

UITS: A Look From Above

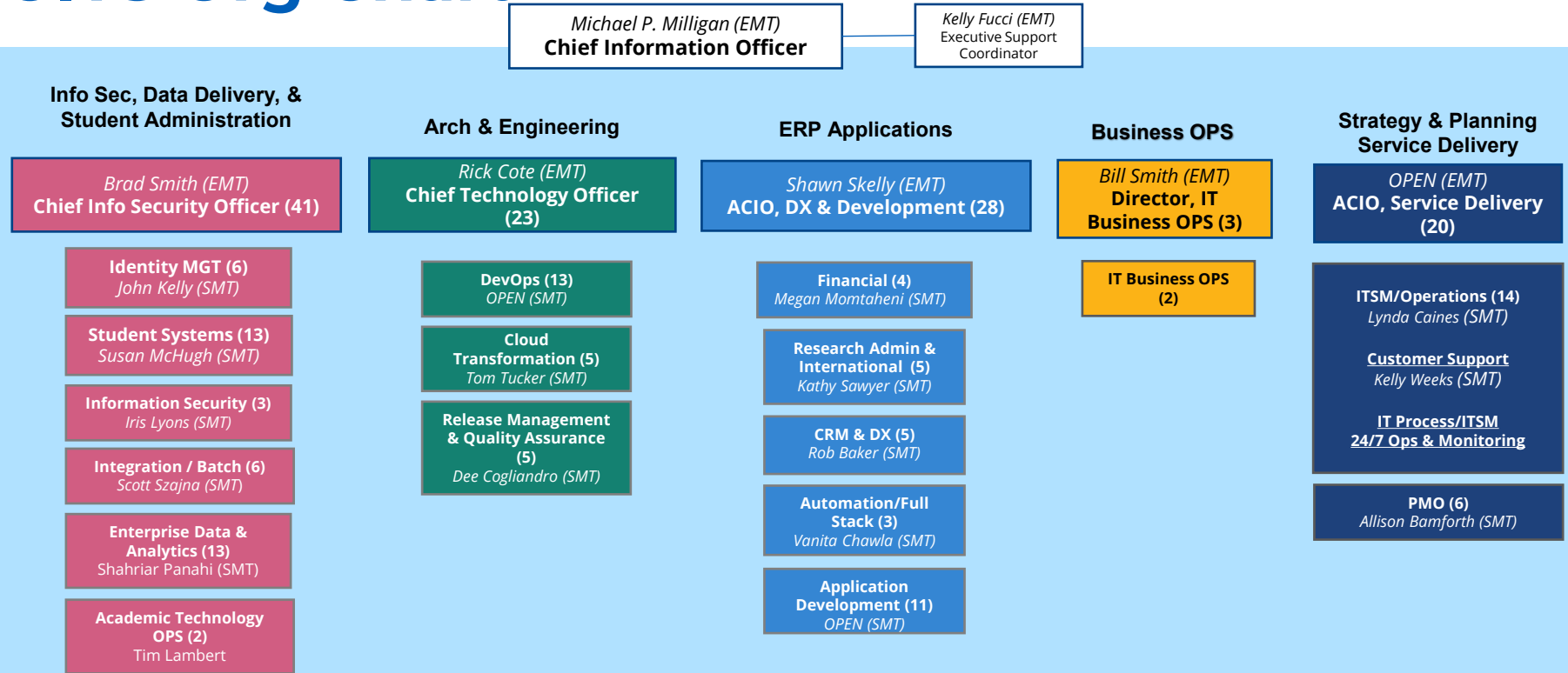
Allison Bamforth, Vanita Chawla, Shawn Skelly



University of Massachusetts

Amherst • Boston • Dartmouth • Lowell • Medical • Law

UITS Org Chart



UITS by the Numbers – Info Sec, Data Delivery, & Student Administration

Identity and Access Management

Implements tools that allow 184,274 active users to securely access 65 applications, services and systems.

1M+ average logins / month

Integration/Batch

353 unique API/DB integrations

1800+ unique file transfers

21,000 average executions every day!

