



# YOUR ROADMAP

to Fully Scalable RPA  
Management

CHOICEWORX

# Contents



## **INTRODUCTION** RPA and the New Age of Digital Transformation

### **I Automation & Bot Management: The Challenge of Scale**

The benefits of RPA are tempered by the unavoidable fact that bots, while extremely reliable overall, are not infallible.

### **II The Proactive Solution for Bot Management at Scale**

An AI-fueled engine that proactively performs roles previously reserved for the IT team.

### **III How PwC Found the Best Automated Bot Management System**

PwC set out to solve the challenge of scaling enterprise-level process automation.

### **IV How AI-Fueled Automation is Changing the Business World**

Artificial intelligence changes the game.

### **V The Next Generation of Automation Management**

This is not science fiction, and it's closer than you might think.

## INTRODUCTION

# Robotic Process Automation (RPA) and the New Age of Digital Transformation

Robotic Process Automation, or RPA, is here to stay. Since taking the technology scene by storm around 2015, companies of all sizes across most industries have implemented armies of “bots” to help improve efficiency, increase productivity and optimize resources, especially labor costs.

In his 2020 book, *The Care and Feeding of Bots*, author Christopher Surdak defined RPA as “software that mimics the actions that humans make in operating other software.” Surdak also wrote that in a 30-year career in tech, he has never seen a new technology catch on as “rapidly and rabidly” as RPA.

Yet, even as RPA became a business mainstay, it was evident that bot utility was limited by the demands of bot maintenance. This was the driving theme of Surdak’s book: that the rush to take advantage of the obvious merits of process automation left some companies vulnerable to a few inherent realities.

### And what were these realities?

First, systems and processes evolve. Technological advances move fast, and processes must adapt. Updates and incremental advances are inescapable, and bots must be able to respond to shifting requirements and expectations.

Second, RPA maintenance as performed by a traditional IT department can rob a company of valuable time. In addition to the effort put forth by the IT team to find and fix broken bots – or to update existing bots to new specs – end users were potentially subjected to major workflow disruptions as they waited for their devices to work as intended.

As ChoiceWORX co-founder Frank Casale warned in the foreword to Surdak’s book, “... having a bot development plan is insufficient. Also needed is a bot management and repair capability plan from the start in order to have a viable bot strategy – one capable of scaling.” Organizations with no viable bot maintenance plan were in danger of hitting what Casale calls the “RPA wall.”

What this new age of digital transformation required was a way to ensure that companies could enjoy the benefits of bots and drive forward at scale without enduring the inconvenient and costly speed bumps.

Casale and fellow ChoiceWORX founder Sam Gross not only recognized the need to break through that RPA wall, they found a way to smash it: Create bots that monitor, maintain and repair other bots at every level of the RPA ecosystem.

## PART I

# Automation & Bot Maintenance: The Challenge of Scale

What made RPA so popular, so quickly? It was the promise of lower costs through resource optimization – especially when it comes to labor expenses.



Bots were implemented to handle legacy business applications once managed solely by humans, as well as new tasks made possible by advanced technology. As Frank Casale of ChoiceWORX wrote in the foreword to *The Care and Feeding of Bots*: “In theory, the bots work tirelessly, faster, without variation or error, and can be instantly repurposed with a mouse click.”

The benefits of RPA are tempered by the unavoidable fact that bots, while extremely reliable overall, are not infallible. Nor do they last forever. “Broken Bot Syndrome” is workflow disruption and a related decrease in productivity that results from a set of challenges inherent to any digital system.

A bot’s efficiency depends on the integrity of its programming and of the entire IT infrastructure. That integrity can be jeopardized by the many dependencies associated with the application, from issues with the RPA host to connectivity and many other potential roadblocks to productivity.

The entire bot ecosystem must be monitored and maintained. Every bot has up to 12 potential points of failure, and when faults occur, they must be repaired. This requires a team of IT pros.

And therein lies the major obstacle to scaling automated processes – the labor-intensive, time-consuming maintenance required to keep everything running as intended. Enterprise organizations with thousands of applications running across thousands of devices are at the mercy of a system essentially made to solve analog problems in a digital world.

