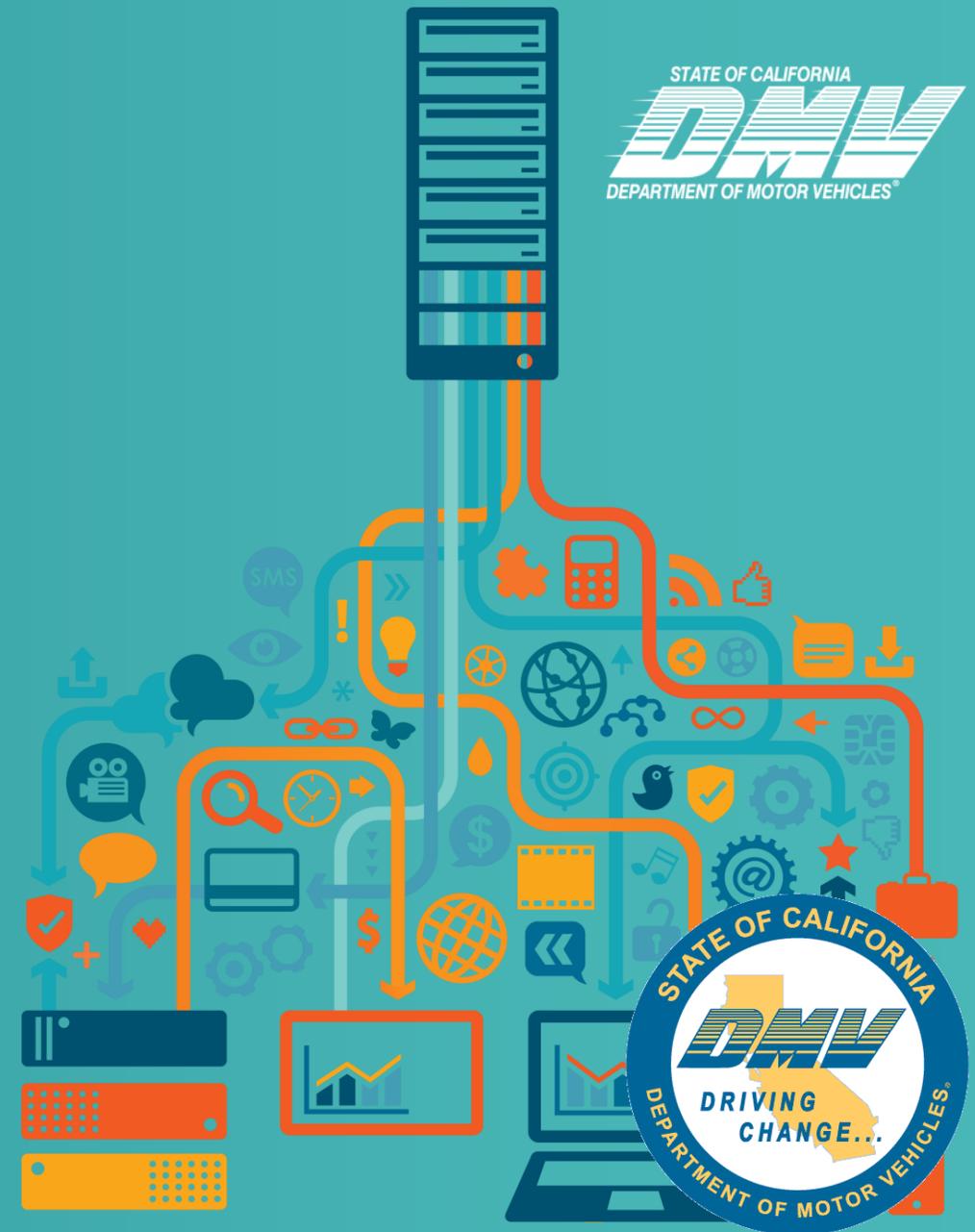


# State of California RPA Discussion Forum

Sharing our RPA journey

DMV, CDPH, OSHPD, FI\$Cal, Energy, CDT

12/20/2019



# Topics

## Introductions

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- 5 min

## Discuss where we are in our journeys

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- 20 min – CDPH, OSHPD, FI\$Cal, Energy, CDT

