



PegaWorld*iN*spire

# Redefining the “A” in AI: AI and the Autonomous Enterprise

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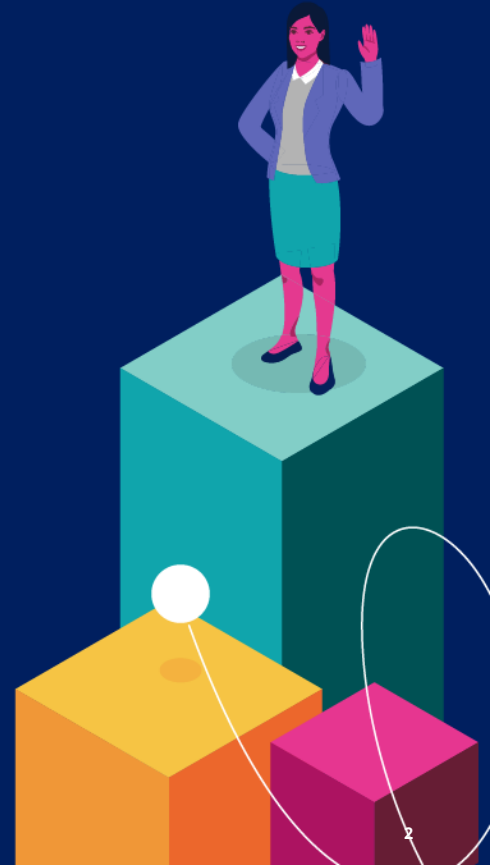














Image: Oregon Department of Transport



Image: ArthurHidden on Freepik

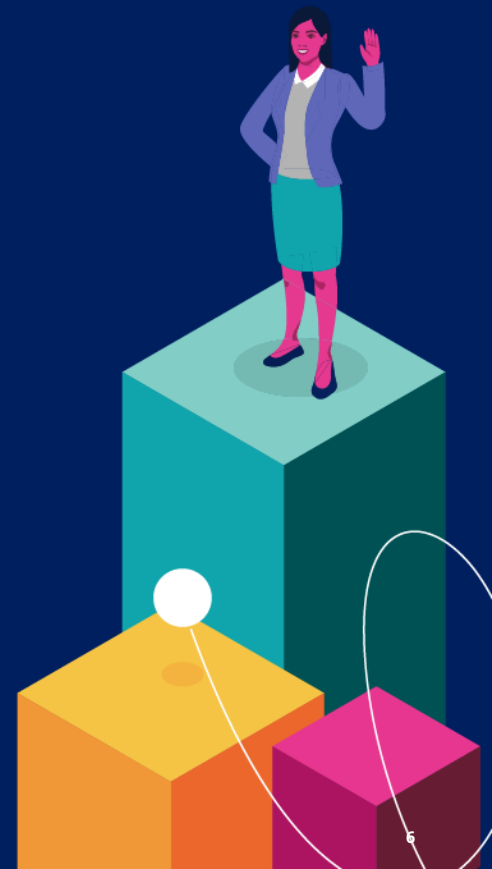
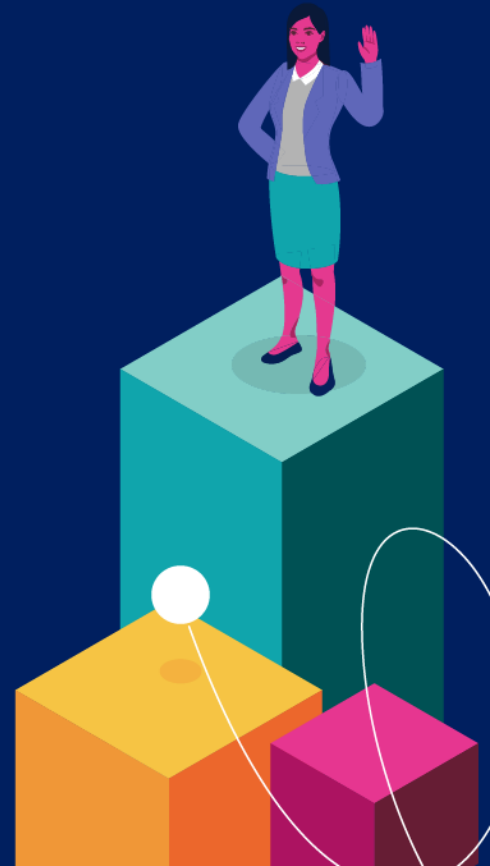
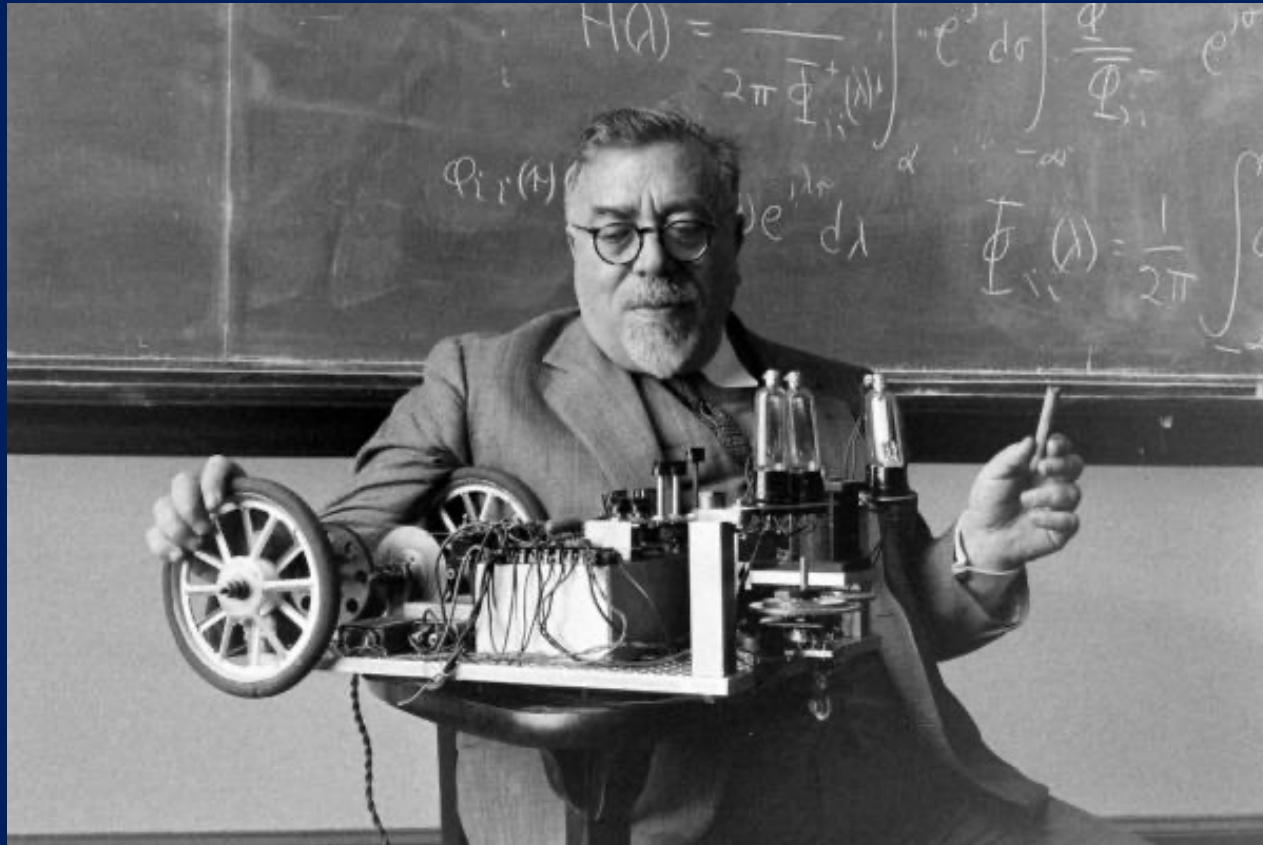