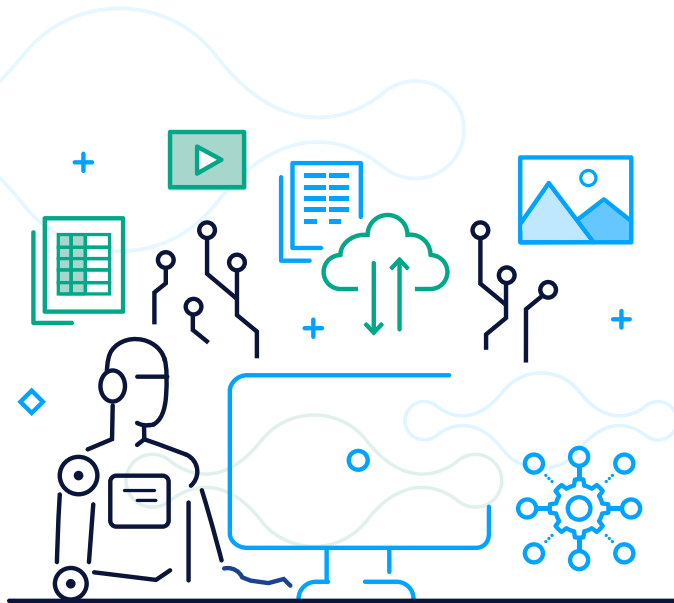
The more bots, the more potential points of failure. The more potential for failure, the more IT pros are needed to keep the ecosystem operating smoothly.

For true RPA scale, a team of IT pros would need to be on duty around the clock, monitoring, maintaining and repairing failures as they occur. Or ... bot management could be automated, too.

**But what would *that* look like?**

## PART II

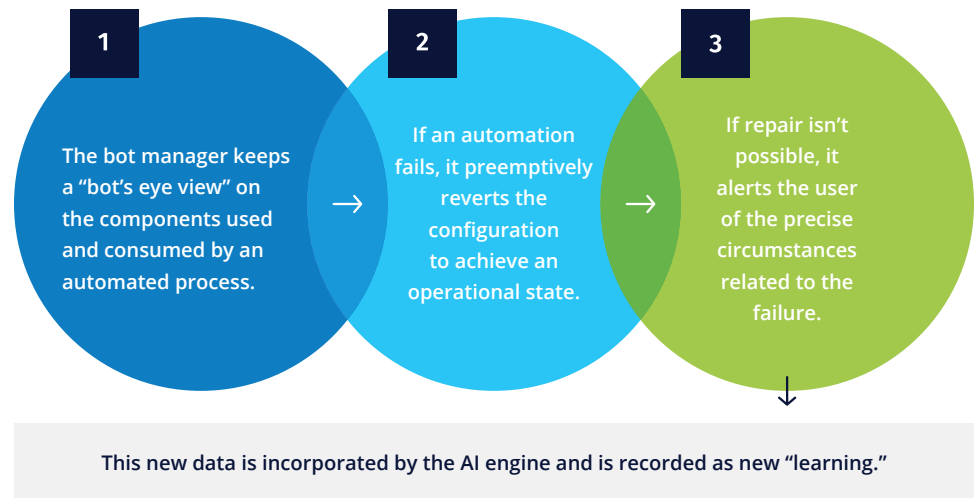
# The Proactive Solution to Bot Management at Scale



ChoiceWORX devised an elegant solution to the challenge of managing a massive array of automated processes: Use digital labor to manage bots.

Their automated bot management platform, WORX for RPA Management, solves the problem of enterprise RPA scaling by using an AI-fueled engine to proactively perform roles previously reserved for the IT team. It constantly monitors every potential breaking point and preemptively makes necessary updates or repairs – thereby reducing the need for human intervention and avoiding workflow disruption for end users.

Here's how it works:



As new circumstances are recorded, the depth of available proactive solutions increases. The information gathered via one segment of the RPA system might then be applied to other segments, providing broader maintenance coverage as the platform matures.

