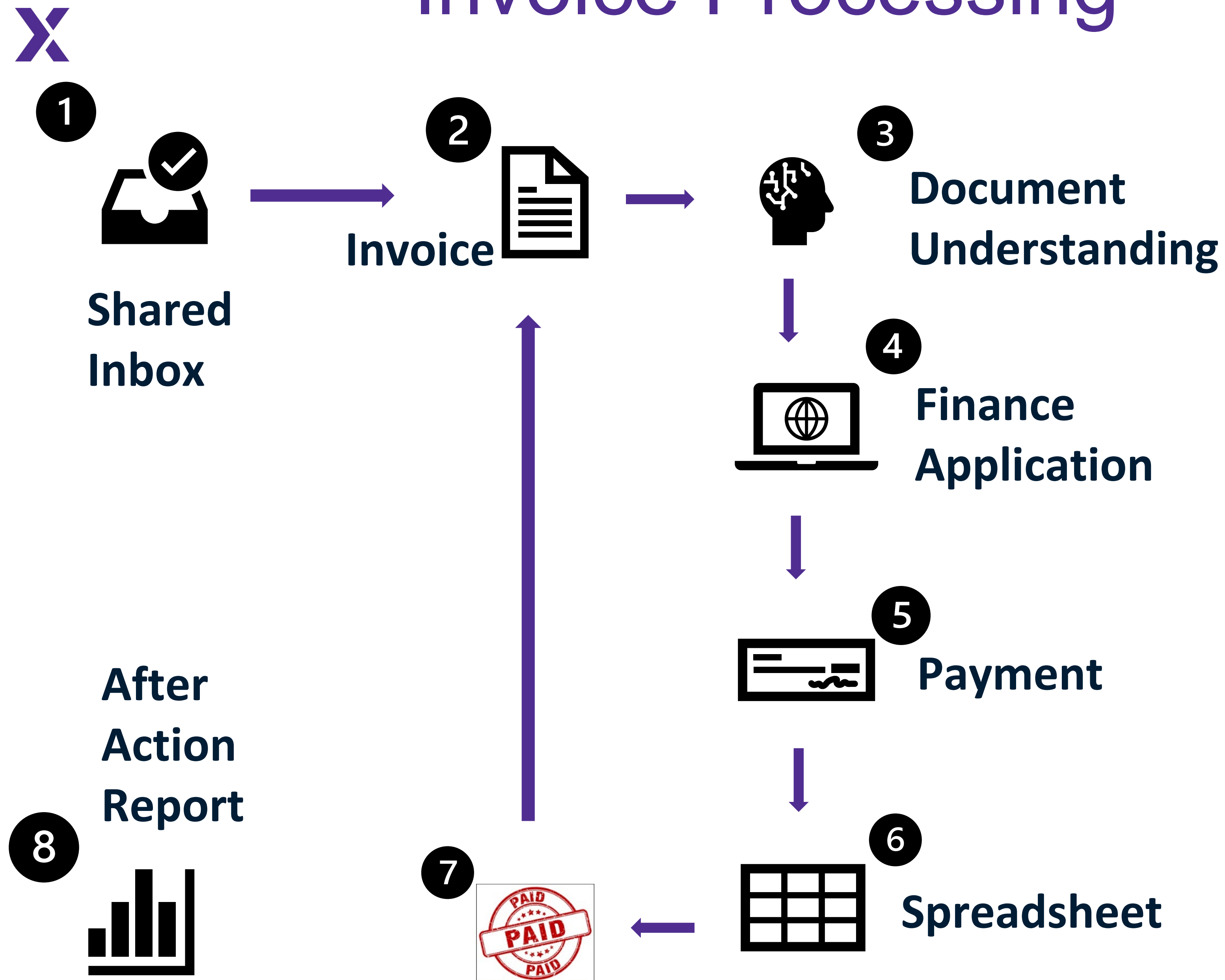
1. Invoices emailed to Shared Inbox

2. Invoice(s) extracted from email.

3. Document Understanding AI reads invoice and extracts key Information.

4. Financial Application opened to record payment and issue check.

5. Payment Issued

6. Transaction recorded in tracking spreadsheet.

7. Invoice is "stamped" paid.

8. After all invoices are processed, an after action report is sent to the business lead

Custom Solutioning

- This demo is a prototype that emulates the current manual process in use by NWU. It is not final and is still being refined.

- Every customer's workflow and business rules are different – our solution stitches together reusable components provided by UiPath and Maximus into a customer-specific **Process.**

- Maximus provides a pool of bots to run Processes. Customers can "share" bots or can have dedicated bots.

- Processes can be unattended or attended (interactive) – if a 'human in the loop' is required, we can leverage the "Action Center" where customers have a queue of actions to perform.

Maximus Contact:

Harold Horton
haroldhorton@maximus.com

THANK YOU FOR ATTENDING!