Enterprise Data and Analytics

10 billion rows of curated data

3,000 + end users

Supports 200+ analysts

Student Administration

In the 23-24 Academic year

238,425 applicants processed by Admissions

\$501,276,082 in Fin Aid awarded to 28,458 students

57,551 students actively registered for classes during the registration period

In 2023, Student Financials handled

\$704,242,787.71 in payments, financial aid, and refunds

\$706,594,270.71 in revenue and processed

UITS by the Numbers – Architecture and Engineering

Development Operations

*Support & maintain 140
PRD & Non-PRD DBs*

*Manage 32 load
balancers, 38 firewalls, 3
data centers and 2 LAN
services across 5
locations.*

*Manages and supports
700 virtual servers along
with most cloud
deployments.*

Cloud Transformation

*Average of 100K
inbound messages
weekly*

*Average of 20K
outbound
messages
weekly*

Release Management & QA

*4M system
generated emails
annually in the data
center*

*Software Administration of
30+ third party
Applications*

UITS by the Numbers – Strategy & Planning, Service Delivery and ERP Applications

Project Management Office

Managed 126 projects in FY23 in various project phases, including Amherst Slate Graduate Admissions implementation project

Research Admin & International

Supported campuses in their Administration of \$746.4M in Grants & Contracts in 2023

IT Process/ITSM

66 average Prod changes/monthly in 2023

38 average Prd Off-Hours changes monthly in 2023

Application Development

Averaged 28 Production code changes/month in 2023

Customer Support

Teams responds to an average of 250 support cases per month.

How Does UITS Support Our Partners?

Spotlight: Administration and Finance

- SPARC Dashboard and Advisory Working Group analytics
- System wide analysis of Enrollment, Admissions, & Fin Aid data
- Analytics support for UPST, Treasury, HR, and others
- Work with Treasury on Cyberinsurance and PCI compliance
- Work with Comptroller on annual KPMG financial audit
- Partner with Innovation team on numerous initiatives
 - Project FastLane Team: PMO, Integration/Batch, Finance, Application Development, IdM, Consultants
- Work with UPST on procurement and contract related activities, review for Accessibility Standards
- Support the Access Certification platform & campaigns
- Finance & HR Peoplesoft Development
- Perform tasks on every UMSO roll-on and roll-off



How Does UITS Support Our Partners?

Spotlight: Communications and UMBA

- Manage platform for Massachusetts.edu & umassp.edu including the onboarding, training, & workflow for content editors, Technical Support, Development, and Security
- Manage several technologies, including; Social Media Posting & Listening, Digital Asset Management system, Quality Assurance Software, and Video Marketing platform
- Manage contracts and RFPs for supported technology
- Provide analytical capacity & platforms for campaigns and website engagement data
- Provide back-end support for major marketing campaigns
- Assist with maintaining online Accessibility standards
- Work closely with UMBA on the Administration of software and standardization of equipment

How Does UITS Support Our Partners?

Spotlight: Office of General Counsel and Academic Affairs

- OGC
 - Partner on security incidents across the system
 - Partner on reviewing FERPA training
 - Support of the International Employment System (sunapsis)
 - Replaced Legal Files software with SF Case Management
- Academic Affairs
 - Datalab – Developing systemwide repository of data to enable analytics and inform policy
 - Assist with system office IR reporting and other analytics
 - Maintains the Intercampus Course Exchange (ICx) Content

How Does UITS Support Our Partners?

Spotlight: Internal Audit

- Assist from time to time with BOT content (security and data center move)
- Assist with candidate audit ideas (privacy)
- Assist with IT related knowledge areas when needed
- Moving IA to Case Management and JIRA platforms

How Does UITS Support Our Partners?

Spotlight: Campuses

- Monthly CIO, CISO, and Integration meetings
- Quarterly Student Steering Committee meetings
- Biweekly Bursars, Financial Aid, Enrollment and Registrar meetings
- Monthly Amherst key technology meetings (identity, integration, student data)
- System Monitoring and Incident support for all major applications
- Helping departments answer their own data questions by securely providing training, data, tools, and support to over 200 analysts
- Foster UMass Community of Data practitioners by hosting events & webinars
- Collaborating with over 30 offices across UMass to support their data needs, including shared dashboards for over 3000 users
- Facilitating cross-campus Accessibility working group



We'd love to work with you!

The screenshot shows the 'New Case: UITS Case' form in the IT Service Cloud interface. The form is titled 'New Case: UITS Case' and includes a tab for 'New Case: UITS Case'. The form is divided into two main sections: 'CASE INFORMATION' and 'CASE DESCRIPTION'. The 'CASE INFORMATION' section contains several fields: 'Case Number', 'Case Owner' (Allison Bamforth), 'Status' (New), 'Functional Area' (--None--), 'Type' (Project), 'Functional Area Detail' (--None--), and 'If Other, please specify'. The 'CASE DESCRIPTION' section is currently empty. The form also includes a 'Cancel' button, a 'Save & New' button, and a 'Save' button.