**With digital labor fixing bots, the challenge of enterprise-level RPA scaling is solved.**

## Why Automations “Break” THE SERIOUS 7

The overwhelming majority of bot failures are attributable to elements of the IT infrastructure that are outside the control of the automation. The automation code isn't likely to fail, but the infrastructure is subject to changes such as:



Expired credentials



Host device changes



RPA host memory, CPU  
or browser utilization



External application  
processing time



Application outages



Upstream/downstream  
data access failures



Client application  
changes

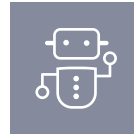
Source: Sylvan Advisory & Consulting

## The Value of AI-Powered RPA Management

Paul Pinto, managing partner of Sylvan Advisory & Consulting, explains Broken Bot Syndrome:

“Broken bot syndrome means you built these bots and they break. And when they break, they don't run. And when they don't run, they don't accrue value. And if they don't accrue value, you never get the ROI you promised.”

One challenge associated with Broken Bot Syndrome is deploying the IT labor force required to monitor, maintain and fix a large system of automated processes.



**The more bots in the field, the more technicians are required to oversee their management.**

Pinto also explains the potential financial sticking points of automation at scale.

“When a company purchases an RPA software product, they pay somewhere between \$250,000 and (millions of dollars) for the licenses,” he said. “They have to build a lot of bots to recoup that fixed, upfront cost. If they only build 50 bots, those bots can't do enough work to recoup the fixed fee. If they build 1,000 bots, the bots recoup the fixed fee pretty quickly.”

The solution to both challenges, according to Pinto, is to implement a digital labor force that “can keep bots up and running more often, thereby enabling them to accrue greater value, which enhances the bots' ability to more quickly deliver ROI.”

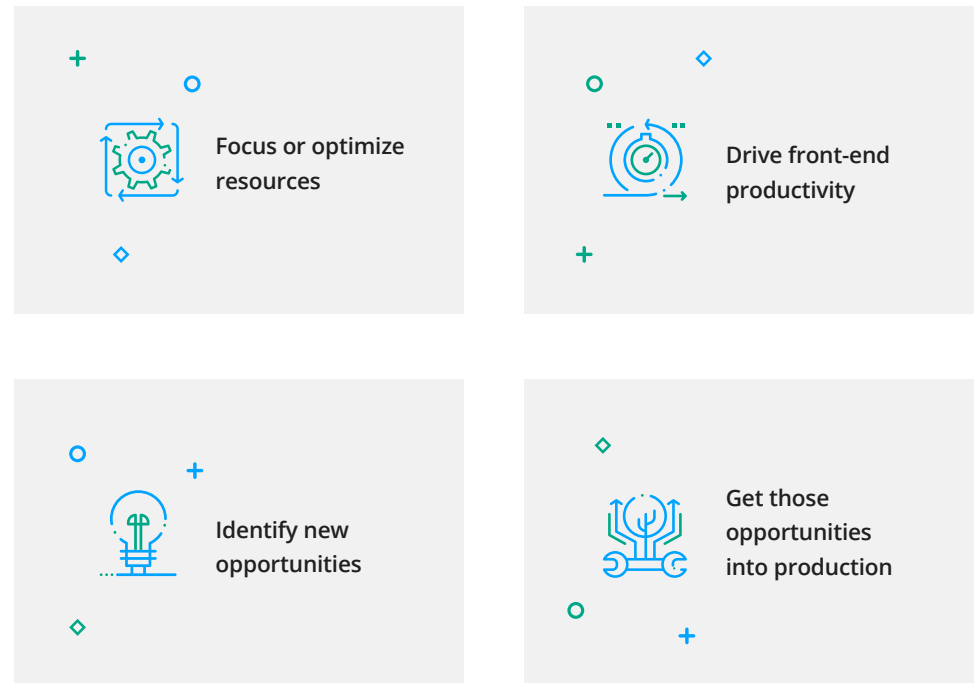
## PART III

# PwC and the Quest for the Best Automated Bot Management Solution

The Intelligent Automation group at PwC keeps its collective eye closely on all things RPA and artificial intelligence. The combination of automation intelligence and AI has ushered in an era dubbed the “fourth industrial revolution” during the World Economic Forum in 2016.

Making sense of this massive digital transformation is what Michael Engel and his team at PwC do. Not long ago, Engel, PwC’s Intelligent Process Automation Leader, tasked his team members with finding the solution to the challenge of scaling process automation for enterprise.