## Deep dive into DMV's RPA journey

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- 30 min – Use cases, setup, delivery model

## Discuss future of the discussion forum

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- 15 – Meeting topics, agenda

## Objectives of the discussion forum :

To share ideas, experiences and our journey to improve operations and gain efficiencies by implementing robotic process automation



# DMV's Digital Transformation Initiative Explained

# Where we are today...

## COE Setup



- "Pioneer" Team Setup
- Identify Pioneer Candidates
- Timeline for Pioneer Implementation
- Roles, Standards and best practices
- Process automation backlog
- Delivery Approach (Testing, Training)
- Run an awareness campaign
- Identify "Sustainable/Maintenance" DMV team members

## Procurement Activities



- Simpligov product and services
- UiPath product
- UiPath services

## Milestone Updates



- Identify pioneer candidates
- Document Process Definitions
- Environment Setup
- Reusable components/framework
- Integration components (AD, attachments, epayments, UiPath-Simpligov)

## Use cases we are considering

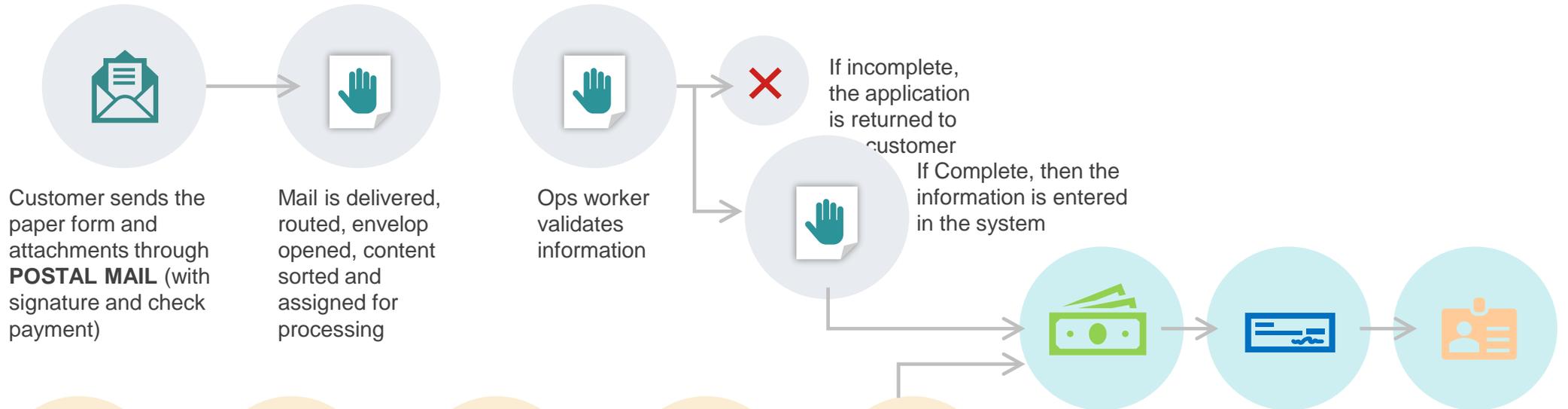
- Creating a web presence of a paper form without IT involvement
- Process file based (CJIS Livescan) data into legacy application
- QA of paper form images for signatures and data entry discrepancies
- Reducing manual HR use cases (Absence/Overtime Report)
- Process incoming paper forms using AI and RPA
- Reduce call/chat time by consolidating customer information from multiple systems during customer support calls

