

# Robotic Process Automation

---

ADDING THE R TO THE PA @ VT

Melinda West  
Interim University Controller  
Virginia Tech

College and University Auditors of Virginia (CUAV)  
May 12, 2021

# Will robots take your job before you even graduate?

By Liz Hilton Segel & Susan Lund • November 5, 2019



Workers aged 18 to 34 hold almost 40%—or 14.7 million—of the US jobs that could disappear due to automation in the next decade.

The nurse will see you now.

# Today's Agenda

---

- What is Robotic Process Automation?
- Benefits of RPA
- RPA Process Development at Virginia Tech - Finance Division
- Next Steps

# History of Automation in VT Finance Offices

## Ledger Cards



## Mainframes

- IBM Terminals
- Scripts & Batches
- CRONs & Schedulers

## Document Management

- Typewriters
- WordPro
- Supercalc

## ERP 1990s

- Scripts & Batches
- CRONs
- Modifications
  - Invoice processing
  - Registration holds & removals
- Tuition Remission

## Document Management

- Microsoft Suite
- Mail and Email Merges
- Macros
- Document Management Systems

## Vendor/Hosted Solutions

- Lockbox to RDC
- Procurement
  - Internal Vendor Processing
- Ebill & Epay

# External Review and Recommendations to Explore Robotic Process Automation in 2018

---

- Payroll
  - Apply RPA to the VRS reconciliation to require less user intervention
- Accounts Payable
  - Utilize RPA to gain more automation in payables/expense processing by being able to make decisions and automatically enter data into the system
- Bursar
  - Employ RPA to automate and expedite the testing of all invoices



# What is Robotic Process Automation?

---

## *Robotic process automation is:*



Configurations that automate manual and repetitive tasks



Virtual 'robots' that integrate with existing software



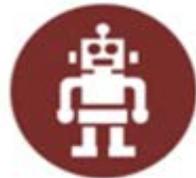
Replication of desktop actions



Driven by simple rules and business logic

---

## *Robotic process automation is not:*



A humanoid robot



Something that can entirely replace humans



Something that replicates human cognitive functions... yet

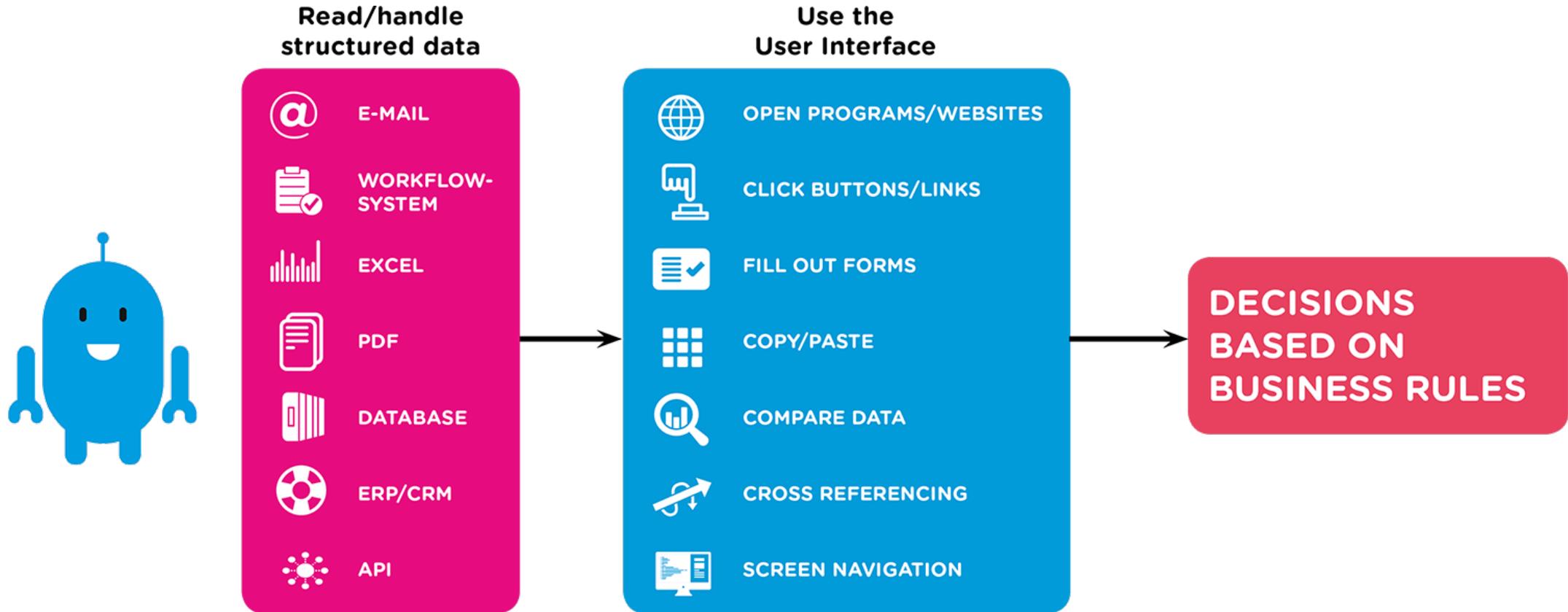
Robotic accounting is an increasingly popular solution for the **limitations of legacy and disparate systems** found in the finance and accounting operations, which have had a **direct effect on the operational efficiency** of back office finance operations and internal customers of shared services functions.

