



## Technology & Suppliers

# Automation Anywhere: Tackling RPA at scale

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Automation Anywhere, one of the RPA technology market's leading vendors, offers a growing suite of tools to drive digital operations at scale.

**MWD Advisors** is a specialist advisory firm which provides practical, independent industry insights to business leaders and technology professionals working to drive change with the help of digital technology. Our approach combines flexible, pragmatic mentoring and advisory services, built on a deep industry best practice and technology research foundation.

## Top takeaways

# 1

### On a fast-growth trajectory

Automation Anywhere was founded in 2003 by current CEO Mihir Shukla (formerly of Kiva Software, Netscape, Infoseek and OmniSky) and several colleagues. Initially a provider of macro-based desktop task automation tools, Automation Anywhere has evolved into a leader in Robotic Process Automation (RPA) with over 1,100 customers across over 90 countries, an overall annual growth rate of over 100% and a subscription revenue growth rate of around 150%. It now has 1,000+ employees, and in July 2018 it secured \$250m of venture funding from New Enterprise Associates and Goldman Sachs.

# 2

### Consistently adding capability

Automation Anywhere Enterprise provides the core of Automation Anywhere's proposition, but recent years have seen the company consistently add capabilities around this core. IQ Bot adds machine learning-powered document classification and data extraction; Bot Insight adds operational and business analytics; Bot Farm adds dynamic operational scaling; and Bot Store adds a catalogue of over 400 pre-built automation components (and growing all the time).

# 3

### Built for scale

Automation Anywhere's overall portfolio excels particularly in large-scale implementations. Not only do Bot Farm and Bot Insight provide key capabilities for managing operational scale; but IQ Bot enables your implementations to capture more 'upstream' automation value by automating unstructured document processing, and just as importantly, core capabilities of Automation Anywhere Enterprise support project and program scale with support for artefact reuse, versioning, rollback and more.

## Automation Anywhere: from desktop macros to enterprise RPA

Automation Anywhere was founded in 2003 by current CEO Mihir Shukla (formerly of Kiva Software, Netscape, Infoseek and OmniSky) and several colleagues. Initially a provider of macro-based desktop task automation tools, Automation Anywhere has evolved into a leader in Robotic Process Automation (RPA) with over 1,100 customers across over 90 countries, an overall annual growth rate of over 100% and a subscription revenue growth rate of around 150%. It now has 1,000+ employees, and in July 2018 it secured \$250m of venture funding from New Enterprise Associates and Goldman Sachs.

As is the case with most of the RPA vendors, the banking and financial services sectors form the backbone of Automation Anywhere's customer base. However the company also has significant clusters of customers across other industries – including telecoms, logistics, high technology and energy.

### Investing to tackle automation at scale

Automation Anywhere's flagship product is Automation Anywhere Enterprise – a RPA platform offering a variety of tools to help organisations develop, operate and manage RPA bots that automate data entry, data gathering and other repetitive, routine tasks usually carried out as part of high-volume, repetitive work (for example, service fulfilment work in call centres, shared-service centres, and back-office processing environments). Automation Anywhere Enterprise bots can add value both in unattended (server-based, lights-out operation) and attended (desktop-based, interactive) deployment configurations.

In addition, Automation Anywhere offers a number of other value-adding products: IQ Bot adds automation capabilities based on machine-learning algorithms, particularly useful for working 'upstream' of regular bots in order to identify, classify, extract data from and correct errors in unstructured data; Bot Insight provides a specialised operational and business analytics capability; BotFarm enables you to dynamically manage volumes of work with auto-scaling pools of Bots; and Bot Store provides an 'app store' for automation content and services.

One other particular noteworthy capability that Automation Anywhere brings is its highly-developed customer success programme, A+. The company has a very strong focus on developing and maintaining a 'customer first' culture, and its fast-growing Customer Success Management function is measured purely on customer satisfaction (not, for example, on subscription renewals).

## Inside Automation Anywhere's offering

In this section we dig deeper into the features and capabilities of Automation Anywhere's product portfolio, as well as providing licensing and pricing information.