# Technical areas we are tackling

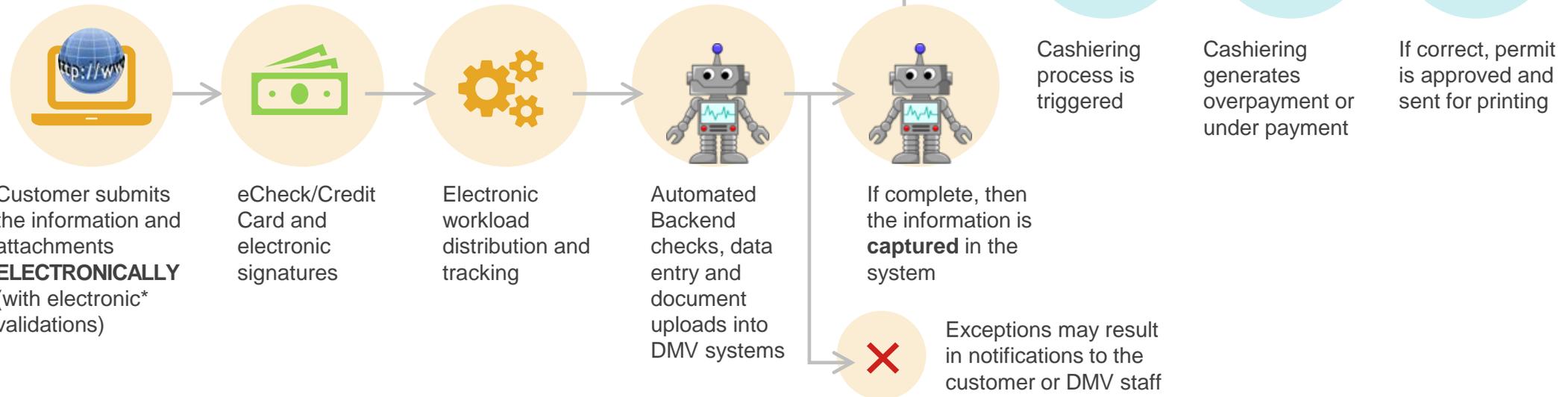
- Password management of bot accounts
- AI Integration for paper based processing
- Building real time services layer using bot-based automation
- Optimizing bot allocation to processes

# Transforming a manual process with Automation

## Current Manual Process



## New Automated Process (Self Service)



\*Real time or email based



# Where do we start? How do we engage?

# Good Candidates vs. Poor Candidates



## Good Candidate

- Repeatable simple steps
- High occurrence
- Digital inputs
- To and from well mapped
- Strong ROI



## Poor Candidate

- Complexity and nuance
- Infrequent usage
- Process anomalies
- Low ROI

# How Project Candidates Will Be Evaluated

## Committing to the Idea

- Base ROI
  - Number of items
  - Time to perform
  - Resource cost
- Process steps
- Process simplicity
- Digital data
- End user support

## Committing to Implementing it

### All items on left, plus:

- Validation of the data sources
- Access to processes using robots
- Ability to setup a test environment
- Data security and privacy management

# Detailed ROI Modeling Example, part 1

## Factors, units and costs

### Operational Effort

|  |  |
|--|--|
| Unit: Total # of hours used (annually)                                       | 4,972 hours                                |
| Cost: Hourly Rate for the Staff engaged in the current process               | \$21.50                                    |
| Unit: % Yield (effective effort reduction estimated with bot implementation) | 70 %                                       |
| Savings in materials (paper, storage) and IT (desktop support)               | TBD  |
| Customer interaction hours (rejections, status inquiries, delay grievances)  | 218 hrs/year (based on 30% rejection rate) |
| Expected reduction in customer interaction hours                             | 633 hrs/year (based on 70% success rate)   |
| Automation project lifespan (years)  | 2 years                                    |
| Exception Processing Burden per unit (Business and Application Exceptions)   | 9 minutes                                  |