Image: Pohlen et al, CVPR'17

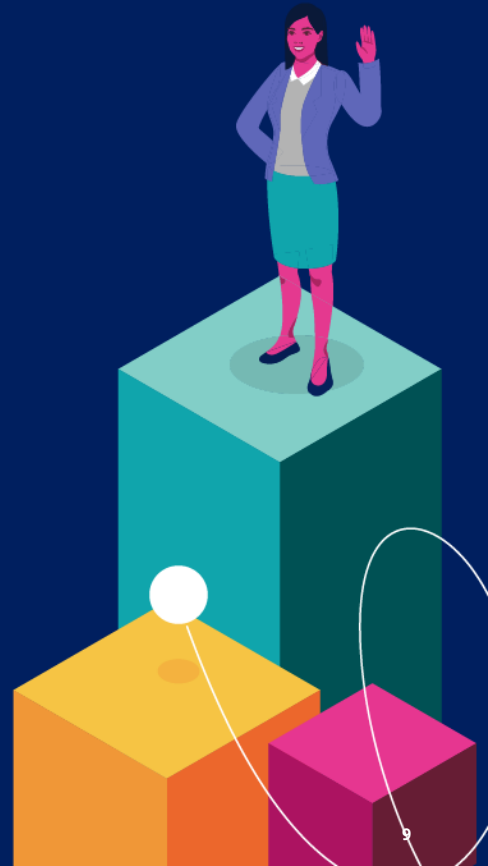


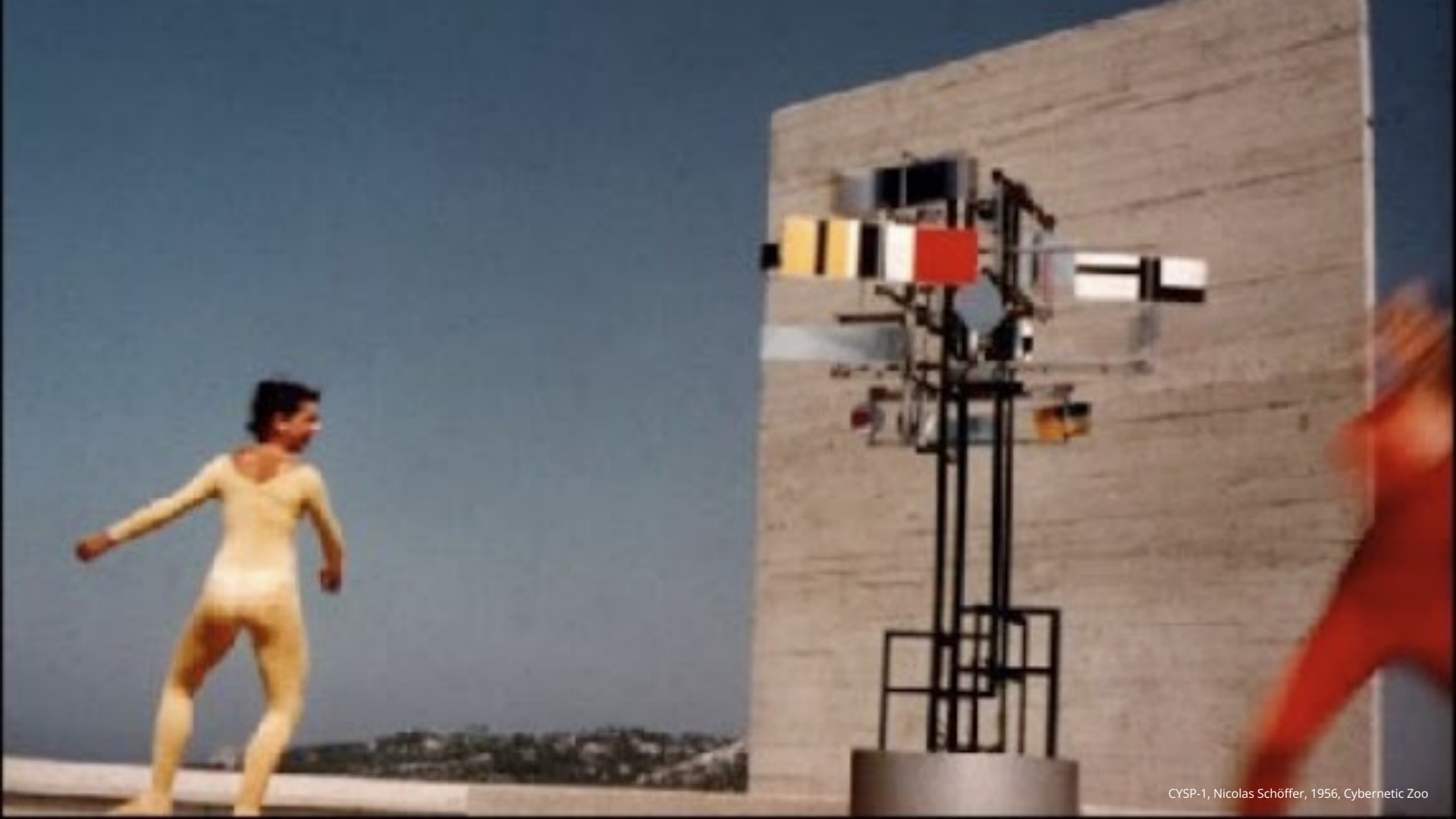






CYSP-1, Nicolas Schöffer, 1956, Cybernetic Zoo

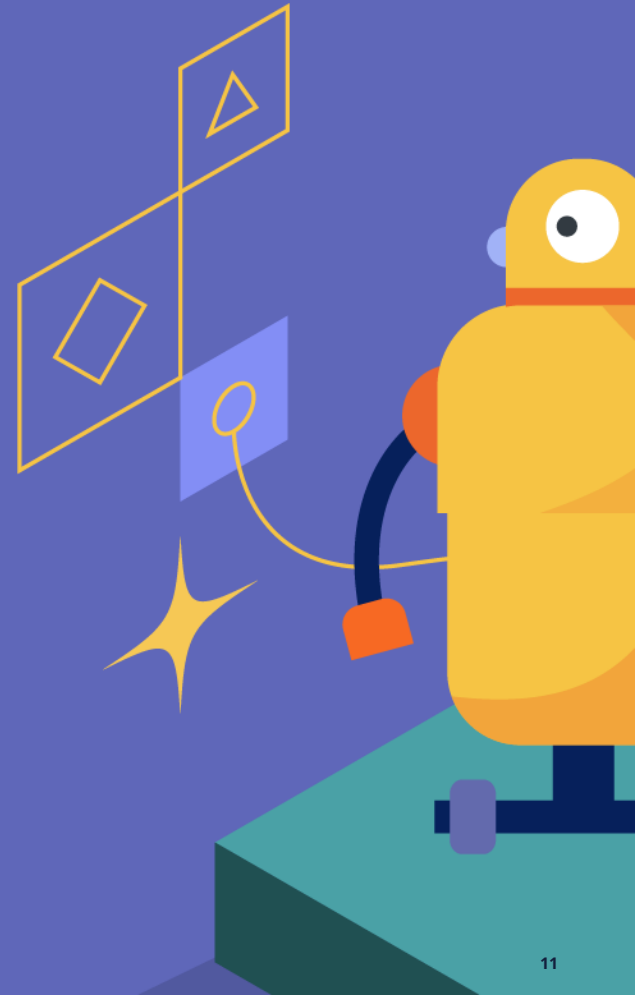




CYSP-1, Nicolas Schöffer, 1956, Cybernetic Zoo



What about an  
**Autonomous  
Enterprise?**

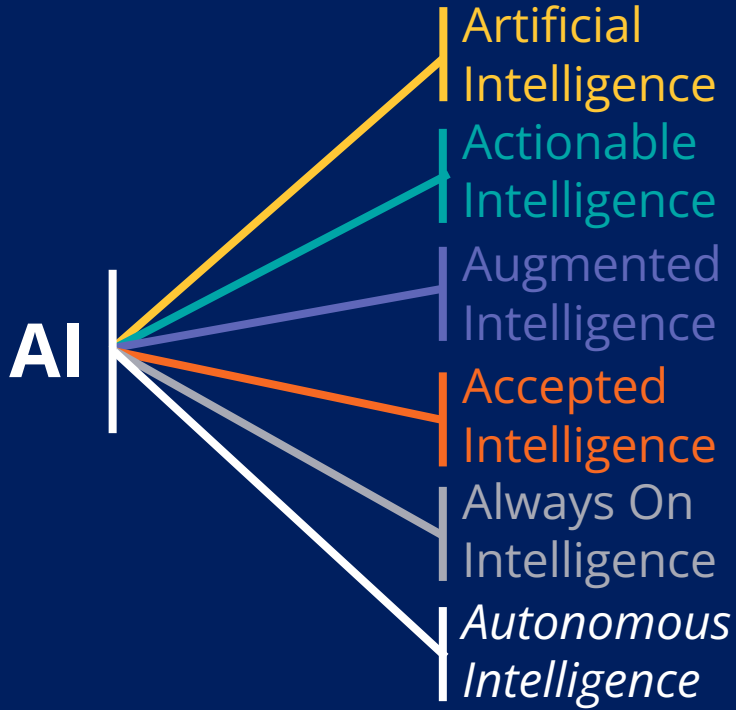




The **autonomous enterprise** is a self-driving business that has applied artificial intelligence, automation and workflow to the problems of operations and management

Chris MacFarland, Forbes 2020





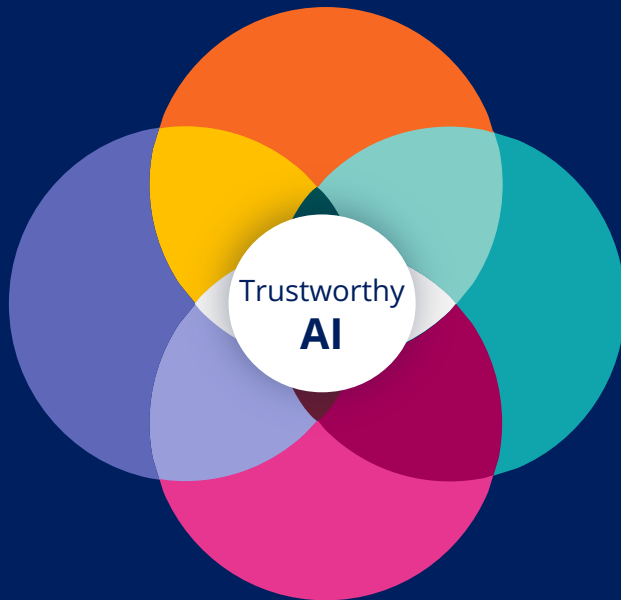


# AI = Accepted Intelligence

## Transparent

explainable to a human audience

**Unbiased**  
fair and balanced for all groups



## Empathetic

act in the best interest of the other

**Accountable**  
traceable across training, config, & deployment



# AI = Autonomous Intelligence

## Goals

Destination  
Speed, safety, entertainment  
Balances and tradeoffs

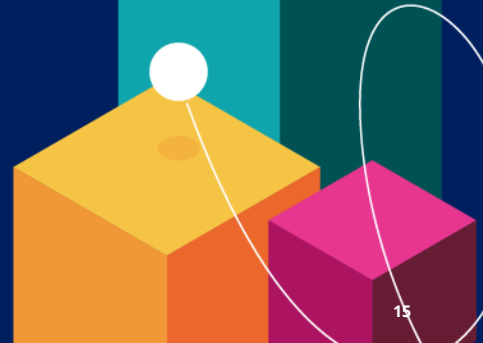
## Constraints

Rules of the road  
Speed limits, traffic, convention  
Policies and strategies



## Outcomes

Travel times and delays  
Accidents and incidents  
Intermediate progress

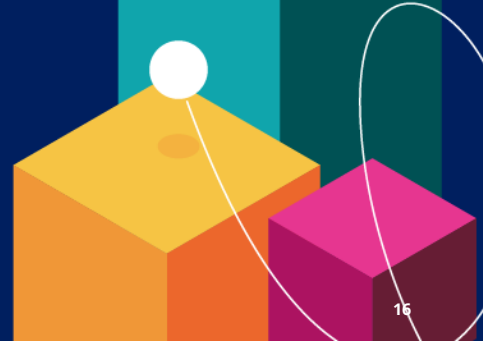


# AI = Autonomous Intelligence

**Sense**

**Plan**  
**Generate**  
**Predict**  
**Decide**  
**Memorize**  
**Learn**

**Act**

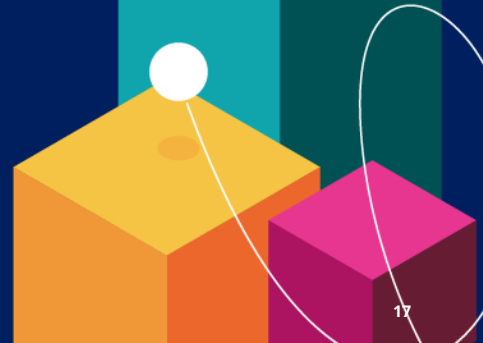




# AI = Autonomous Intelligence



Deliver **hyper-personalized experiences at scale**  
throughout the **customer lifecycle** - from engagement to service through operations  
driven by **AI, automation, & continuous optimization**



# The Autonomous Enterprise drives top level strategic goals

## Hyper-personalized engagement

Maximize value & engage with empathy

95% of marketing, data & analytics leaders say delivering relevant, real-time customer engagement is a priority<sup>1</sup>

## Seamless as-a-Service experiences

Accelerate service & eliminate friction

45% of business leaders feel that their organizational dynamics have made their day-to-day job more complicated<sup>4</sup>



## Intense focus on efficiency and margins

Increase productivity & keep headcount static

93% of customer service leaders say fewer contact agents needed is an important goal in the next 3-5 years<sup>2</sup>

## Agile everywhere

Innovate to deliver on top level strategic goals

82% of Fortune 500 CEOs feel their organization is effective at strategic planning. And only 14% indicated to be effective at implementing that strategy<sup>3</sup>



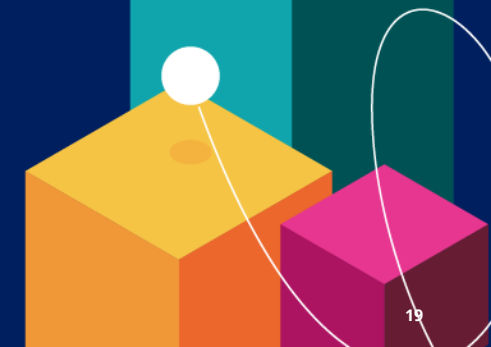
[1] Pega Future of Engagement research 2022

[2] Pega Future of Service research 2022

[3] Forbes Magazine

[4] Pega Complexity research 2022

# Becoming an Autonomous Car



# Becoming an Autonomous Enterprise

Which of the following describes where your organization currently is in the process of becoming an autonomous enterprise?