During its broad research into the impacts of RPA and AI, PwC heard from focus groups and clients that through the use of these innovative technologies, they sought to:



One of the major challenges and potential roadblocks, PwC found, was the disjointed, costly nature of automation maintenance. RPA alone was not meeting client needs, so they looked to “go deeper and broader in terms of the processing technology,” Engel said. “Clients are looking to add AI capabilities to RPA in order to scale.”

The ChoiceWORX automated bot management platform:



resolved **70%**  
**of PC issues**  
without human intervention.



Proactively predicts and solves issues before a service desk ticket is raised



“Learns” over time to gain value



Could save thousands per automation per year in labor costs alone

With thousands of automations in the field, Engel said PwC was essentially “playing Whack-a-Mole” with bot management. Problems were repaired as they occurred, with no foresight or predictability. This model was not sustainable, especially as the number of automations increased and grew in complexity.

“We scoured the earth looking for right solution,” Engel said. “We decided we had to build this ourselves. There was no other option until we came into contact with (ChoiceWORX).”

“

**Understanding the dependencies allows the human side to define the set of things that need to be monitored or investigated”**

—Michael Engel

What PwC found with ChoiceWORX was a partner that accomplished “two really important things.”

First, Engel said, the automated bot management system developed by ChoiceWORX manages the portfolio of automations by creating an understanding of the dependencies between automations and the underlying systems.

The second important thing, Engel said, was the ability to monitor automations across all different platforms. This versatility allows for predictability and automatic remediation of failures. As the bots “learn” more about the dependencies, this capability generates ongoing value growth through greater efficiency.



## PART IV

# How AI-Fueled Automation is Changing the RPA World

Bots are a powerful tool for automating processes, but they are inherently unable to adapt without human intervention. That's where artificial intelligence changes the game.



Whereas bots once were dependent on very close human monitoring to operate as intended, an AI-fueled reasoning engine, as delivered by WORX for RPA Management, gives bots more autonomy – and gives human RPA staff members the freedom to focus on innovation, rather than constant bot maintenance.

Here's what's possible when an organization transitions from human monitoring to the digital labor model:

- **Costs are reduced and productivity is increased.**

As digital labor is implemented, it employs bots that are more productive and operate reliably without high incidence of failure, providing their full potential to the enterprise. Freed of mundane tasks, IT team members can focus on strengthening the core competencies of the business.

- **Value is created over time.**

Not all AI is created equal. The AI reasoning engine is different from typical machine learning. It is enhanced by IT-specific ontology that allows for a data model that accounts for static topology data and large volumes of dynamic operational data. The more it “learns,” the more valuable its service becomes.

- **Deployment at scale for enterprise-level organizations.**

Even with thousands of devices in play, the first-of-its-kind AI reasoning engine discovers your bots, detects issues and finds unresolved faults – preemptively resolving them to limit workflow disruption.

- **Multi-vendor bot management compatibility.**

WORX for RPA Management integrates seamlessly with the leading RPA bot technology, such as UI Path and Automation Anywhere. AI-as-a-Service means no special AI training needed, no implementation costs, no software acquisition required.

ChoiceWORX automated bot management platform features:

“One does not simply build a bot, send it off into the enterprise wild, and it’s good to go. It needs to be managed, maintained and monitored.” – ChoiceWORX co-founder Frank Casale

And that is exactly what AI-driven automation does for an enterprise-level RPA ecosystem. The effect that is having on the RPA world is only now beginning to be felt.



### End-user SupportSPACE

Web portal for monitoring and managing cross-vendor RPA technologies supporting the enterprise’s digital workforce.



### End-point SupportBOT

SupportBOT resides on the host devices where bots run. It auto-discovers, monitors and reports on all activities, events, and interactions, as well as on system configurations and run-time status.



### AI Reasoning Engine

Creates additional value and becomes smarter over time, automating processes end-to-end.



### IT-Specific Data Ontology

Accounts for static topology data and dynamic operational data for enhanced machine learning capability.



### Cutting-Edge Data Security

Provides security by de-identifying sensitive company end-user and device data.