### Technology

|   |           |
|---|-----------|
| Unit: % of available bot minutes allocated to the process over a year (usage tracked to a minute) | 7%        |
| Cost: Licensing cost (include Bots, Orchestrator and Studio)                                      | \$139,762 |
| Cost of the infrastructure to host and execute the bots   | TBD       |

### Baseline Effort

|  |   |
|--|---|
| Unit: Onetime setup effort in hours (hiring, management, integration, standards)     | 150 hours   |
| Cost: Hourly Rate (blended) for the COE team supporting bot implementation           | Portfolio Mgr \$43.57<br>Technology Mgr (vendor) \$150.00<br>Advisor \$xxx.xx |
| Unit: # of automation projects slated to be developed concurrently (over 24 months)  | TBD   |
| Unit: # of automation projects slated to be maintained concurrently (over 24 months) | TBD   |

**+**  
 (Total staff operational hours per unit) \*  
 (number of units) \* (% effort  
 reduction/adoption with automation) \*  
 (blended hourly rate of the operational staff) \*  
 (automation span in years)

**-**  
 (IT assets annual cost to  
 run automation) \*  
 (automation span in  
 years)

**+**  
 (Total customer interaction hours in years) \*  
 (% call reduction with automation)  
 \* (blended hourly rate of the customer  
 support staff) \* (automation span in years)

**-**  
 (Setup effort) \* (Blended rate of  
 setup staff)  
 + (Ongoing COE mgmt. effort  
 by year)  
 \* (Blended rate of  
 management/COE staff)  
 \* (# of COE years for ROI  
 calculation)

**-**  
 (Total exceptions) \* (average exception processing effort) \* (%  
 effort increase on exception processing) \* (blended hourly rate of the  
 operational staff) \* (automation span in years) - Unit Cost without  
 automation

**+** Efficiency gains (hours or \$\$)

**-** Cost of gaining efficiencies

# Detailed ROI Modeling Example, part 2

## Factors, units and costs

### Project Specific Effort (Implementation)

|   |   |
|---|---|
| Unit: Bot development hours   | 180 hours (100 dev+40 process/requirements analysis, 20 testing, 20 deployment)                             |
| Unit: management time allocated to specific process                                   | 54 hours/week   |
| Cost: Hourly Rate (blended) for the automation team supporting process implementation | Portfolio mgr \$43.57<br>Integration Mgr \$51.63<br>Technology Mgr (vendor) \$150.00<br>Advisor<br>\$xxx.xx |

### Shared Support Effort

Process Automation support hours (ongoing maintenance of as is – no enhancements) 3-4 hours/week

**-** (Projected Dev/Test effort) \* (Blended rate of Dev/test Staff)

**-** (Projected defect fix effort - weekly) \* (Blended rate of Dev/test Staff – weekly) \* (# of work weeks in a year)

**+** (Ongoing COE mgmt. effort by year) \* (project duration in fraction of the year) \* (bot allocation %) \* (blended COE mgmt. rate)