IT Service Cloud Cases

New Case: UITS Case

New Case: UITS Case

* = Required Information

CASE INFORMATION

Case Number

Case Owner Allison Bamforth

* Status New

Functional Area --None--

View all dependencies

* Type Project

Functional Area Detail --None--

View all dependencies

If Other, please specify

Asset Search Assets...

CASE DESCRIPTION

Cancel Save & New Save

<https://umassp.my.salesforce.com/>

Appendix: UITS Fast Facts

Info Sec & Data Delivery & Student Administration

Identity MGT

Implements tools that allow 184,274 active users to securely access 65 applications, services and systems.

1M+ average logins / month

Academic Technology

Provide campuses online learning with Blackboard

Integration / Batch

Integrates cross-system data through APIs, database connections, and file transfers.

353 unique API/DB integrations

1800+ unique file transfers

21,000 average executions every day!

Information Security

Conducts Security training and promotes best practices, policies, and procedures

Responsible for Securing UMPO systems and processes

Enterprise Data & Analytics

Supports massive data lake / warehouse with 10B rows of curated data, 3000+ end users, including campus leadership - 200+ analysts across UMass developing and publishing their own analytics

Student Systems

The Student Administration team supports PeopleSoft Campus Solutions (CS) and third-party software for the Boston, Dartmouth, and Lowell campuses including student enrollment, admissions, academic records, financial aid, billing, faculty management, self-service and more!

In the 23-24 Academic year the team of 13 supported:
57,551 students actively registered for classes during the registration period
\$501,276,082 in Fin Aid awarded to 28,458 students
238,425 applicants processed by Admissions

In 2023 Student Financials handled
\$706,594,270.71 in revenue and processed
\$704,242,787.71 in payments, financial aid, and refunds

Arch & Engineering

Release Management & Quality Assurance

- Manage a team of permanent consultants responsible for the Administration of the PeopleSoft systems
- Orchestrates work between multiple technical areas in order to complete upgrades, installations, etc.,
- Responsible for Software Administration of 30+ third party Applications
- Conducts Performance testing prior to start of classes and for other critical projects
- Develops Test Scripts to automate Validation post-DataBase refreshes
- 4M system generated emails annually in the data center

DevOps

Database - Support & maintain 140 PRD & Non-PRD DBs

Network - Manage 32 load balancers, 38 firewalls, 3 data centers and 2 LAN services across 5 locations.

DevOps - Manages and supports 700 virtual servers along with most cloud deployments. Focus on automating daily tasks to expedite the service delivery process.

Cloud Transformation

Supports email and Active Directory Services for all of UMSO.

Actively developing the Cloud Transformation program to modernize our applications portfolio.

Supports users for Virtual Desktops & Applications across the University

In 2023;
Average of 100K inbound messages weekly
Average of 20K outbound messages weekly



Appendix: UITS Fast Facts

ERP Applications

Research Admin & International

Provides module, integration, and interface support to; Grants, Contracts, Billing, AR, Project Costing, and Effort Certification. Supported campuses in their Administration of \$746.4M in Grants & Contracts in 2023.

Provides application support for Sunapsis, Study Abroad and Travel Registry applications.

Application Development

Works with University partners to develop and support ERP applications to expand the capabilities of UMass systems.

Averaged 28 Production code changes/month in 2023

CRM & DX

Collaborates with teams to understand how our managed portfolio of communications and collaboration Enterprise platforms such as Salesforce, Slack, and Dropbox, can facilitate teamwork, improve our digital experience, meet accessibility standards, and enhance customer service.

Financial

Supports all 5 campuses and the President's Office on PeopleSoft Finance modules as well as all internal and external integrations (i.e., BuyWays, Concur, Banks, SA, HR, Advancement, etc.)

Automation/Full Stack

Focused on developing Automation as a service, increasing our automation capabilities and charting the GenAI future.

Business OPS

IT Business OPS

Works closely with the Budget Office and UPST to understand University business practices so we can educate and support UITS management. Plays an active role and partner with UITS managers to help them effectively manage their budget, renewals and spend.

Strategy & Planning Service Delivery

PMO

Provides guidance and expertise to help partners plan and execute successful projects. Managed 126 projects in FY23 in various project phases, including Amherst Slate Graduate implementation

ITSM/Operations

Customer Support

First line of support for UMSO technical needs. Administers access & training for productivity applications & web conferencing. Teams responds to an average of 250 support cases per month.