--Robotic Accounting, The Lab Consulting, July 7, 2018

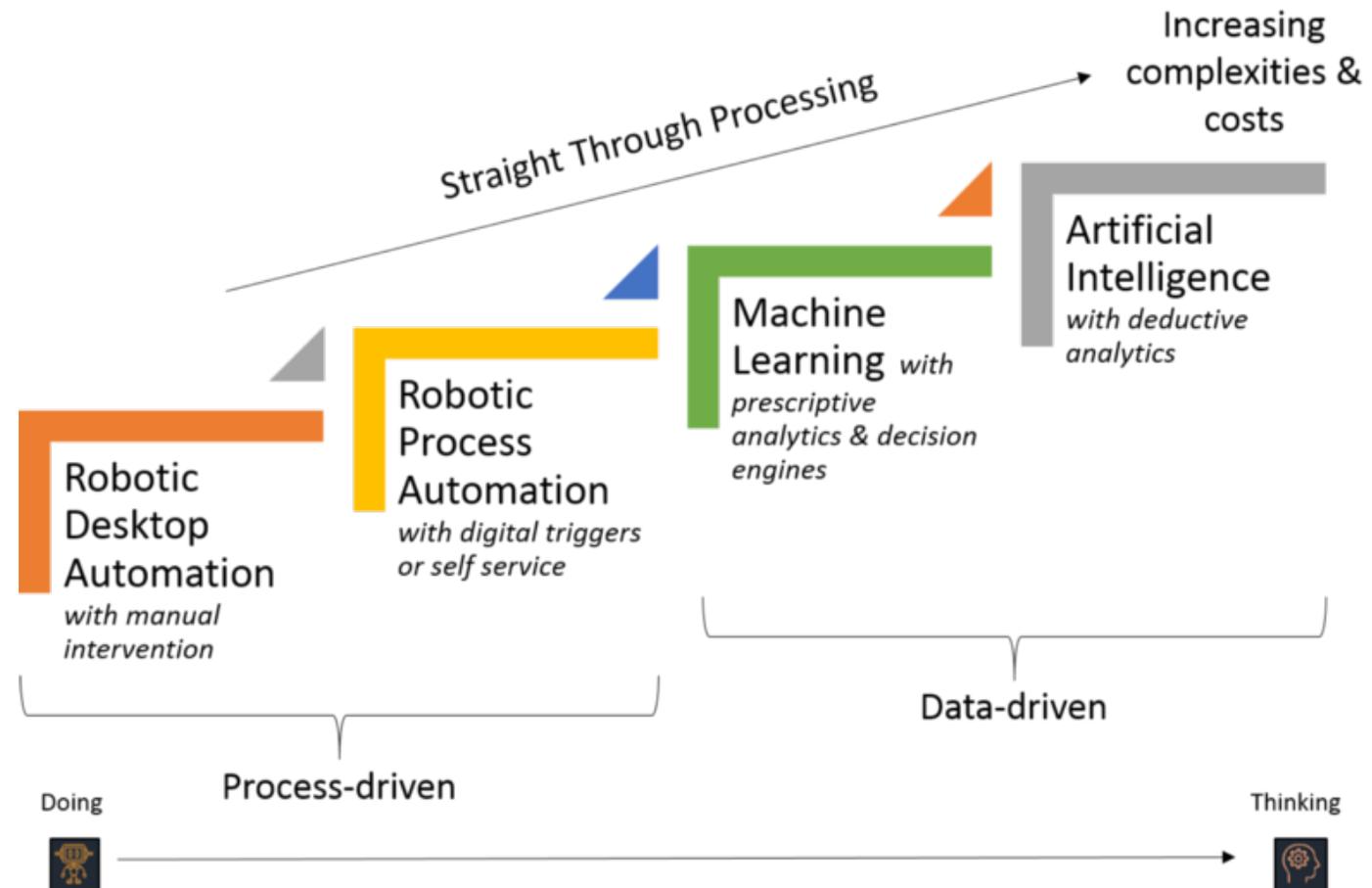
Robots in accounting and finance are similar to Excel macros. However, the key difference between them is that instead of being limited to the macro running only in Excel, RPA software runs across **any ~~accounting~~ application** that you point it to. Think of RPA as a macro that can tell three applications what to do instead of just Excel.