Total	13%	21%	40%	25%	1%	1%
Enterprise	11%	19%	40%	29%	1%	0%
Mid-size	12%	20%	36%	31%	0%	1%
Phase	Low Autonomy	Directional Assistance	Simple Automation	Intelligent Automation	Full Autonomy	Don't Know / Not Sure

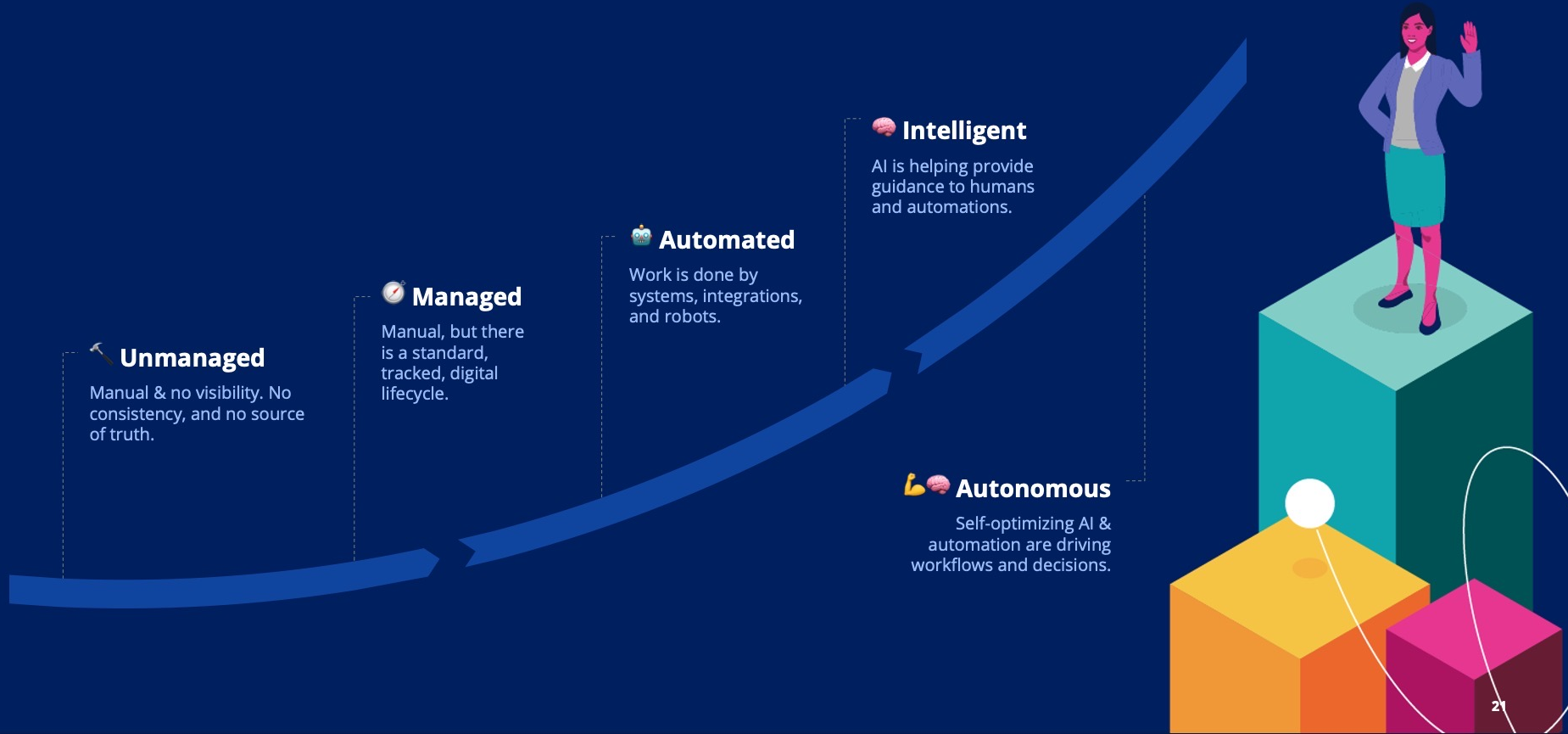


\*Pega Research Study



# Becoming an Autonomous Enterprise

Delivering superior experience and outcomes across engagement, service and operations



# What about Autonomous Engagement, Service and Operations?



# Becoming an Autonomous Enterprise

Delivering superior experience and outcomes across engagement, service and operations



## Autonomous engagement

Drive more personalized, relevant engagement with at scale AI-powered decisioning that is:

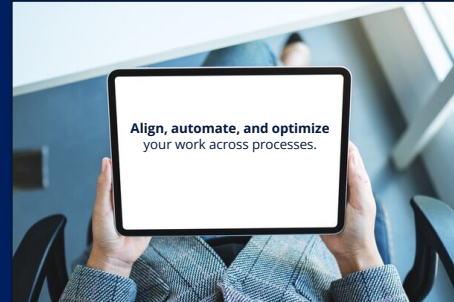
- Transparent, gives insight and audit into why it made the decision it did
- Governed, combines seamlessly with business rules and people
- Trustworthy, monitored for responsibility and effectiveness



## Autonomous service

intelligently engage and seamlessly automate every customer journey, transform your business one customer journey type at a time – without disrupting your existing systems

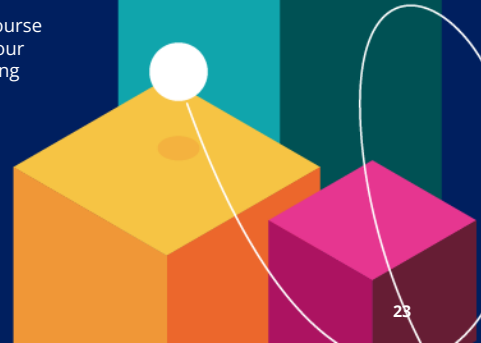
- Assisted Service
- Self-Service
- Proactive Service



## Autonomous operations

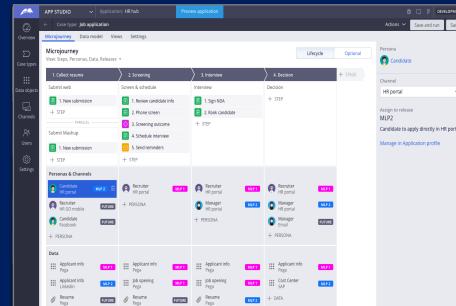
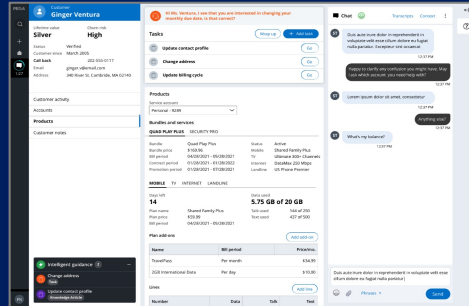
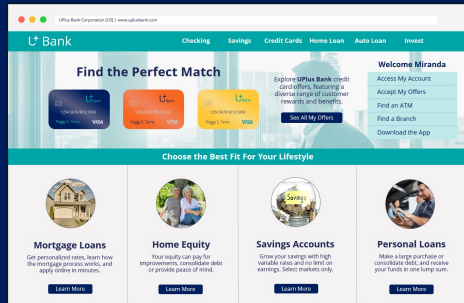
Drive automations which earn the best course of action at every decision point across your back-office – guiding employees and driving work to done

- Align your workforce
- Automate your back-office
- Continuously optimize processes



# Becoming an Autonomous Enterprise

Delivering superior experience and outcomes across engagement, service and operations



## Autonomous engagement Pega Customer Decision Hub

GenAI, Next Best Action, Value Finder, Simulation, Customer journey, GenAI

## Autonomous service Pega Customer Service

GenAI, Agent assistance, Self-service, Automation, Voice AI, & Messaging AI

## Autonomous operations Pega Platform

GenAI, Workflow automation, RPA, Process AI, Process mining





# Autonomous Engagement

Drive real-time personalized interactions

Level of Autonomy

Business Value

## Autonomous

*AI constantly simulates outcomes to optimize strategy, with guardrails to safeguard stakeholders*

- C-Level
- Trade-Offs
- Value-Driven
- Compliance
- Governance
- CLV-Optimized
- Portfolio KPI
- Auto-Experiment
- Responsible AI
- Risk Mitigation

## Intelligent & Self-Learning

*AI accelerates learning and adaptation, increasing the efficacy of automated initiatives*

- Relevance
- Empathy
- Decisioning
- Arbitration
- Fairness
- Value
- Centralization
- Simulation
- Adaptive
- Transparency

## Automated

*Marketing Automation amplifies the scale and impact of human-engineered initiatives*

- Rules
- Scoring
- Segments
- Targeting
- Suppression
- Journeys
- Triggers
- Analytics
- Campaign Mngt
- Test & Control

## Human

*Human labor is the primary driver of content, creative, tactics, and strategy*

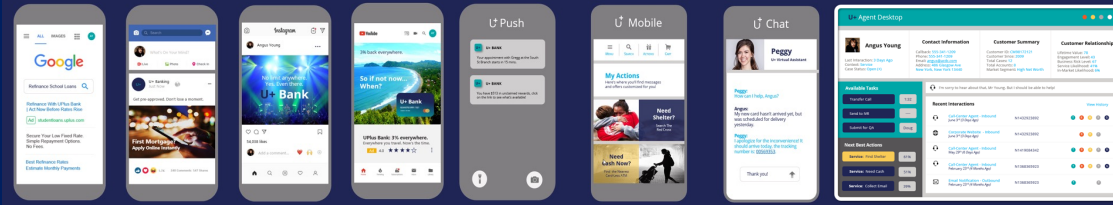
- Campaigns
- Offers
- Tone
- Messages
- Copy
- Styles
- Imagery
- Channels
- Prioritization
- Call To Action



# Autonomous Engagement

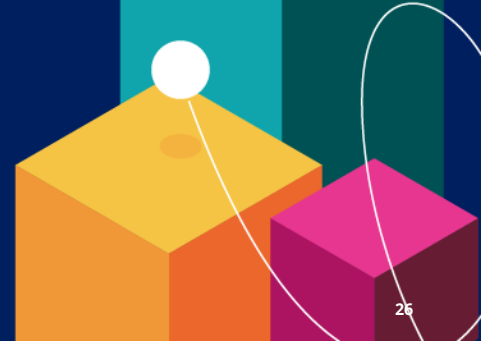


① Gather and interpret relevant customer and context data



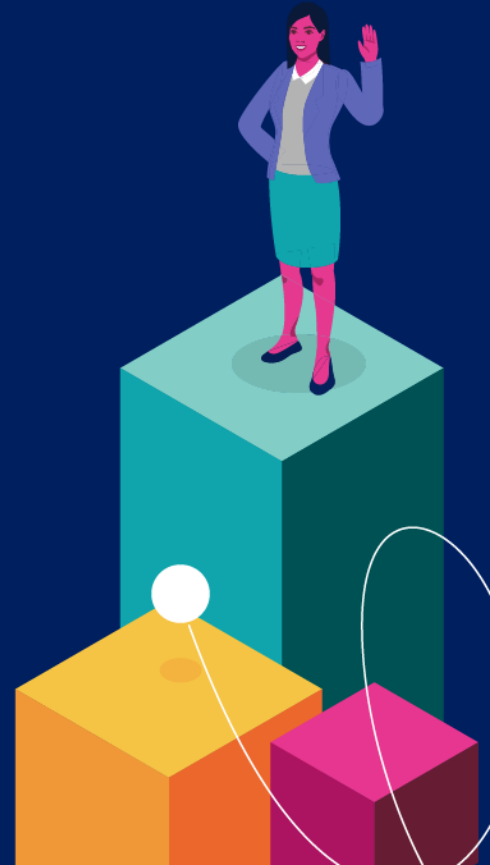
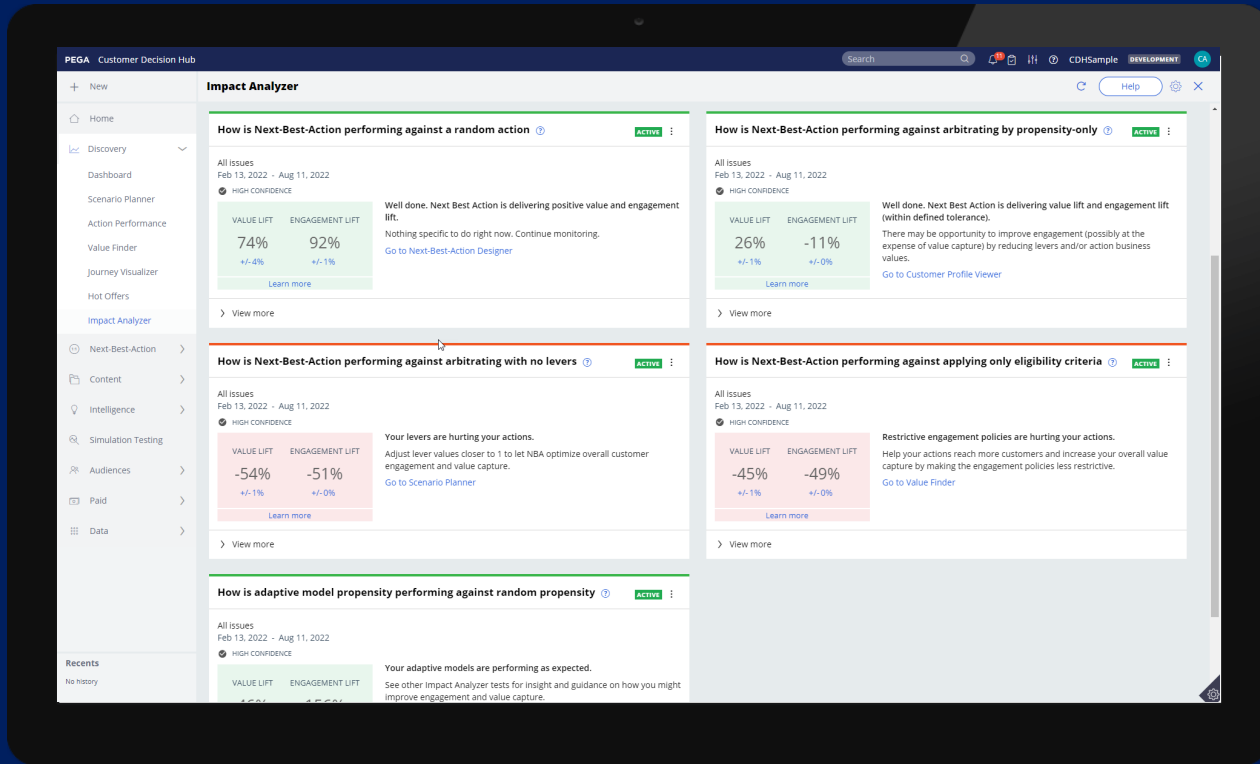
① Recommend top  $n$  eligible NBAs, ranked by  $P*V*L$