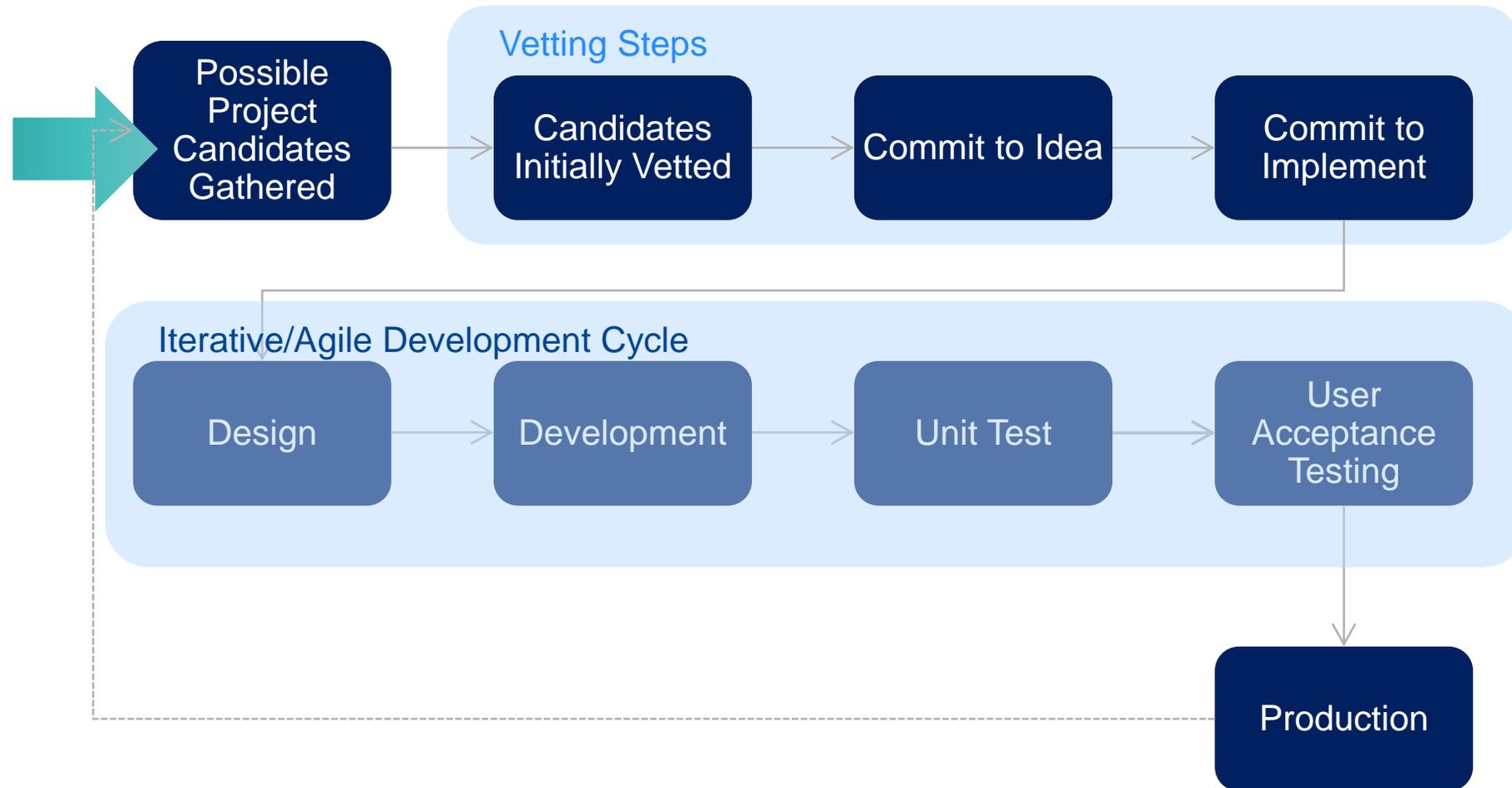
### Other Factors

|   |    |                   |
|---|----|-------------------|
| Incentive to participate  |    |                   |
| Gratuity for participation  |    |                   |
| Managing the savings (what to release to the common pool and what to keep for new projects) |    |                   |
| Grievances  | \$ | <b>+</b> <b>-</b> |
| Fines/Lawsuits  | \$ | <b>+</b>          |
| Backlog impact to the customers   |    |                   |
| Communication on the fund reallocation to stakeholders                                      |    |                   |