--Robotic Accounting, The Lab Consulting, July 7, 2018

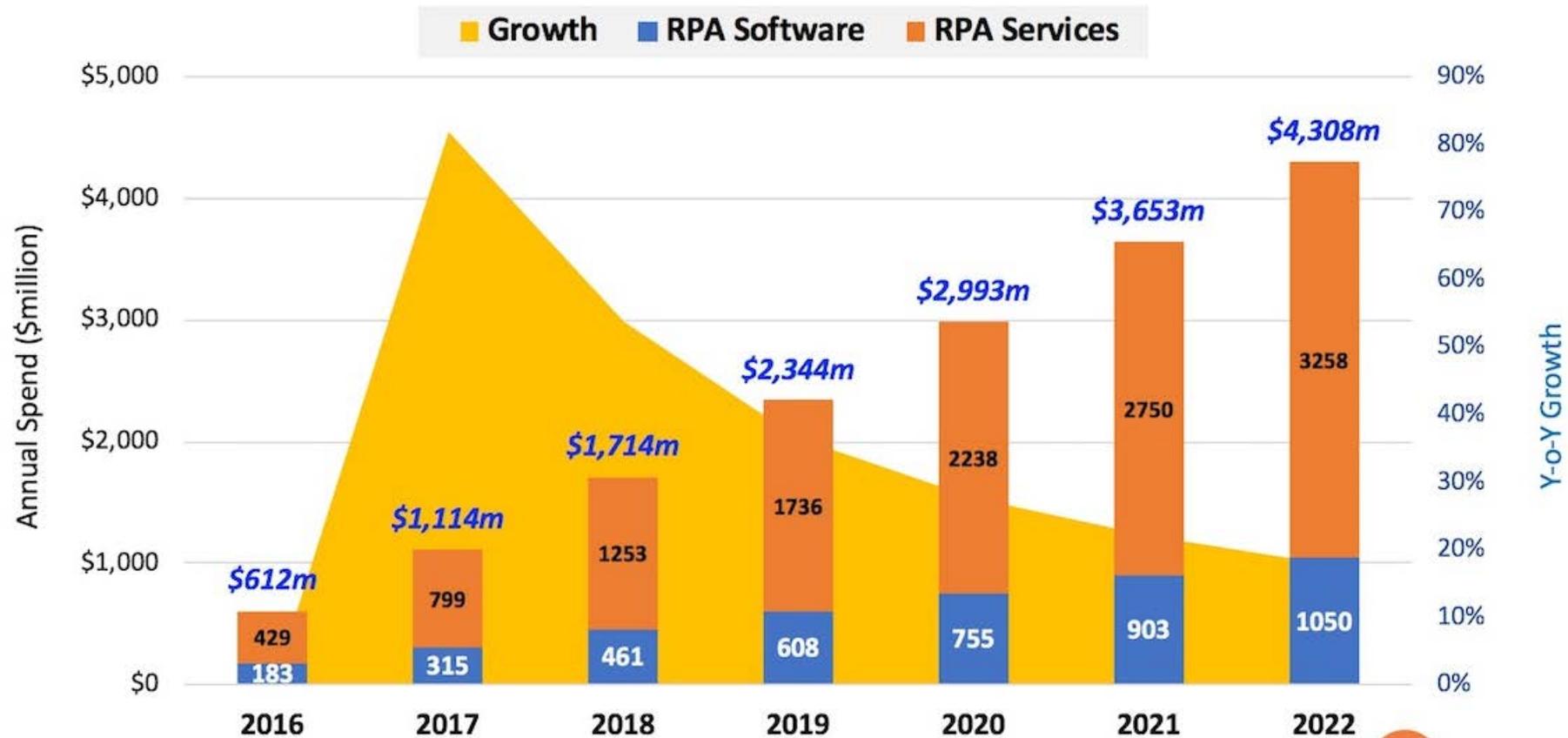
# What can Digital Workers do?