IT Process/ITSM

*Provides strategic leadership & oversight of service delivery and operations. Implements practices to improve incident, request, and change management. 66 average Prd changes/monthly in 2023
38 average Prd Off-Hours changes monthly in 2023*

24/7 Ops & Monitoring

Provides 24x7 monitoring and management for service disruptions of Production batch, websites, applications and systems, remediating and escalating as needed

Questions



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UITS Automation Service

A Strategic Initiative



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Mission: Service Delivery Excellence and Growth Mindset

Goal: Develop Automation as a service, increase automation capabilities and chart the GenAI future



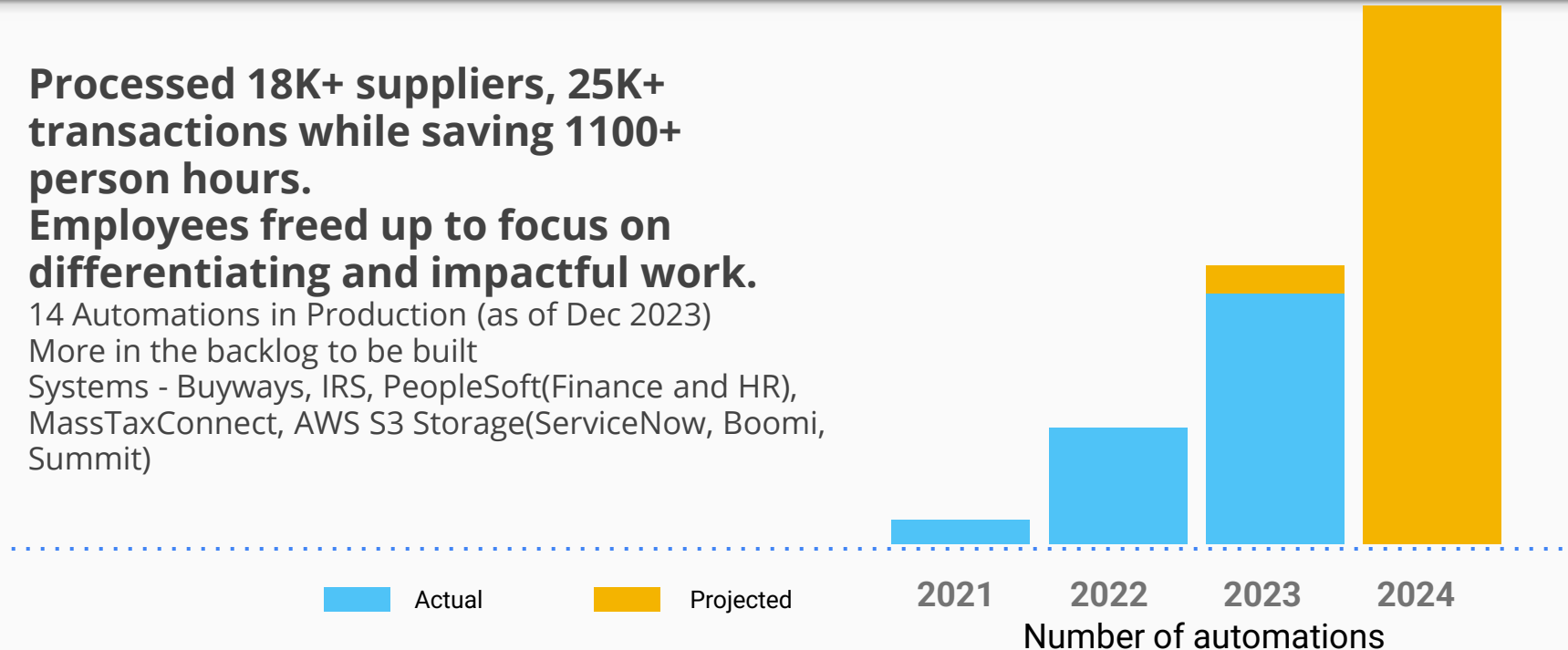
The problem


25K+ transactions
done manually and
1100+ person hours
spent

- Manual, time consuming and very human error prone processes to enter or process data across websites and systems.
- Employees spending time on repetitive and non-differentiating work