① Capture feedback on click/response/conversion, Update self learning models



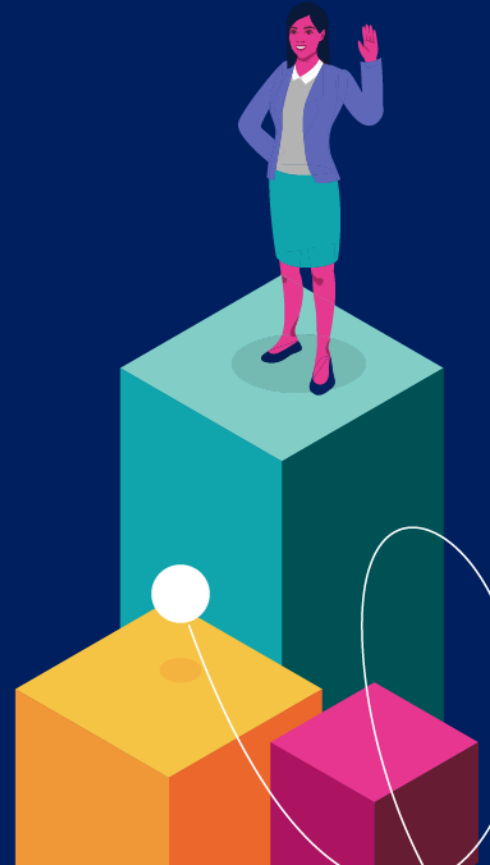
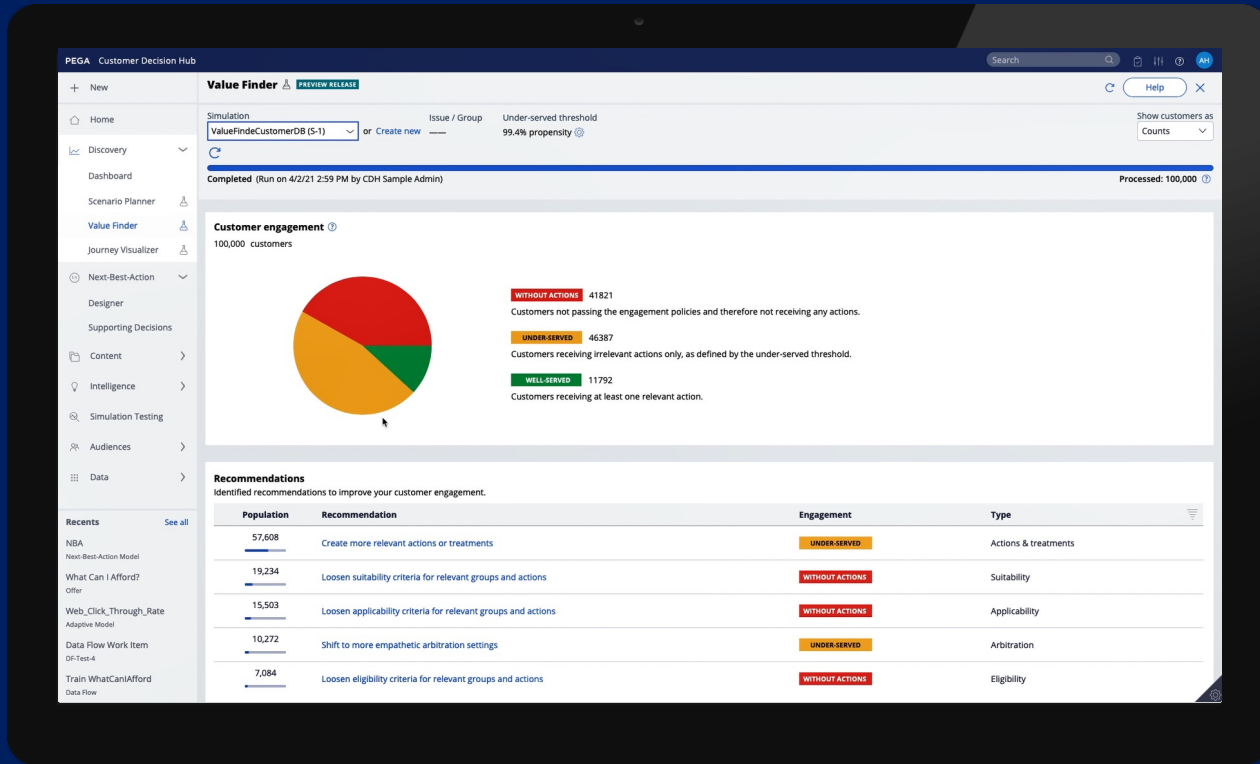
# Autonomous Engagement: Impact Analyzer

Steer and optimize the impact of Next-Best-Action



# Autonomous Engagement: Value Finder

Identify underserved customer segments to increase relevance, engagement and value



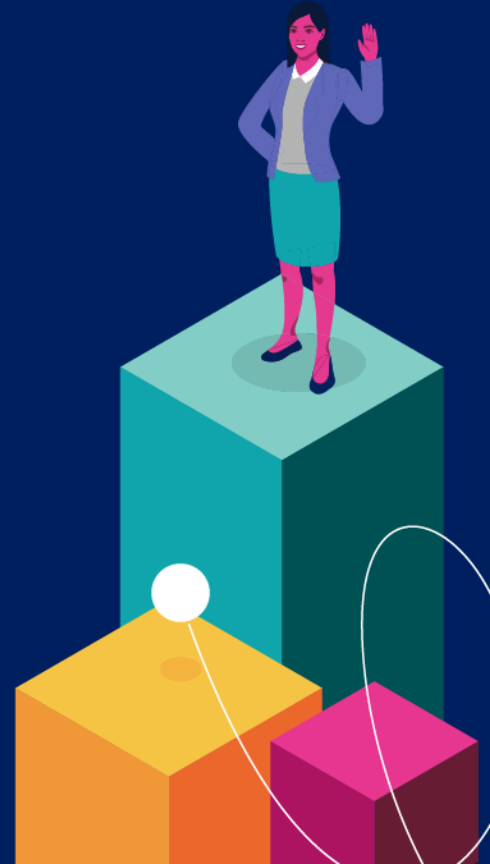
# Autonomous Engagement: GenAI™ in 1:1 Operations

Identify problem areas and suggest better treatments for specific actions and audiences

The screenshot displays the PEGA Automated Enterprise dashboard. At the top, a notification states: "Pega's AI has generated new suggestions to improve your messaging! Last run today at 12:10PM". Below this, there are filter dropdowns for "Outcome or Journey" (All), "Line of business" (Credit Card), "Actions" (All), "Customer type" (Tech-savvy millennial), and "Focus area" (Underserved populations). The main content area is titled "New insights" and lists several AI-generated suggestions:

- Create treatments for Gold Credit Card Action** (TECH-SAVVY MILENNIALS, LOW PERFORMANCE): Includes a detailed description of the problem (low response rate) and a "Recommended content configuration" table.
- Create treatments for Travel Credit Card Action** (TECH-SAVVY MILENNIALS, BELOW AVERAGE PERFORMANCE)
- Create treatments for Platinum Credit Card Action** (MIDDLE-AGED HEAD OF HOUSEHOLD, LOW RELEVANCE)
- No Actions exist for your Mortgage > Acquisition journey stage**
- Need more Sales / Mortgage Actions** (MIDDLE-AGED HEAD OF HOUSEHOLD, LOW PERFORMANCE)

Each suggestion includes a "Progress to plan stage" button and a "Preview 4 treatment suggestions" link. A preview of a treatment suggestion for a Gold Credit Card is shown, featuring a 2% cash back offer and a list of terms and conditions.





# Autonomous Service

Anticipate what customers need, before they need it

## Preemptive Service

## Proactive Service

## Responsive Service

APP  
SMS  
TRIGGER  
EMAIL  
T2V

APP  
SMS  
TRIGGER  
EMAIL  
T2V

Moment of need

Anticipate needs and events **before** they become service events

Sense needs **as** they happen and engage

WEB SELF-SERVICE

IVR & CALL DEFLECTION

MESSAGING

EMAIL

CALL CENTER

Streamline processing

Accelerate resolution

Empowers customers

Reduce call volume & duration

Optimize efficiency



# Autonomous Service: Events

Detect issues from event streams and provide predictive, preemptive and proactive service

Network  
Telemetry  
Events

Kafka,  
Kinesis,  
WebSocket

*Account* event handler



*Account* event strategy



*Network* event handler



*Network* event strategy



**Customer**

Update profile and  
engage customer

**Field Service**

Engage (field)  
service  
employees

**Network**

Alert network  
engineering

**Product**

Alert product  
managers



# Autonomous Service: Events

Detect issues from event streams and provide predictive, preemptive and proactive service

**RE Review Maintenance Agreement**

### Maintenance Schedule

Group Fields Density Refresh

Service Type	Service Mileage	Last Service Mileage	Status
Oil Change	5,000	5,000	Complete
Brake Service	5,000	10,000	Complete
Wheel Alignment	5,000	15,000	Complete
Tire Replacement	5,000	20,000	Complete
Transmission Service	5,000	25,000	Complete
Fuel System Service	5,000	30,000	Complete
Air Conditioning Service	5,000	35,000	Complete
Oil Change	5,000	40,000	Incomplete
Brake Service	5,000	45,000	Incomplete
Wheel Alignment	5,000	50,000	Incomplete

Send Telemetry Events

### Recommended Services

Group Fields Density Refresh

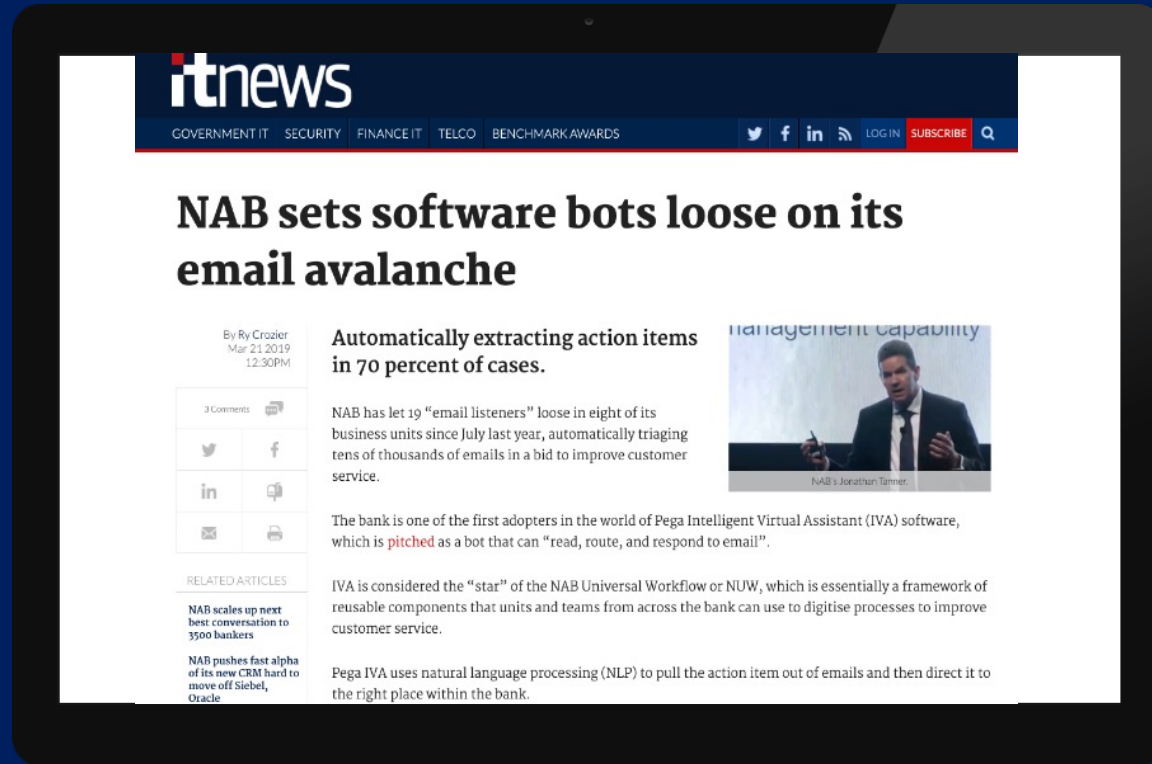
Service	Reason	Service Description	Parts Cost	Labor Cost	Labor	Total Cost
Brake service	Detected hard braking events,...	Change brake pads, brake rotors, and brake...	\$600.00	\$300.00	180	\$900.00
Tire replacement	Tire pressure low for 3 events	Replace 6 tires	\$3,000.00	\$450.00	540	\$3,450.00