# The RPA Evolution



# RPA Market 2016-2022



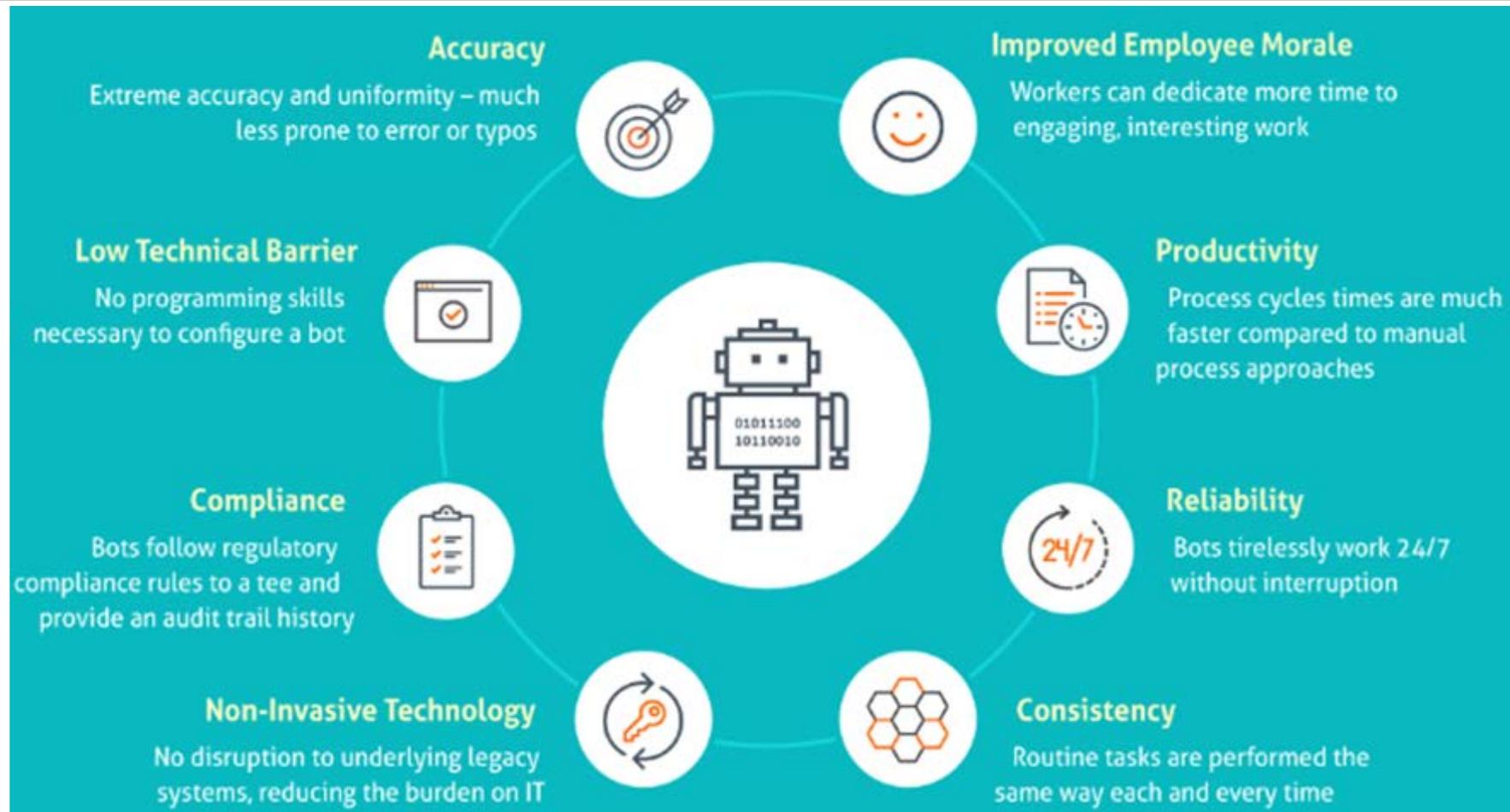
# What Industries/Functions are Ripe?