The solution - Process Automation leveraging UiPath Platform

- **Processed 18K+ suppliers, 25K+ transactions while saving 1100+ person hours.**
- **Employees freed up to focus on differentiating and impactful work.**
- 14 Automations in Production (as of Dec 2023)
- More in the backlog to be built
- Systems - Buyways, IRS, PeopleSoft(Finance and HR), MassTaxConnect, AWS S3 Storage(ServiceNow, Boomi, Summit)

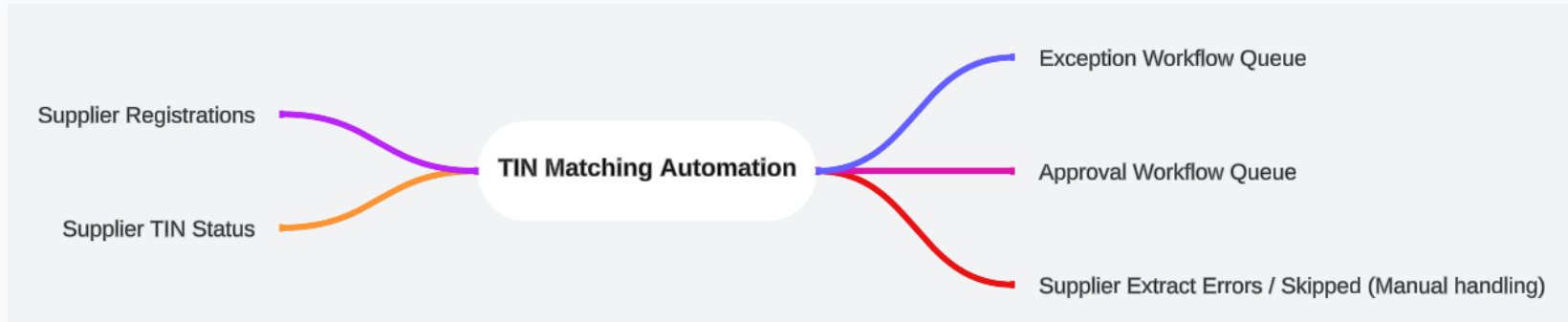




RPA Use Case Spotlight: TIN Matching automation

- Our First RPA automation
- Critical part of Supplier registration in Buyways
- Complex use case
- Many lessons learnt
- Most impactful
- TIN - Tax Identification Number for suppliers/vendors
- Systems - Buyways and IRS
- Challenges - Production systems only, which can change without notice
- No more IRS login lockouts with the automation and the Robot
- Handles Approval and Exception workflow

TIN Matching Automation Overview



Milestones and Impact

Our Automation Journey - Go-lives Fiscal Year/Quarter (actual and projected)



The team

Delivers impact with intelligent automation and AI solutions

Core Team

Shawn Skelly

Associate CIO -
Development and Digital
Transformation

Vanita Chawla

Manager Automation and
Senior Solution architect

Nick Sardonini

Full Stack Developer

Ricardo Santiago

Associate Full Stack
Developer

Extended Team Contributors

Zoey Tran

Business Analyst

James Pearson

Business Analyst

Donald Darwin (DJ)

Business Analyst Intern

Matt Kozlowski

Cloud Architect

Sean M

FE development Intern

Mike Costa

Full Stack Developer

Lydonia

Managed Services/Staff
Aug

Subject Matter Expert Team

Marius Farcas

UITs

Anne Zuev

UPST

Erika O'Mailey/Jeff Gull

A&F EST

Kathleen O'Neil/Randi Fay

A&F Treasury

James Pearson

UITs

[Play Video](#)





What's an Automation? What is RPA?

Automation is the use of technology to perform tasks with reduced human assistance. It may sync data or perform other actions.

RPA stands for Robotic Process automation.

- We leverage the UiPath RPA platform.

A woman with glasses is shown in profile, looking down at a smartphone she is holding. The background is dark with blue bokeh lights. A futuristic, glowing digital interface is overlaid on the left side of the image, showing various icons and data points.