### Key elements

#### Automation Anywhere Enterprise

Currently on V11, Automation Anywhere Enterprise provides the 'backbone' of Automation Anywhere's overall RPA proposition – offering a set of tools that address all aspects of the automation lifecycle:

- **Bot Creators.** Automation Anywhere's automation development environment includes three different activity recording options, as well as a Task Editor:
  - **Smart Recorder.** This recorder is designed to work with rich client UI technologies, and captures user actions across technologies including HTML, .NET, Windows Presentation Foundation – WPF, Java, Flex and Silverlight. It enables designers to 'capture' and represent the binary objects used by these UI technologies, and read and write their properties within the Task Editor (see below).
  - **Screen Recorder** (previously known as Standard Recorder). This recorder is designed for straightforward situations where an automation needs to replicate mouse and keyboard interactions with standard Windows applications. An important restriction – because Screen Recorder works by referring to UI elements based on their screen coordinates – is that playback of Screen Recorder recordings only works if UI windows and elements are positioned exactly as they were when the recording took place.
  - **Web Recorder.** This recorder captures actions across standard web pages, and works by referring to elements based on the inherent structures in web pages – so recordings remain valid even if elements move around a page or are styled differently.
  - **Task Editor.** This drag-and-drop tool provides a palette-and-canvas environment where automation designers can either enrich definitions created by the three Recorder tools, or create automation task definitions from scratch. You define end-to-end Automation task definitions by first selecting and sequencing individual Commands to create Task Actions (an example Task Action might be 'Get customer data from CRM'), then by connecting Task Actions together. Automation Anywhere ships a set of over 650 predefined Commands for common actions (for example: driving the mouse and keyboard, working with local files and folders, handling errors, working with the local Windows Clipboard, and providing task control structure).
- **Bot Runners.** In its simplest configuration, Automation Anywhere users can elect to run tasks immediately, or schedule them, on their own desktops. In more sophisticated configurations, where tasks are run in unattended mode, Automation Anywhere clients are deployed to Bot Runners within Windows virtual machines running on Windows Server instances. Bot Runners are then connected to work queues, taking tasks from their queue(s) as bots complete work and become ready for more. Administrators use Control Room (see below) to set up and manage work queues, connecting them to Bot Runners across servers and virtual machines.

- **Control Room.** This is a centralised management environment that administrators can use to deploy, monitor and control Automation Anywhere bots across Bot Runner instances. Each Control Room instance is associated with a repository where bot definitions are versioned and stored; you can, if you want, install multiple Control Rooms on separate server environments (for example, providing environments for development, testing, staging and production). In this case, administrators have access to tools that help promote bot definitions from one environment to the next. There's also a dashboard providing an overview of operational metrics (infrastructure utilisation, bot usage, queue status and so on) and, optionally, business analytics (see *Bot Insight* below). With appropriate permissions, administrators can also explore the activity history of individual bots and schedule tasks; a built-in secure credential vault enables permissioned users to manage the security details that individual bots use in their execution to login to existing applications and systems (there's also third-party certified support for the popular CyberArk credential vault as an alternative).

Where object-based capture of UI elements isn't possible (for example, where applications are presented via Citrix, Windows Terminal Server, or use legacy interactive web application technologies like Flex) Automation Anywhere provides the ability to capture and drive UIs using an Intelligent OCR technology called AISense. Automations using this technology are adaptable in the face of UI changes (for example if form structure or UI element placement changes).

Recent Automation Anywhere Enterprise releases have seen the company focus particularly on features and capabilities that support large-scale RPA operations. In particular it's improved support for bot lifecycle management, with the ability to run separate development, test and production Control Room instances with their own repositories, and migrate bot definitions and all their dependencies (input and configuration files, local reference data, and so on) across those instances. Access to these capabilities, as well as to the broader set of administration and repository management functionality, is now more tightly controllable through fine-grained role-based access control (RBAC), which ensures that only people with the relevant permissions can, for example, promote a bot definition from a staging environment to production, view a given dashboard, correct a problem or reconfigure a work queue.

Support for high availability of production environments is also improved, with the ability to create high-availability deployments of both Control Room environments, and of individual Bot Runner instances on Windows virtual machines.

## BotFarm

Licensed as a separate product but integrated with Control Room, BotFarm extends Automation Anywhere Enterprise's workload management functionality by adding dynamic bot scaling to unattended RPA scenarios. Specifically, with BotFarm as part of your installation, Automation Anywhere Enterprise's workload monitoring features can trigger new instances of unattended bots to be dynamically created, deployed, hooked up to work queues and executed when demand peaks; and can trigger those instances to be shut down and removed when demand tails off again – based on configurable policies.