## RPA Adoption Across Processes And Industries

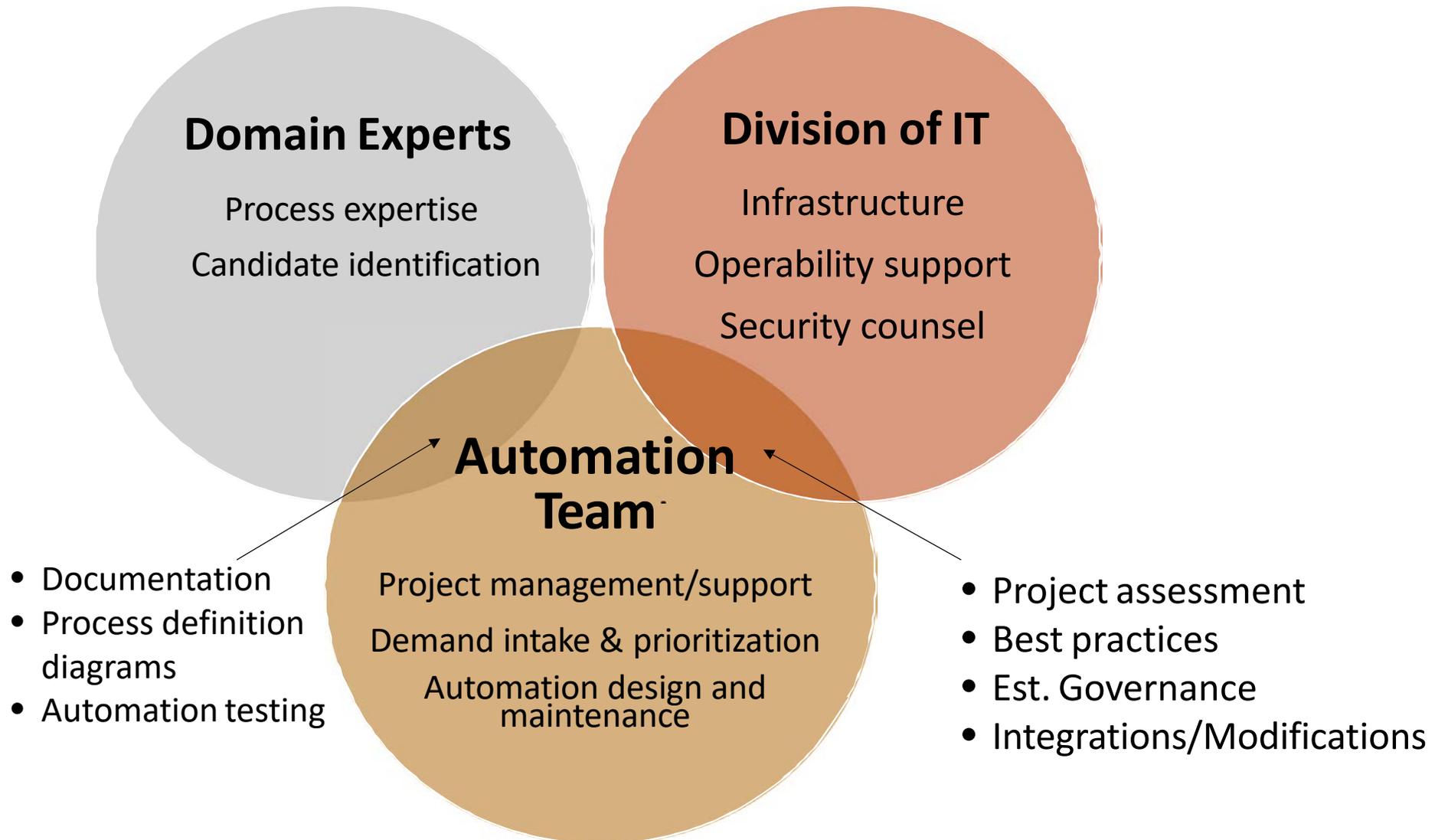
RPA is high priority for most global in-house centers



# What are the Benefits of RPA?



# RPA Enablement Team



# RPA at Virginia Tech

---

A working group was formed fall 2018 to:

- ✓ Gain a better understanding the industry/opportunities
- ✓ Gain a better understanding of the vendors and related technology
- ✓ Build a proof of concept
- ✓ Raise RPA awareness within the senior management area
- ✓ Determine a viable path forward
- ✓ Procure Solution(s)
- ✓ Identify pilot processes for RPA
- ✓ Training
- Draft Governance, Development Standards, Technology Architecture, Security . . . . .

# Identifying Opportunities

---

**S**uitable for Automation  
**N**eed for Business  
**I**nefficiencies Addressed  
**F**requency  
**F**inancial Reward



“Finance executives are looking to smart automation to tighten controls while at the same time enhancing their ability. With tools like [RPA], they are beginning to automate compliance monitoring and remediation activities.”--

<https://www.digitalistmag.com/finance/2019/10/21/effects-of-digital-transformation-on-internal-controls-06201061/>

# Proof of Concept – Picking a Task/Tasks?

Project	Level of Complexity	Other Details	FREQUENCY
Late Fee Waiver Request	Low	Late fee waiver request are received via email. After late fee appeals are reviewed are completed. 1. Email communicate is sent to student. 2.Comment place in Banner 3.Late fee is removed, (if appeal is approved)	Weekly
Fee Assessment Notice	Low	To provide systematic email notifications to students when course/registration changes increase the balance due to the university	Daily during peak
Course Fee Variable	Low	Update SSASECT for a defined list of course fees to facilitate fee assessment; update student level assessment for students enrolled in variable credit hour courses	Daily
Late Payment Emails	Low	Email Student regarding delinquent balances Comment on TGACOMC	Monthly
Collection Activities	Moderate	Moving collection charges between terms, collections agencies, attorney, pre write offs, write offs and posting payments	Daily
Cashier Payments	Moderate	1. 529 invest payments – Interaction with PDFs 2. Flywire Payments – Excel 3. Elm – Interactions with Financial Aid 4. CashNet – Retrieving data from bank the matching and posting items in CashNet	Daily