An Automation Solution may include

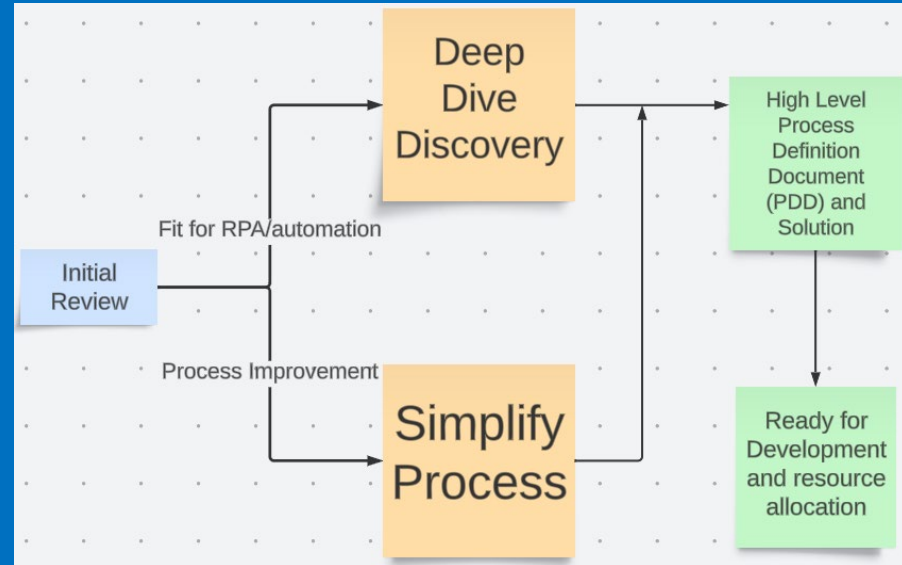
- UiPath RPA
- Salesforce
- Slack
- PeopleSoft
- Boomi integration
- Buyways
- AI Technologies
- Other tools and platforms as they fit

What's a good RPA idea ?



- Good RPA idea / project:
 - Involves UI automation
 - Repetitive
 - Time consuming
 - Low error rate
 - Low manual intervention required
 - Existence of mirrored Non-production and Production stable systems

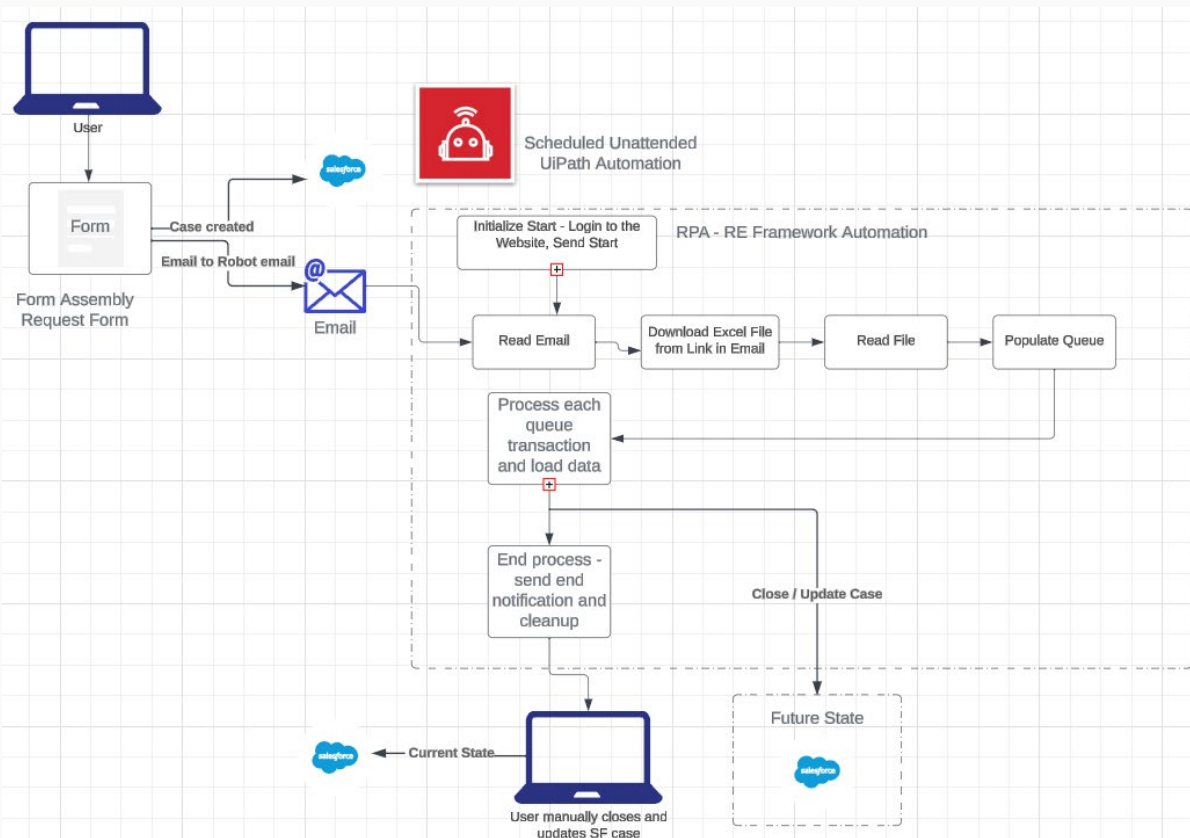
Automation Review Process



What drives automation success?