Cancel Save Submit



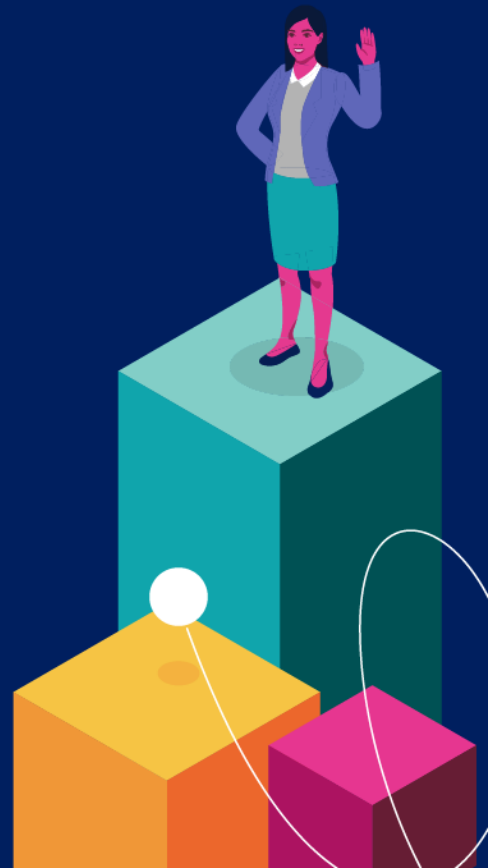
# Autonomous Service: Email bots

Detect intent, automatically resolve or route first time right



# Autonomous Service: Intelligent domain specific Q&A

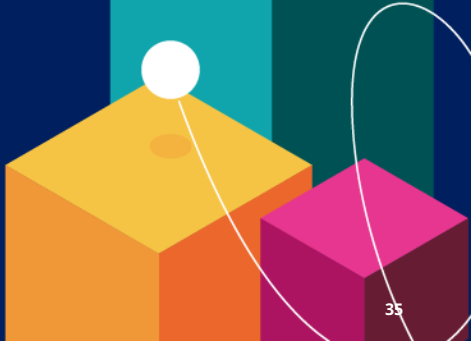
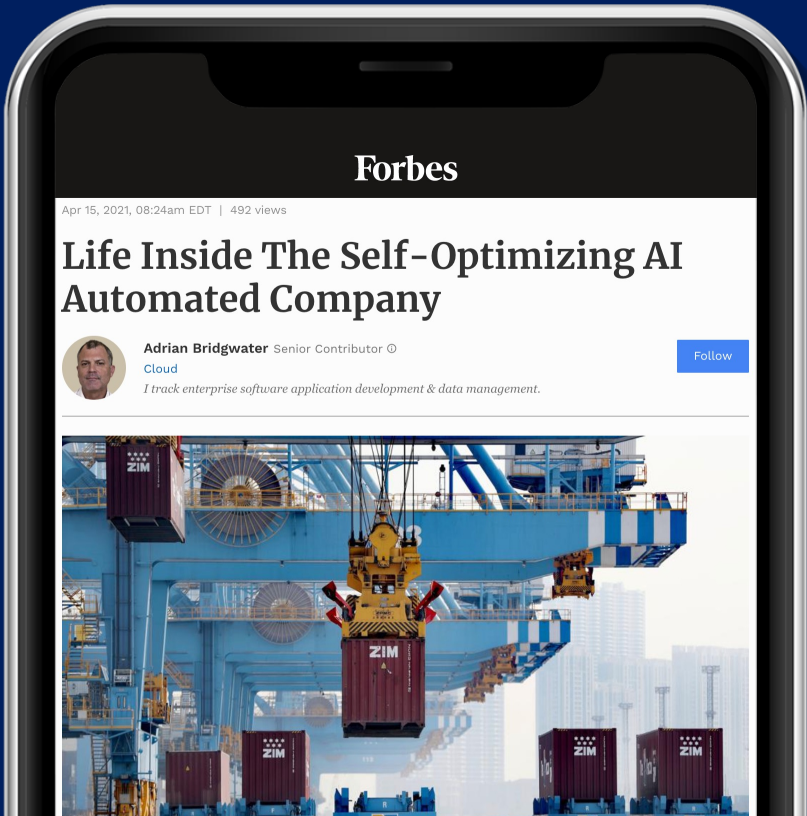
Intelligent Q&A on Pega Documentation (closed domain Q&A showcase)





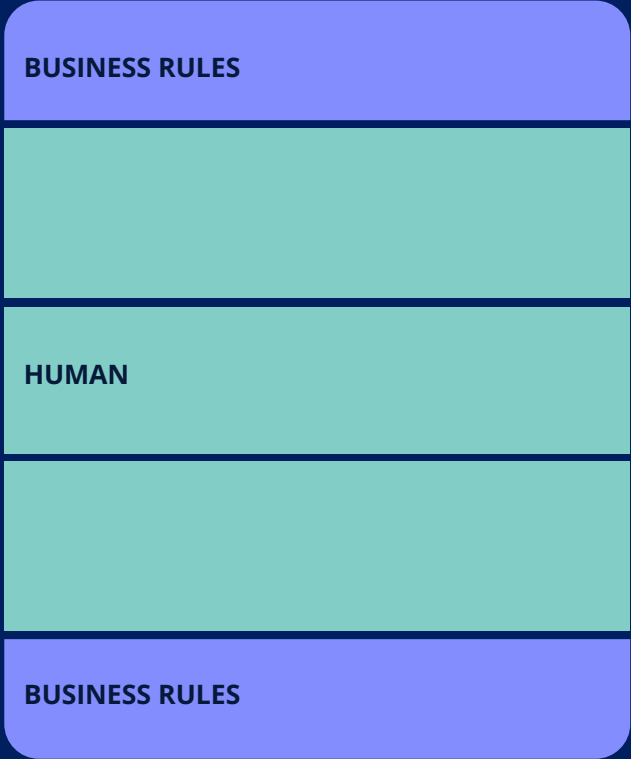
# Autonomous Operations: Process AI

Optimize efficiency and effectiveness with self-optimizing decisions in workflow processes



# Autonomous Operations: The Automation Sandwich

Business rule  
driven  
automation



Automated approval

Mindless approval

Difficult decisions

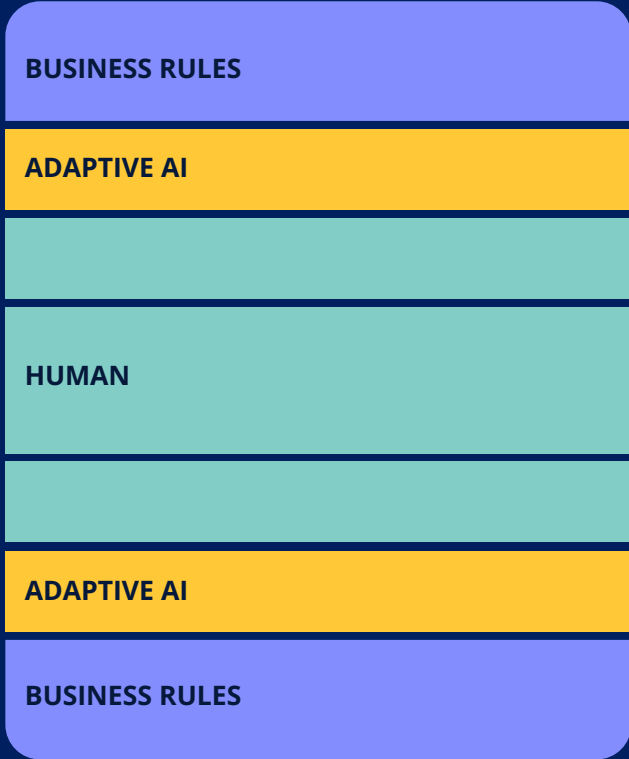
Mindless reject

Automated reject



# Autonomous Operations: The Automation Sandwich

AI learns from human decisions



Automated approval

Mindless approval

Difficult decisions

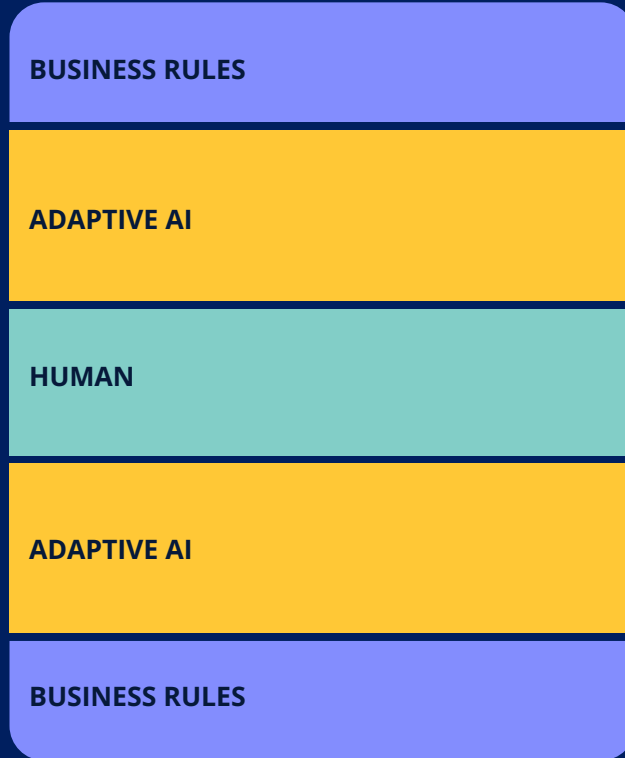
Mindless reject

Automated reject



# Autonomous Operations: The Automation Sandwich

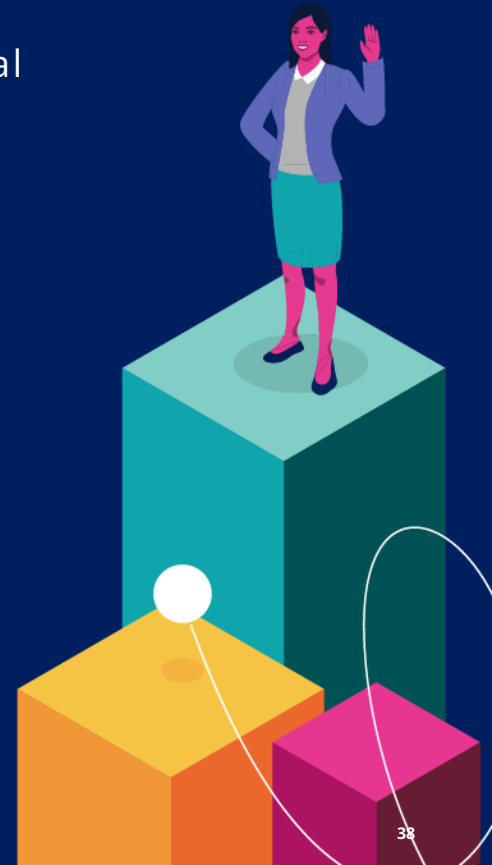
Humans  
can focus  
on difficult  
decisions