# RPA at Virginia Tech

---

## UNATTENDED – IN PRODUCTION

1. Daily Cash Receipts Posting
2. Fixed Assets Tag Assignment and Disposal
3. Late Fee Waiver Actions
4. TEM archive 150,000+ PDF Travel Reports (1x)
5. Invoice Process – 3 Way Match
6. Batch Payments Posting

## UNATTENDED - IN DEVELOPMENT

1. Perkins Promissory Notes Archive (1x)
2. External Scholarship Posting

**Unattended RPA** bots operate on a preset schedule, or as triggered by logic in the process flow while **Attended RPA** bots are triggered by user events and operate alongside a human on the same workstation.

# Deloitte leverages RPA for audits

---

RPA and AI technology are helping firms **perform audits more cost effectively**. “Every year we’re able to provide a more efficient audit, and we’re always raising the bar on quality as well,” said Deloitte audit partner Bradley Niedzielski. “If you have administrative tasks that are repetitive in nature, sometimes you might have errors that occur. But if you implement robotics, it helps you to be more efficient and reduces the amount of errors that may occur. Clients are dealing with larger sums of data. **But when it comes to processing time, the timelines aren’t increasing. They’re not being moved out.** There’s still that same reporting period that needs to be met, and in some cases it actually gets moved up. So larger amounts of work need to be processed in a shorter time frame every year.”

SOURCE: <https://www.accountingtoday.com/news/deloitte-leverages-rpa-for-audits-and-financial-statements>, November 27, 2019

# 8 Questions to Ask about Processes before RPA . . . .

---

Is the Process Rules based?

Are there measurable savings?

Does the process have readable inputs?

In the process manual and repetitive?

What type of data does the process work with –structured or unstructured?

Are the process(es) high volume and/or high frequency?

Are the process(es) mature and stable?

**What Process Automations should you avoid?**

# The Power of Automation

---

Are there opportunities to leverage advanced analytics?

Continuous monitoring?

Can you automate components of the audit risk assessment?

...Audit planning?

...Audit fieldwork?

...Work paper documentation?

...Reporting?

# Auditing RPA

---

## *Independent Assessment of the Effectiveness of RPA Design and Operation*

- Framework similar to other IT operations
- Access and Authentication - - Maintain Segregation of Duties
- Change Management Controls
- Implementation and Testing Environments
- Outsourced Services – Development and Hosted Environments
- Monitoring/Identification of Automation Problems/Exception Handling

# RPA Audit Resources

---

<http://isaca-denver.org/Chapter-Resources/EYRPAIRiskSlideDeck.pdf>, pages 39 – 47

<https://www2.deloitte.com/content/dam/Deloitte/us/Documents/finance/us-rfa-auditing-the-risks-of-disruptive-technologies.pdf>, pages 8 – 14

<https://www2.deloitte.com/content/dam/Deloitte/us/Documents/risk/adopting-robotic-process-automation-in-internal-audit.pdf>

# RPA Software Industry Leaders

---

- UiPath
- Microsoft/Power Automate
- Automation Anywhere
- WorkFusion
- NICE
- Kryon
- Hyland
- Pegasystems
- Blue Prism

# QUESTIONS

---

**Melinda J. West, CPA, MBA**  
**Interim University Controller**  
Office of the University Controller (MC0312)  
North End Center, Suite 3300  
300 Turner Street, NW  
Blacksburg, VA 24061

[mwest@vt.edu](mailto:mwest@vt.edu)