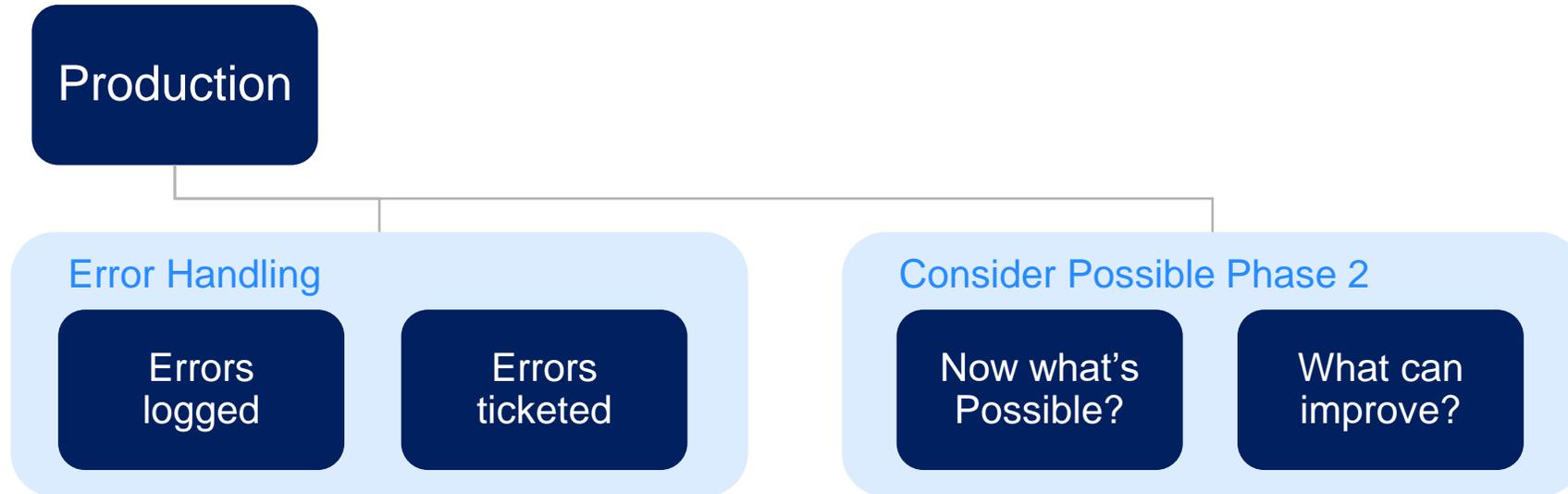
**+** Efficiency gains (hours or \$\$)

**-** Cost of gaining efficiencies

# The Lifecycle of a Bot



# Once in Production...



- Bugs identified and resolved
- Minor enhancements identified and vetted for “maintenance” release
- New Features identified and vetted for next “major” release



# Operating Model?

# Strategic

## Digital Transformation Office

AG

### Portfolio/Implementation Manager

Responsible for end to end execution of all transformation projects. Accountable for project selection, team setup and schedule

### Legal Counsel

### Cloud/Security Architect

Tackles new products and architectures around soft containment, micro services, service bus and hybrid (cloud/on prem) models. Tackles all cloud and SaaS products and technologies in the roadmap

### Integration Architect

# Tactical

#### Transformation Project 1

|                      |                         |
|----------------------|-------------------------|
| Process Manager      | Bot Mgr/Biz Owner       |
| Automation Developer | Additional BU1 Tester   |
| Forms Developer      | Additional BU2 Tester   |
| ISD Online Pmnt Arch | ISD Online Pmnt Analyst |
| ISD Doc Upload Arch  | ISD Doc Upload Analyst  |

#### Transformation Project 2

|                      |                       |
|----------------------|-----------------------|
| Process Manager      | Bot Mgr/Biz Owner     |
| Automation Developer | Additional BU3 Tester |
| Forms Developer      | Additional BU3 Tester |

#### Transformation Project 3

|                      |                       |
|----------------------|-----------------------|
| Process Manager      | Bot Mgr/Biz Owner     |
| Automation Developer | Additional BU4 Tester |
| Forms Developer      | Additional BU2 Tester |

Paperless Forms ?

Chrome Tablets ?

Identity Management Redesign ?

Partner Marketplace ?