Automated approval

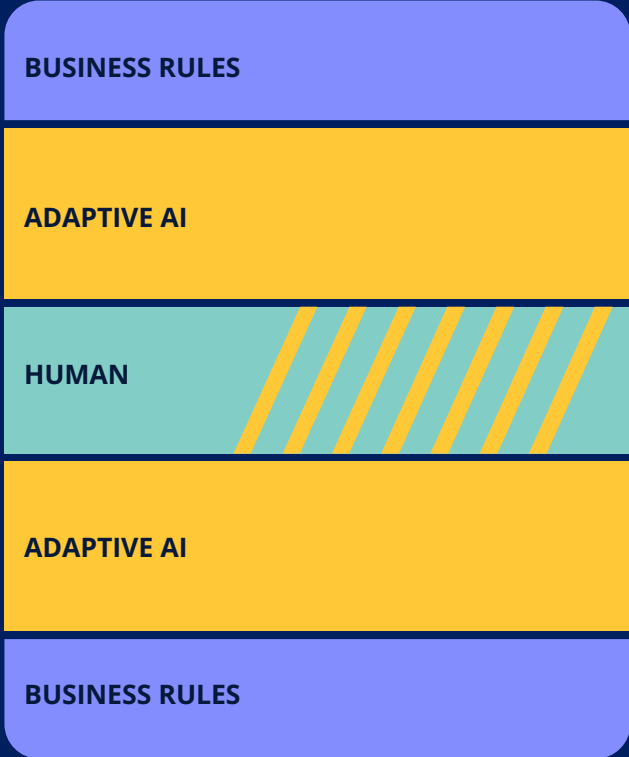
Difficult decisions

Automated reject



# Autonomous Operations: The Automation Sandwich

Difficult decisions made easier with AI insight



Automated approval

Difficult decisions made easier

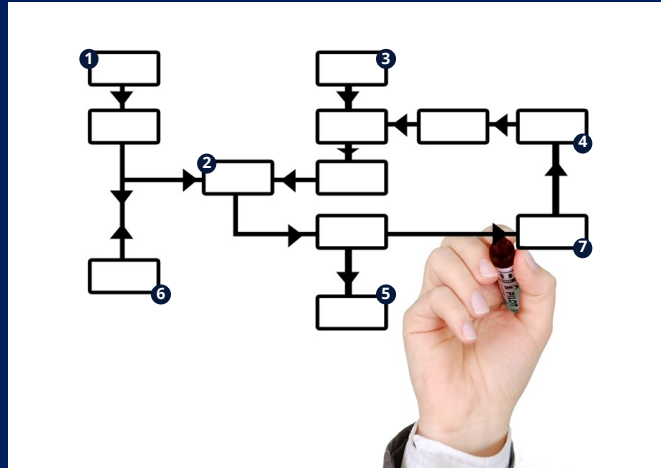
Automated reject



# Autonomous Operations: Process AI

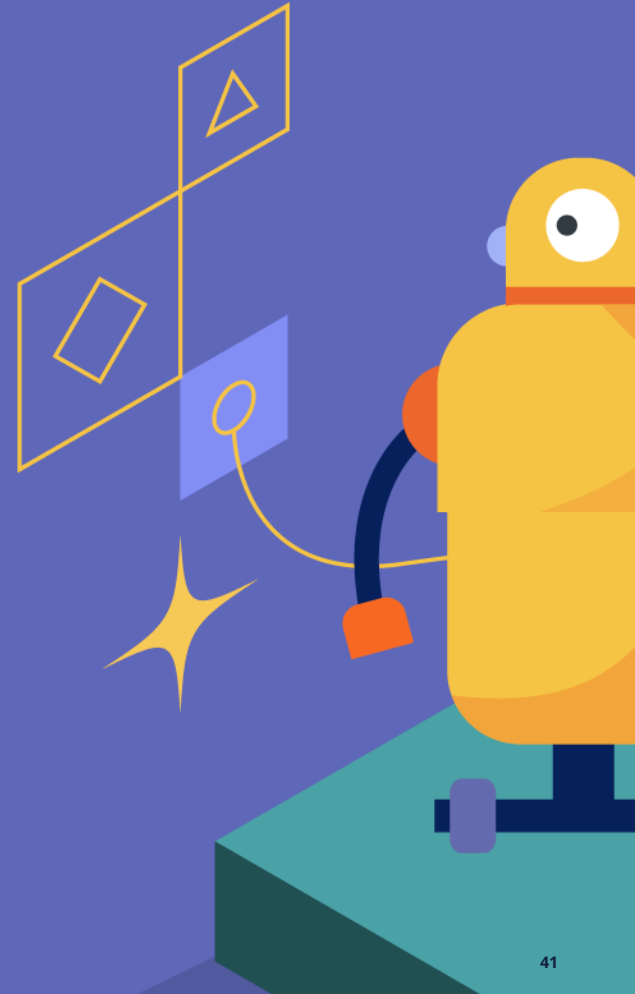
Optimize efficiency and effectiveness by infusing decisions in workflow and applications

- General process decisions
  - Event stream processing
  - Case and problem classification
  - Forecast complexity & SLA
  - Intelligent routing
  - Decide on investigation
  - Proactive escalation
  - Predict durations & slippage
  - Prioritization & get next work
  - Next best step/resolution
  - Predict likely outcome & other events
- Use case specific decisions





What about  
the AI in the  
**Autonomous  
Enterprise?**

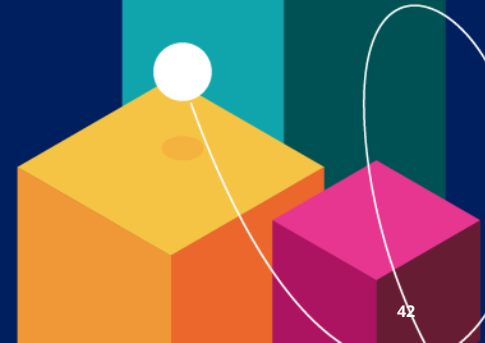


# Pega AI Powers the Autonomous Enterprise

**Sense**

**Plan**  
**Generate**  
**Predict**  
**Decide**  
**Memorize**  
**Learn**

**Act**



SPEECH TO TEXT

TEXT ANALYTICS

PREDICTIVE ANALYTICS

EVENT STREAMS

PROCESS MINING

GENAI

BUSINESS RULES

ADAPTIVE & ONLINE  
LEARNING

DECISIONING

SOFTWARE ROBOTICS

OUTCOME MEASUREMENT  
& CONTROL

CASE MANAGEMENT

BUSINESS PROCESS  
MANAGEMENT



SENSE

## Unlock the value of your data

Tap into streaming info and identify issues before they escalate with capabilities like event monitoring, process mining, speech-to-text, and natural language processing



DECIDE

## Drive outcomes in real time

Evaluate data and actions, predict outcomes, and make decisions in real time using decision strategies, machine learning, and adaptive analytics.

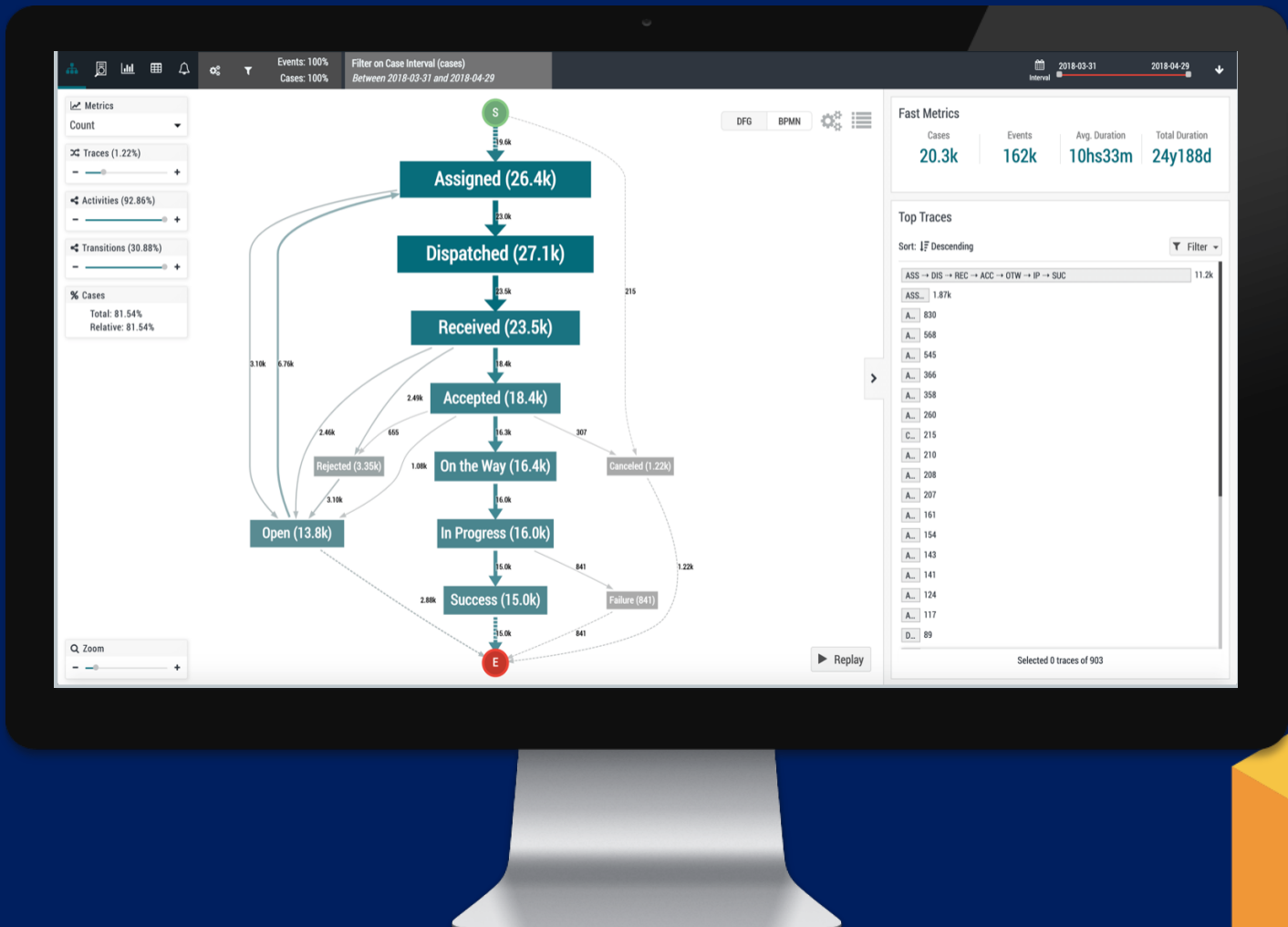


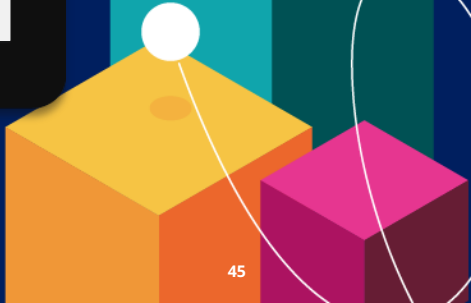
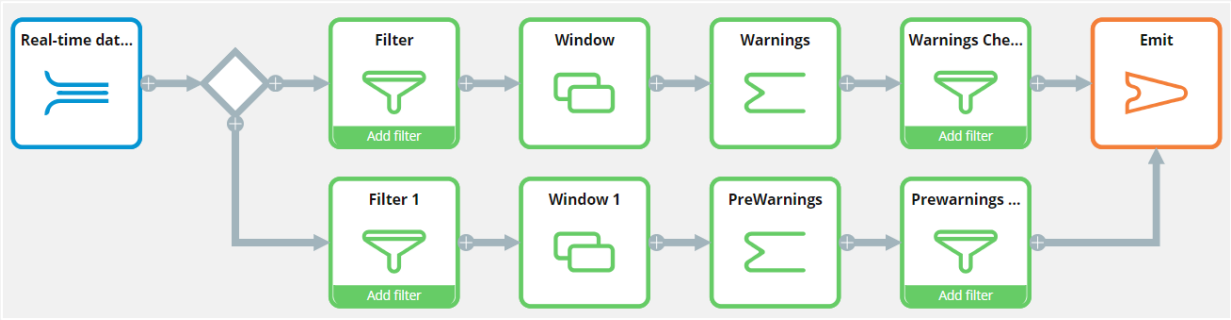
ACT