## IQ Bot

Launched in 2017 and now on V6, IQ Bot is a separate product line item from Automation Anywhere Enterprise. IQ Bot implements machine-learning algorithms to classify unstructured documents, extract information from them, and correct extracted information. The behaviour of IQ Bot, rather than being designed using strict rules within Task Actions, is trained through supervised learning with human experts; for example, an IQ Bot can be trained to recognise, classify and extract information from inbound invoices. IQ Bot can also be configured to call out to third-party machine-learning services (for machine translation of natural language text, for example), if you need.

IQ Bot ships with an easy-to-use graphical training tool where users upload samples of a given document type (invoices, for example) and then define data fields they want to be identified and extracted. An initial processing pass identifies fields automatically, and provides a graphical editor for users to review the results and manually highlight fields that haven't been automatically identified – in which case these manually-specified fields are used to further train IQ Bot.

The trained IQ Bot is then deployed as a centrally-hosted service that 'regular' TaskBots can call – and when IQ Bot can't determine the information it should, humans make corrections that feed back into the IQ Bot's underlying models.

## Bot Insight

Licensed as a separate product and leveraging a leading embedded BI and Analytics technology, Bot Insight provides interactive dashboards (available from within Control Room) that help administrators and stakeholders explore business metrics and trends associated with any data flowing through the bots running as part of an Automation Anywhere Enterprise installation. Dashboards are highly interactive, enabling quick point-and-click view filtering, timeline analysis and drilldown; permissioned users can also create, customize and publish their own dashboards. Built-in Center of Excellence (CoE) dashboard provides enterprises central visibility in cost-savings, revenue growth, productivity and ROI to manage and scale their RPA program.

Bot Insight aggregates data collected from running bots according to the configuration you set. Importantly, this is both business data (for example, data about invoice values, categories or sources handled by invoice-processing bots), and operational data (about the technical performance of bots). Setting up business data collection is easy: when defining bots, you simply mark the relevant data variables as being logged for Bot Insight. Then, in operation, that data is streamed from the relevant running bots to a central SQLServer Analytics database that Bot Insight runs from.

## Bot Store

Automation Anywhere's Bot Store, launched in 2018, is an app store for Automation Anywhere Enterprise implementations. It currently contains over 400 pre-built bots that you can download and install.

Bot Store components are available with out-of-the-box automations for common actions across popular business applications (both on-premises and cloud-based) – from Oracle and Zoho to Salesforce and SAP, business process such as invoice processing and 3<sup>rd</sup> party AI platform such as Google language translation. Automation Anywhere-provided content is available free of charge; partner-provided content is licensed separately through those partners.

## Team support, versioning and reuse

Automation Anywhere Enterprise has long supported reuse in bot development, through the concept of MetaBots. MetaBots are essentially reusable bot logic blocks that you can create in the Bot Creator environment, and then leverage in the definition of individual TaskBots. You can define MetaBot parameters, meaning that one MetaBot definition can be called from multiple contexts without changing it. If you do have to change a MetaBot definition (for example, if the source system it's automating changes the structure of its user interface) then this change will be automatically reflected wherever it's used.

The Bot Creator environment can be set up with version control (handled by Control Room), in which case updates to bot definitions are automatically versioned; there's check-in/out functionality, too, so teams of bot developers can work in parallel without problems. You can also rollback to previous bot versions if needed.

### Packaging and pricing

Automation Anywhere has recently launched a 30-day free trial of its fully-functioning flagship Enterprise RPA product, and will soon extend this trial to include IQ Bot and Bot Insight.

Automation Anywhere licenses its platform elements on an annual subscription basis. Automation Anywhere Enterprise, the Control Room, Bot Runner and Bot Creator are all licensed separately. The minimum configuration available to customers today is one Control Room with 10 Bot Runners; the company works with its customers to size configurations according to the number and complexity of processes to be automated.

### Recommendation

Automation Anywhere's latest major V11 platform release has made large-scale RPA deployments much more practical, and the products that the company offers alongside Automation Anywhere Enterprise – IQ Bot, Bot Insight and Bot Farm – all have the potential to add significant value to serious, large-scale initiatives. If you're serious about delivering an RPA initiative to scale across multiple processes, systems and environments – and an initiative that will also capture and automate 'upstream' tasks relating to intelligent processing of inbound communications – then you should prioritise investigation of what Automation Anywhere has to offer.