# Operations

### Technology/COE Manager

Tech Manager Responsible for setup and ongoing operations of the digital transformation COE. Also supports the compliance manager

|                          |                               |                              |
|--------------------------|-------------------------------|------------------------------|
| ISD Server Administrator | ISD Desktop Admin             | Compliance Manager           |
| Cloud Admin              | Tool Administrator/Supervisor | Manorak Man, PK, Larry Rudee |

Compliance manager is responsible for validating the process automation implementation for compliance to COE established standards and DMV security policies

# DIGITAL TRANSFORMATION STARTUP PORTFOLIO AND TEAM LAYOUT

Full time State project resource

Significantly Shared State Resource

Shared State Resource

Full time Vendor Resource

# Operations

## Operating Model Layers

|             |  |
|-------------|--|
| Strategic   | Identify use cases, agree on prioritization, roadmap for future, report out to leadership and executive team   |
| Tactical    | Bot outcome, benefit tracking and day to day management of bots, change management, identifying bot processes, reviewing for compliance, optimizing and prioritizing use cases   |
| Operational | Development, maintenance and operations (Build and Run teams together), Infrastructure support. Continuous monitoring of Bots, triaging runtime issues and fixing/ fine-tuning/ optimizing. Process compliance, managing security/compliance |

# Operations (Continued)

## Security

|                       |   |
|-----------------------|---|
| Access                | Provisioning, deprovisioning rules, set up roles based access control (RBAC)  |
| Segregation of duties | Human in the loop vs bot builder<br>BOT manager vs BOT Auditor<br>BOT performing 2 tasks previous completed by two different profiles   |
| Password Management   | Leverage an application-to-application password management tool (Ex Beyond Trust) to maintain ID and password expiry rules/provisioning |

# Primary Implementation Actors

## Bot Manager/ Product Owner

- Provides resources, approvals, and validates process efficiency and other business benefits
- Defines the "New World" for their staff
- Owns day-to-day operations and business decisions; plans and manages workload distribution in the new model
- Manages post implementation automation (fixes/enhancements) pipeline

## Process and Implementation Manager

- Acts as the implementation manager, process champion, cutover planner
- Defines, manages, and documents process changes
- Validates process changes and assists Bot Manager defining the "New World"

## Product Tester

- Staff that possess in-depth knowledge about the process/product
- Participates in process and system integration validation
- Identifies and logs system errors/bugs during testing validation

## Technology Integration Manager

- Facilitates integration process, provides infrastructure for testing, stage and production environments
- Coordinates efforts to ensure system compliance on data security policies and standards

## Compliance Manager

- Responsible for validating the process automation implementation for compliance to COE established standards and DMV security policies
- Coordinates with Portfolio Manager and Audits to address potential risks and concerns

## COE/Technology Manager

- Responsible for set up and ongoing operations of the digital transformation COE.
- Assists and supports the Compliance Manager in aspects of system and data security measures and controls

## Digital Transformation Portfolio Manager

- Responsible for end-to-end execution of all digital transformation projects.
- Responsible for project selection, team set up, and project planning and scheduling