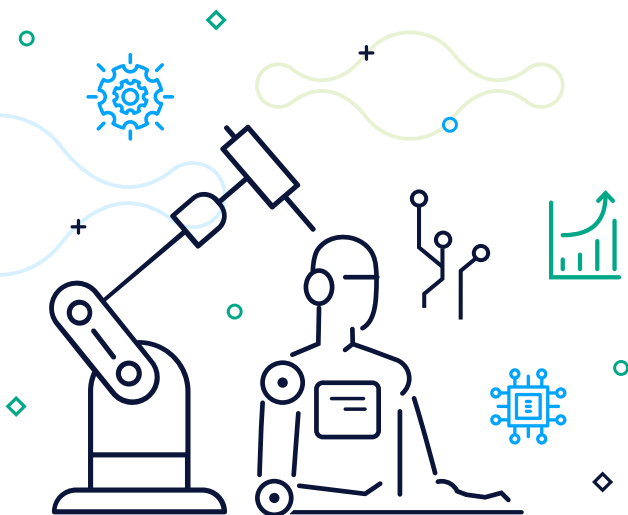
### AI Automation-as-a-Service

Unique SaaS model delivers autonomous RPA management – less human intervention required.

## PART V

# Automated Bot Management and the (Very Near) Future

What's next in AI-fueled bot management? All indications are we won't need to wait long to find out.



## Bots Building Bots?

Eventually, as the technology improves and the telemetry deepens, the digital labor charged with managing automated processes might be able to not only monitor, maintain and repair other bots – it might be able to actually build better bots to perform the tasks even more efficiently.

“It’s not too much of a leap from bots that maintain themselves to bots that build themselves,” Engel said. “And from there, now we’re talking about exponential growth of bots that need to be maintained. I think we’re pretty close to that.”

“When you understand the way that these technologies all fit together, we’ve spent years in what’s referred to in the industry as ‘business process management notation,’” Gross said. “And so, those constructs absolutely drive the ability to automatically generate bots. And we’ve been doing some of that in our labs.”

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**We’re looking forward, and this future isn’t four or five years away. It’s easily two years away.”**

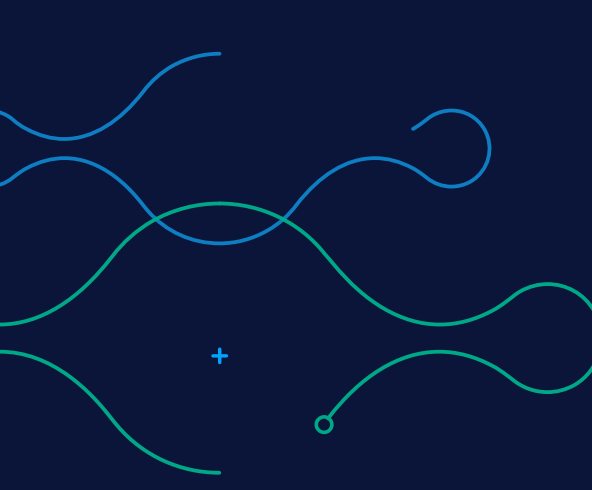
—Frank Casale

It is not a stretch to envision 50% or more of processes being managed autonomously by 2025 – or sooner.

## The Next Generation?

The benefits of automated bot management are only now beginning to be realized. ChoiceWORX anticipates broader adoption as the merits of the RPA-AI marriage become better understood.

“Right now, people are spending a good amount of money on maintenance and extreme non-core, non-strategic resources,” Casale said. “And the more forward-thinking enterprises will have the benefit of focusing on what counts and not getting distracted with (maintenance) efforts that are labor dependent and (disruptive). Companies will become a lot more efficient. We’re looking forward.”



# CHOICE WORX

Robotic process automation is here to stay, but the rush to adoption has left many organizations vulnerable to growing pains inherent to emerging technology.

The challenge: reducing labor costs and loss of productivity associated with maintenance and repair of the automated system. The solution: an AI-fueled, automated management platform that proactively monitors the ecosystem and preemptively performs updates or fixes faults. As PwC found, ChoiceWORX is the only tech company with the combined RPA and AI experience and technical know-how to provide that kind of innovative software.

[Request a Demo →](#)

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