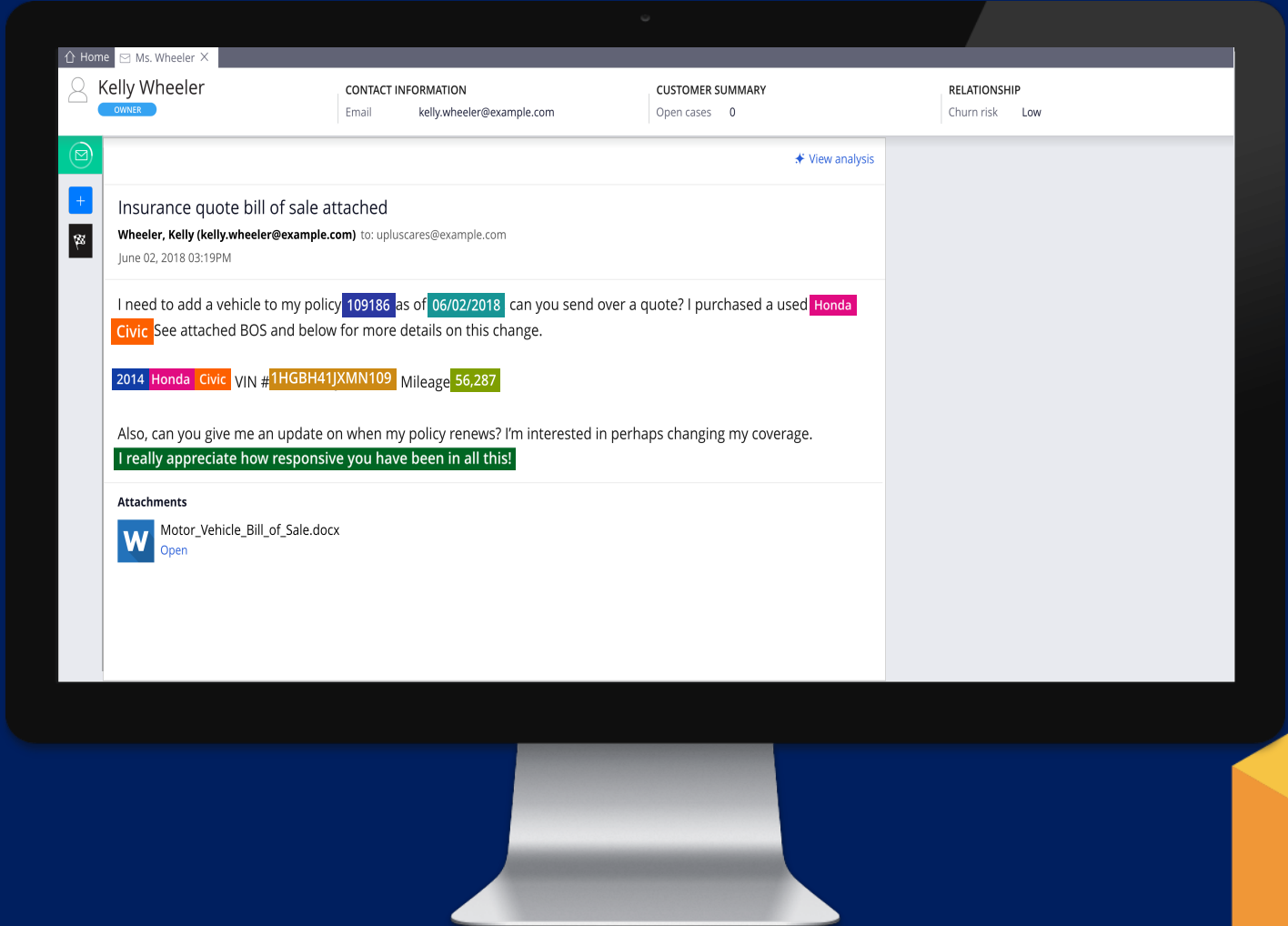
## Turbocharge how work gets done

Turn intelligence into action to work more effectively and deliver better customer experiences with self-learning workflows and intelligent automation











# Decisions make AI real



What to inspect?

What service to offer?

What to prioritise?

Who or what to approve?

What is biased?

What to investigate?

Who to route to?

What or when to escalate?

How to resolve?

What is a good intervention?

What is suspect?

Who is at risk?

What to ignore?

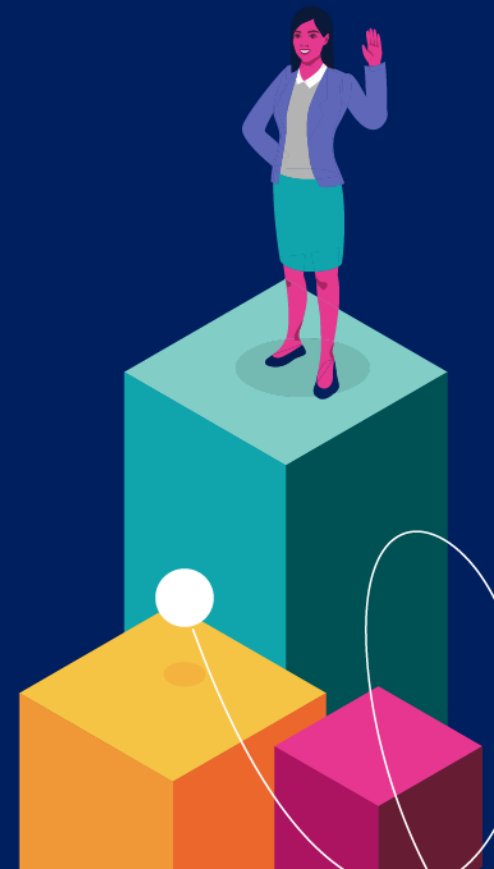
What is non compliant?

What to promise?

What's the problem?

What is at risk?

Who is eligible?





DECIDE



Collect Claims Details

Claims Processing

Claims Disbursement

+ STAGE

CollectClaimInfo

Decision

Low Risk Claim

High Risk Claim

Configure condition

Set conditions (1)

Probability is less than or equal to 5

and

ClaimedAmount is less than or equal to 500

Cancel

Probability of +/- outcomes?

Personas & Channels

+ PERSONA

Data & Interfaces

+ DATA

Claims Rejected

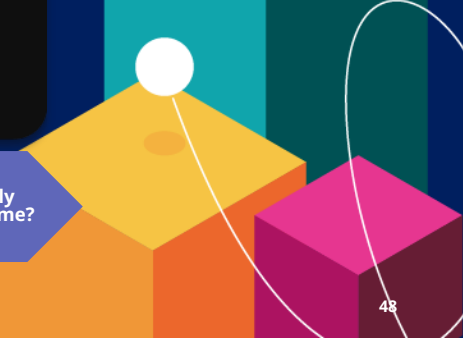
+ ALTERNATE STAGE

ClaimsRejected

ClaimsRejected

+ STEP

Pages





### Next-Best-Action Designer

Help ⚙️ ✕

**Taxonomy**  
Define your Next-Best-Action business structures and customer states

**Constraints**  
Set outbound channel limits and suppression policies

**Engagement policy**  
Capture business rules which define when actions are appropriate

**Arbitration**  
Prioritize actions based on customer relevance & business priority

**Channels**  
Activate the channels and triggers that invoke Next-Best-Action

TestCoPM-Artifacts: 01-01-01 Edited less than a minute ago by Seth Robinson [Edit](#) [Actions](#)

**Arbitration**

**Customer relevance**

Propensity × Context weighting

**Business priority**

Action value × Business levers

**Propensity**  [?](#)  
Apply propensity calculated for every treatment (Recommended)

**Context weighting**  [?](#)

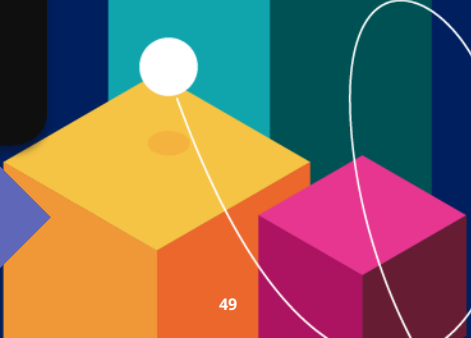
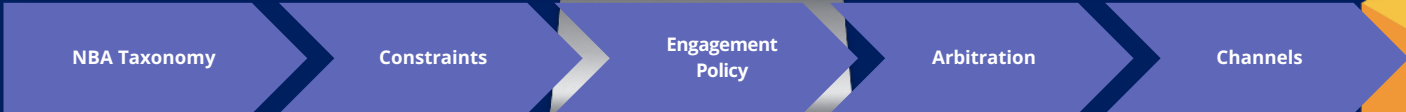
Keys	Value	Issue / Group	Weighting (+/-)
CurrentPage	account.html	Acquisition / Credit cards	50%

**Action value**  [?](#)  
Apply value for every action.

**Business levers**  [?](#)

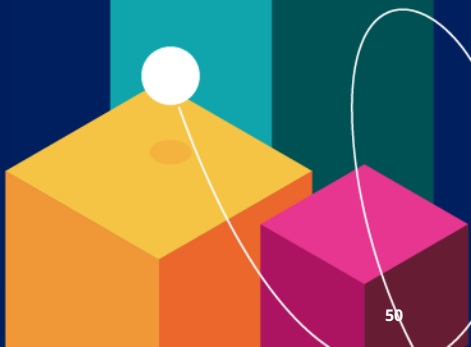
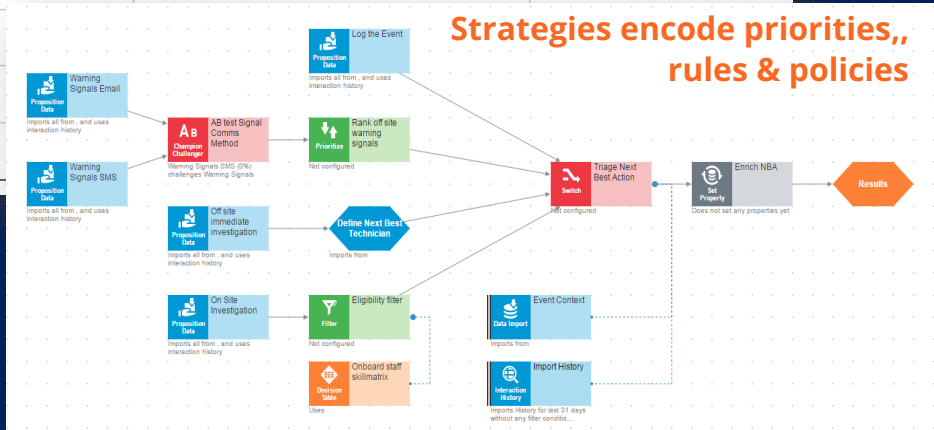
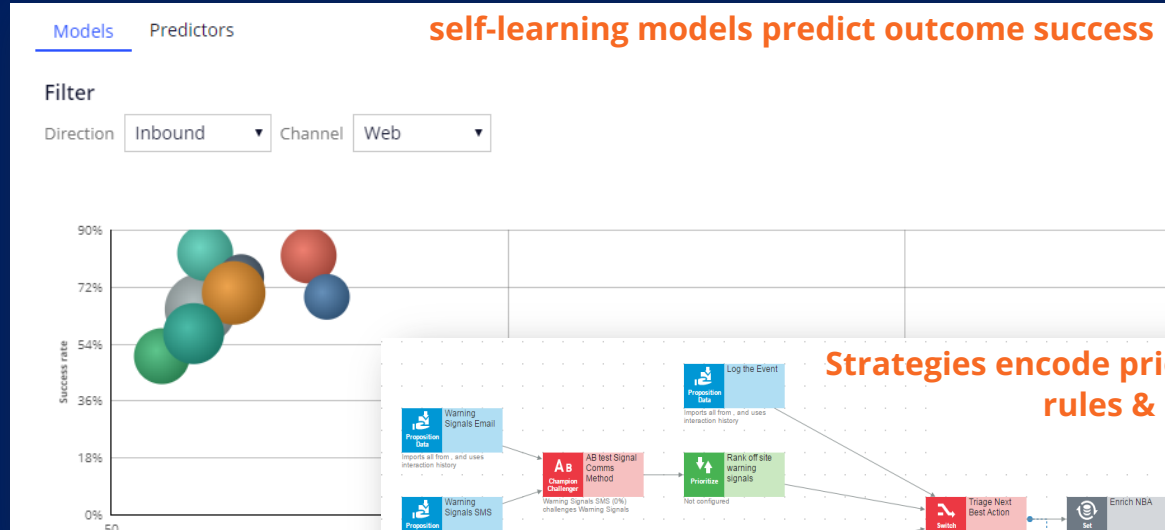
**Action weighting**  [?](#)