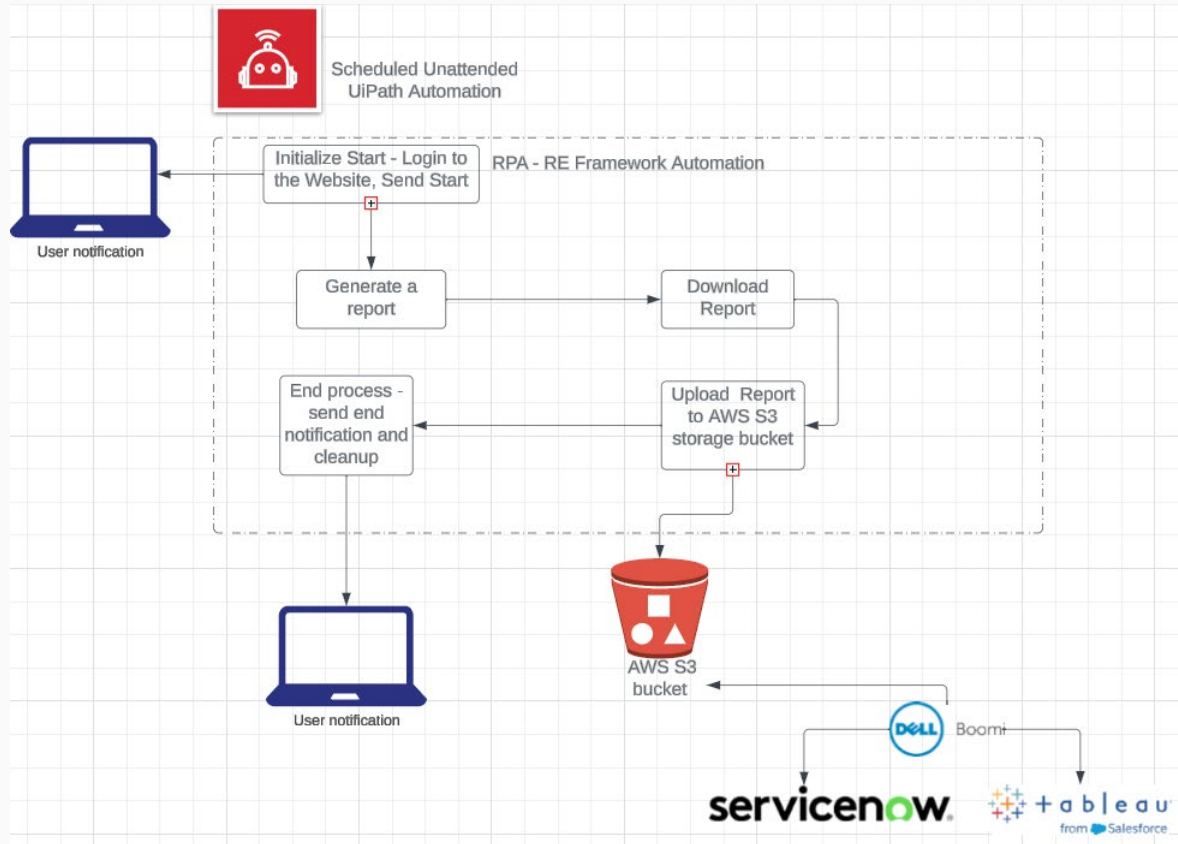
Current Automation Patterns



Load Excel data into a Website



Current Automation Patterns



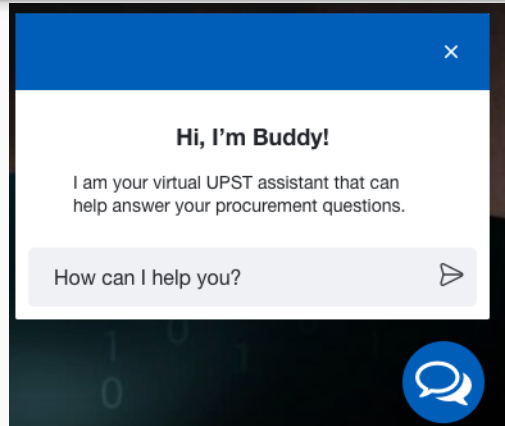
Extract Website data and upload to AWS S3 bucket