# Responsibility matrix for Intelligent Automation

| Activity                                      | COE   | ISD   | Business Owner  | Process Owner   | Vendor  |
|---|---|---|---|---|---|
| <b>Business Requirement</b>                   | <ul style="list-style-type: none"> <li>Responsible for scope and direction of the overall automation</li> <li>Responsible design standards, practices and principles</li> </ul>   | Informed  | <ul style="list-style-type: none"> <li>Maintain the list of processes that have automation potential</li> <li>Perform the assessment to prioritize the process that can be automated</li> <li>Participate in discovery sessions</li> <li>Provides Subject Matter Expertise (SME)</li> </ul> | <ul style="list-style-type: none"> <li>Participate in the discovery sessions</li> <li>Sign-off on the process that will be automated</li> </ul>   | <ul style="list-style-type: none"> <li>Participate in discovery sessions</li> <li>Develop Process Definition Document (PDD)</li> </ul>                          |
| <b>Program Setup and Governance</b>           | <ul style="list-style-type: none"> <li>Establish governance</li> <li>Evaluate ROI</li> <li>Manage resource allocation</li> </ul>  | Informed  | <ul style="list-style-type: none"> <li>Informed</li> </ul>  | <ul style="list-style-type: none"> <li>Informed</li> </ul>  | <ul style="list-style-type: none"> <li>Informed</li> </ul>  |
| <b>Platform Administration and Operations</b> | <ul style="list-style-type: none"> <li>Maintains the solution</li> <li>Responds to incidents. Triage and prioritizes</li> <li>Validates the implementation for process, legal and security compliance</li> <li>Managed bot allocation and schedule</li> </ul> | <ul style="list-style-type: none"> <li>Deploys Robots to dev, test and production environments</li> <li>Provide access to the systems that are part of automation</li> <li>Administers users and access to dev, test production environments.</li> <li>Performs periodic review of the platform for security and performance</li> </ul> | <ul style="list-style-type: none"> <li>Manages exception processing workload</li> <li>Originates incidents</li> <li>Initiates business continuity activities during bot downtime/issues</li> </ul>  | Act as the project manager/coordinator  | Provides guidance on platform configuration   |
| <b>Robot Development</b>                      | Consulted   | <ul style="list-style-type: none"> <li>Provides access to vendor</li> <li>Shadows vendor during development</li> </ul>  | <ul style="list-style-type: none"> <li>Acts as the Product Owner</li> <li>Manages backlog of processes</li> <li>Performs testing</li> </ul>   | Acts as the project manager/coordinator   | Develops new Robots   |
| <b>Process Changes</b>                        | Consulted   | Consulted   | <ul style="list-style-type: none"> <li>Oversees process changes</li> <li>Plans and executes the staff role revisions</li> <li>Defines workload redistribution</li> </ul>  | <ul style="list-style-type: none"> <li>Defines and manages the change</li> <li>Documents the change</li> <li>Validates process changes</li> </ul> | Recommends process changes  |
| <b>Training</b>                               | Consulted   | Supplies candidate students   | Supplies candidate students   | Supplies candidate students   | Provides training on the tool and knowledge transfer  |
| <b>Security</b>                               | Consulted   | <ul style="list-style-type: none"> <li>Enforces/validates security policies around data and access</li> <li>Implements secure coding practices</li> </ul>   | Provides input  | Provides input  | Implements platform security, secure credential storage and access management   |
| <b>Contract Management</b>                    | Measures if the goals (ROI) of the automation are achieved  | Owns the contract and software subscription   | Owns day to day use and SLA monitoring  | Informed  | Accountable   |
| <b>Configuration Management</b>               | Informed  | Approves production deployment of configuration updates   | Informed  | Informed  | <ul style="list-style-type: none"> <li>Provides development services for major updates.</li> <li>Owns production deployment of configuration updates</li> </ul> |
| <b>Upgrade Management</b>                     | Informed  | Implements platform upgrades  | <ul style="list-style-type: none"> <li>Tests changes and upgrades</li> <li>Understands new product features</li> </ul>  | Informed. Understand new product features   | Provides upgrade guidance.  |



# Appendix



# Piloting Intelligent Automation at DMV

## First steps

### Use case selection framework

- Important to select high volume, high frequency, repeatable, predictable, standardized tasks
- First few Bots should automate simple tasks involving not more than 1 or 2 platforms to get quick value
- Bots touching app platforms should not undergo major enhancements, facelift, user interface changes
- Processes should not have too many decision points
- Make sure data is structured (or may need AI to extract data from unstructured/images)
- High adoption rate/motivation to use automation (large backlogs, employee fatigue, customer complaints etc..)

### Key Risks

- Applying RPA to process that is not stable, may change often or have too many human judgment calls
- Complex use cases
- Touching app platforms undergoing upgrade or major functionality enhancements.
- Automating a suboptimal process.
- RPA cascades technical debts within an application and does not fix it

# How does paper to web transformation work?