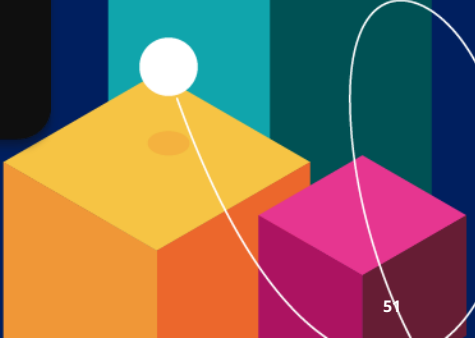
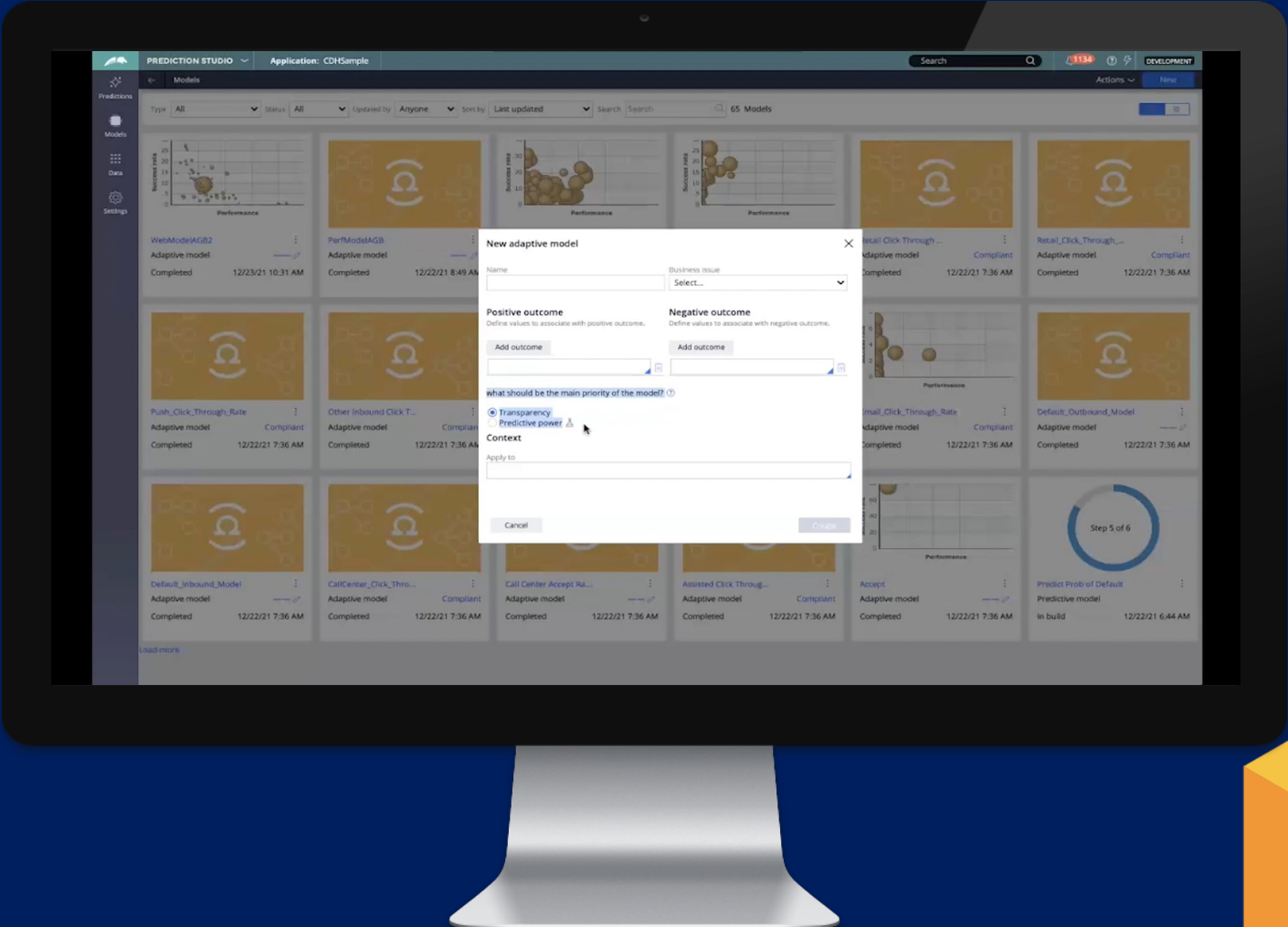
**Business purpose weighting**  [?](#)

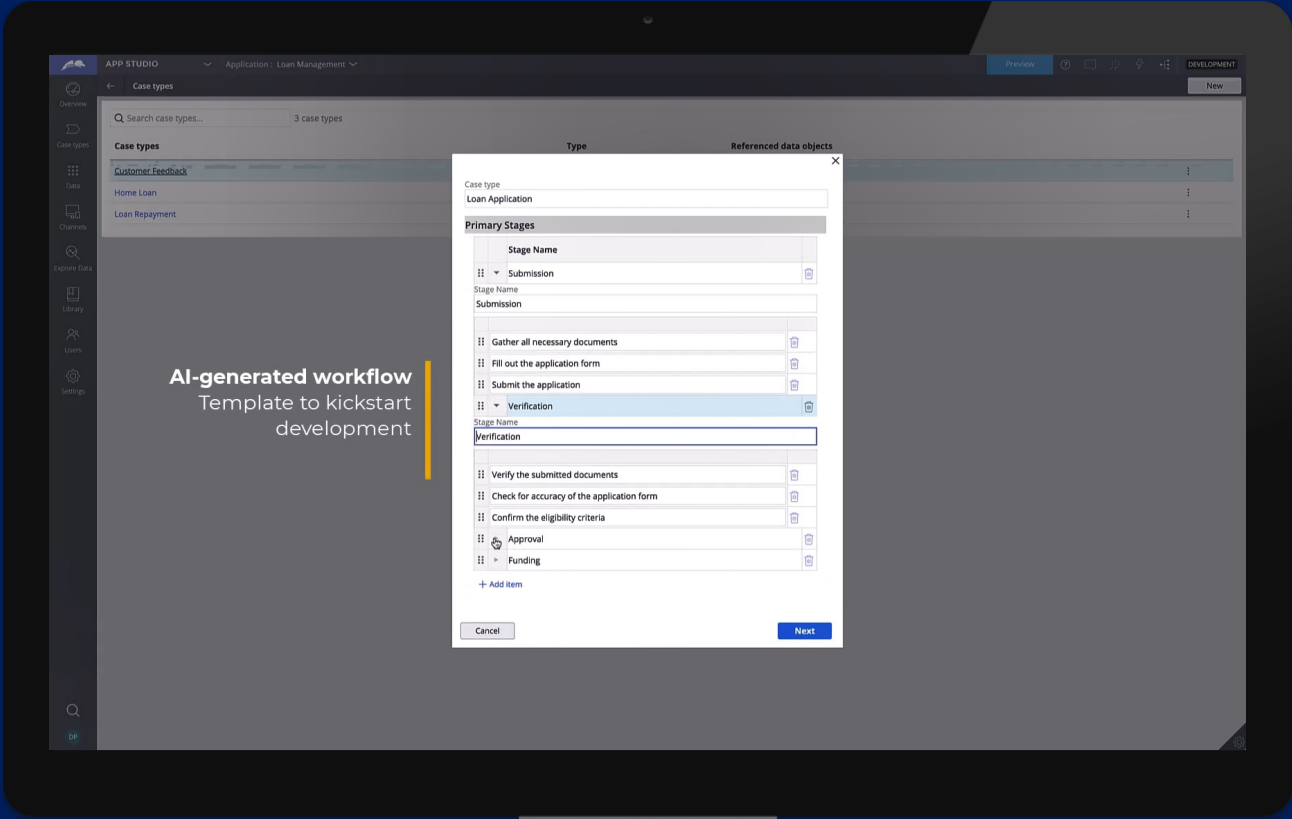
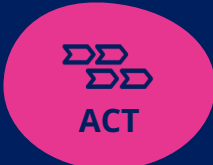


# Self-Optimizing Decisions

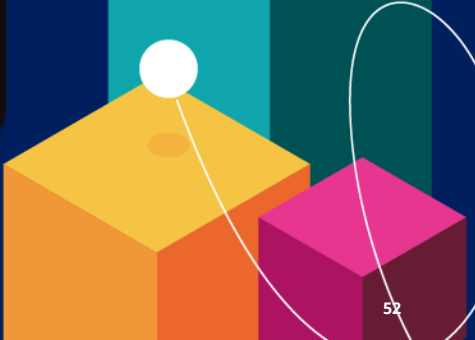
Adaptive models predict outcome success,  
Decision Strategies combine models and rules to power decisions







AI-generated workflow  
Template to kickstart  
development





# Pega AI Powers the Autonomous Enterprise

**Sense**

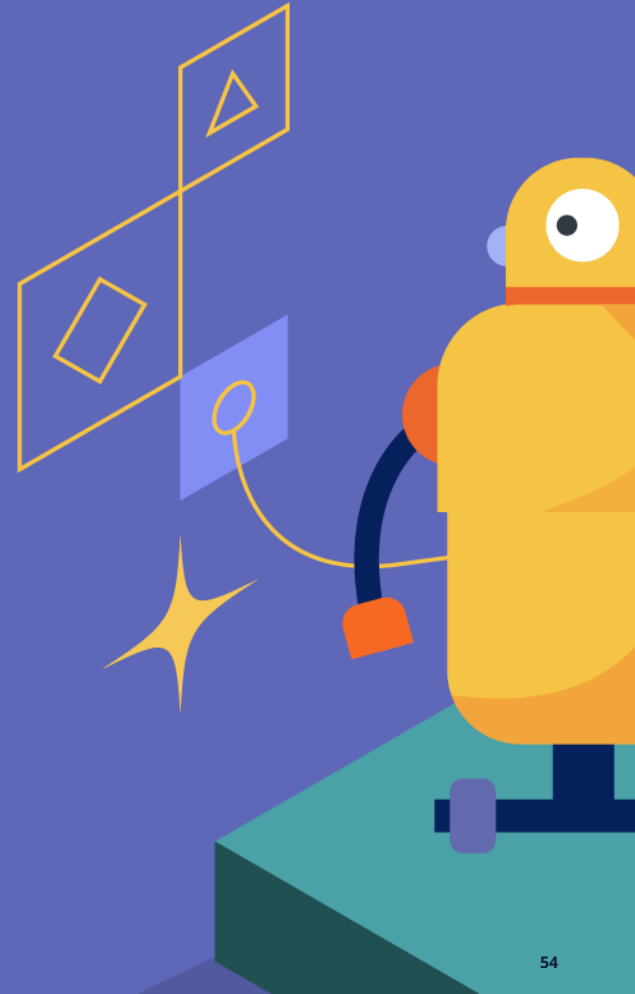
**Plan**  
**Generate**  
**Predict**  
**Decide**  
**Memorize**  
**Learn**

**Act**



# Become an **Autonomous Enterprise!**

*Tomorrow 2pm: Mapping the AI Landscape on GenAI*





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