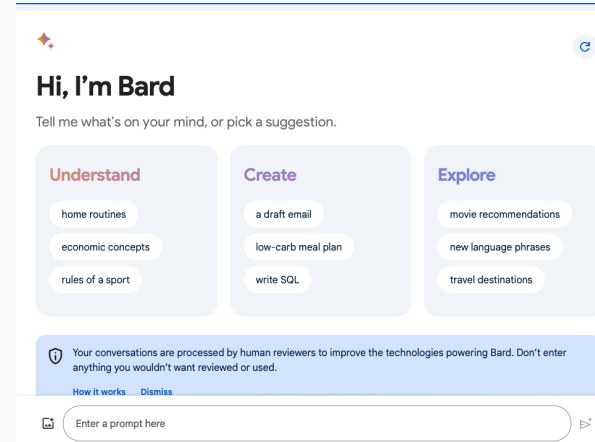
AI Introduction and Vision

Automation and AI is taking over the world!

AI is still evolving, but at a fast pace.



AI chatbot Ivy.ai



What is AI (Artificial Intelligence)?

Artificial intelligence is **the science of making machines that can think like humans**. It can do things that are considered "smart."

AI technology can process large amounts of data in ways, unlike humans.

The goal for AI is to be able to do things such as recognize patterns, make decisions, and judge like humans.

Responsible AI, Explainable AI

Known Issues: Bias and hallucinations.

Responsible AI (RAI): a framework with principles, policies, tools, and processes to ensure that AI systems are developed and operated in the service of good for individuals and society while still achieving transformative business impact.

<https://mitsloan.mit.edu/ideas-made-to-matter/new-report-documents-business-benefits-responsible-ai>

Explainable AI (XAI): Generates trust, transparency and accountability in AI.

Example: Explainable AI is a decision tree model used for credit scoring. It provides a clear, step-by-step explanation of how it assigns credit scores based on income and credit history.

<https://www.analyticsvidhya.com/blog/2021/01/explain-how-your-model-works-using-explainable-ai/>

Bias in facial recognition models:

Dr Joy Buolamwini (Poet of code) - AI, Ain't I a woman

<https://www.blackhistory.mit.edu/archive/joy-buolamwini-ai-aint-i-woman-2018>

Innovation Sprints

Goal: Embrace Innovation, Growth, Motivation, Inspiration, and Engagement

Logistics:

- 3 times a year
- Open to anyone in UITS to work on individually or collaborate with others.
- A week of the 2 week sprint dedicated to innovation and learning
- Team member(s) choice of topic/project.
- Quick demo or presentation after the sprint, of learnings or next steps

Outcomes:

- Accessibility Design System migration to GitHub
- Alexa Skill learning
- AI topics learning
- UiPath RPA topics learning
- Various proof of concepts
- Deepen various development skills

AI for Good! a poem

Automation is here to stay,
AI is here to shake it up,
To make us think and reach within,
To connect with who we are,
To be more creative,
To be a better human,
To be more intentional!
These are just the tools,
To help where we need them,
And to use them wisely!

- Vanita Chawla



chatGPT



LaMDA

PaLM



BLOOM

ANTHROPIC Claude

LLaMA



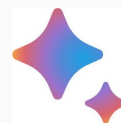
Automation and AI together

Automation is the next path to
deliver on whatever AI conceives

Anything AI can do, AI and
Automation together can do better!



chatGPT



Bard

LaMDA

PaLM

BLOOM



ANTHROPIC Claude

LLaMA



Automation Future Steps

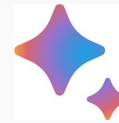
- Adopt new features and functionality in UiPath
 - Dropbox
 - Twilio
 - Other features
- Features in other platforms and how they fit together and can help us automate
- Establish cross functional Governance
- We want your requests
- We as a governance will figure out how to help and find a technical solution



Boomi



chatGPT



Bard

LaMDA

PaLM

BLOOM



ANTHROPIC

Claude

LLaMA



Please contact

UITS Automation Team

*Automation Review
Request Form*

https://umassp.tfaforms.net/automation_review_request

Questions



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