

THE FUTURE OF RPA

Any discussion about the future of RPA must go beyond the stand-alone capabilities of the leading products from UiPath, Automation Anywhere and Blue Prism. It must also include technology from third parties like Google, Microsoft, Celaton and ABBYY. That's because the inclusion of these technologies makes the realization of Intelligent Automation more than simply possible, it makes it realistic.

Imagine a golfer standing on the tee, facing the challenge of reaching the green over bunkers 250 yards down the fairway; using only a putter, success is impossible; using a combination of driver and irons, the prospect is still daunting (particularly if you're as "good" at golf as I am) but imaginable.

In this metaphor, reaching the green represents implementing Intelligent Automation; the driver is conventional RPA products, the irons are the cognitive tools like Celaton and Abbyy and the putter represents the AI tools like TensorFlow or IBM Watson. Using one type of club is never going to allow you to get that

little white ball into the hole in the same way that using one type of automation tool is going to allow you to automate your entire business end-to-end.

Good story though this is, what the leading RPA vendors are creating in terms of Intelligent Automation can be thought of as a completely different way to achieve the same ends; by combining the cognitive and AI technologies into their RPA product platform.

Returning to the metaphor for a moment, this approach means that you can ultimately build a drone that picks up the ball from the tee, flies it down the fairway and drops it straight into the hole. By leveraging industry-leading third party AI/Cognitive technologies, UiPath and our two competitors are creating a new automation paradigm. And, you can eventually throw out those golf clubs.

WHY NOW?

So why now? Because I believe we are at an RPA inflection point. To illustrate the reasoning behind that belief, let me go back a few years to a challenge faced by Dell. Michael Dell's business model was both straightforward and revolutionary: customers could order an inexpensive computer online, and three days later it would appear at their door. However, Dell had a serious systems integration problem: namely, its legacy order processing system was twenty years old and couldn't talk to any of the modern systems and ERP that ran the rest of the business. The complexity of changing this situation was such that six straight attempts to do so had failed.

Dell also had an even more serious cost and performance problem: after process improvement, Lean Six Sigma and consolidation into offshore captive operations, it still had a thousand people doing offline order processing in low cost

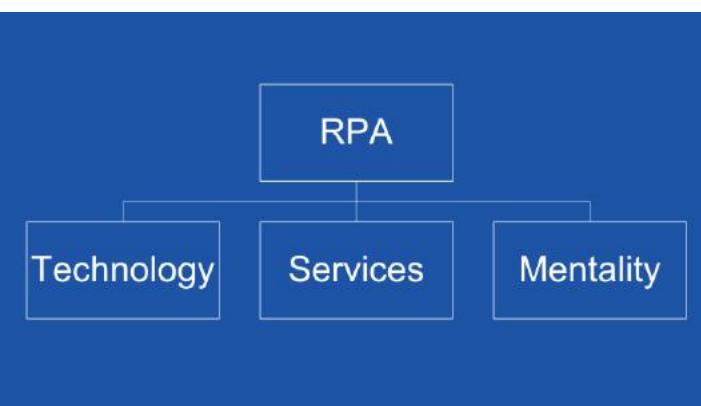
global delivery centers.

While it was apparent automation was the last remaining option, RPA was not so obvious because it was almost completely unknown at the time. Fortunately for Dell, the company I was with at the time was a pioneer in using the technology.

Applying RPA to Dell's dilemma produced staggering results: **headcount went from just under 1000 to 438 within six months; the "right first time" rate climbed from 76% to above 99% - because the robots didn't make mistakes; and product cost to Dell's customer plummeted by 35% - even after absorbing my company's implementation margin.**

Good news for the RPA industry as well, but not an unqualified success because the robots lived on Dell employee workstations; when the employees stopped working for the day, so did the robot.

TECHNOLOGY AND SERVICES



The appetite for RPA has dramatically increased since that time and I maintain there are two reasons for this surge: technology and services.

Technology: today UiPath and the other vendors deploy robots that can perform their tasks unattended. That's the first important point to remember - unattended automation. Their robots are untethered from human workdays and can deliver batch processing performance across a broad spectrum of business processes, not limited to specific ones like order

management, accounting or HR.

The second key point to remember is computer vision - technology unique to UiPath robots and unrivaled for performance in Citrix environments. Robots depend on accessing the underlying application to identify locations of screen elements and act upon them. But Citrix environments restrict access to underlying applications.

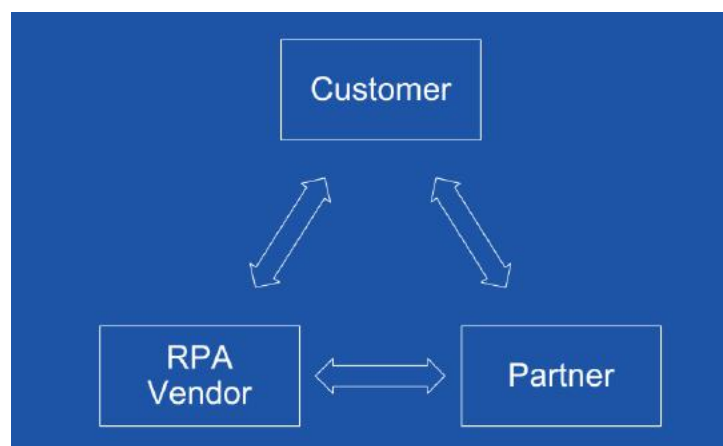
If you don't have access to the underlying application - and when (not if) the application changes, for humans it's intuitive. It doesn't matter where something is on the screen, our eyes identify it and adjust. Robots without computer vision, unable to identify and act on screen elements, must be reconfigured for each screen change. And they happen time after time, after time.

Services: BPOs have been using licenses from Automation Anywhere, Blue Prism and UiPath to increase their productivity and decrease their cost of service - and this implicit endorsement provided RPA with tremendous credibility.

Some providers have attempted to hide automation in order to widen their account margins, but the industry as a whole is beginning to understand that baking RPA into their customer solution is the only way to keep some smaller share of business.

When unattended automation first emerged, a number of industry voices said, "Processes need to be automated end-to-end.", much the same mentality as "straight-through processing" in organizations implementing ERP for the first time. And incomplete straight-through processing is a boon for robots, because organizations must manually transfer information between systems - RPA's sweet spot.

The "end-to-end" mentality is changing as business owners realize it's very often good enough to just cover up the bumps in the road. Sometimes derided as a temporary fix, many RPA early adopters are now saying to their IT departments, "You know that straight-through processing you promised, can we use RPA to fill that hole? And the ROI on doing that is so great, why are we still thinking about straight-through processing?" So, most of the activity we've seen has been bottom up, directly from customers. For example, from Shared Services operations under pressure to cut costs but having run out of Lean and Six Sigma opportunities.



WHAT MATTERS?

Our partners: Deloitte, PwC, Accenture, EY, etc. and the arguably more nimble RPA-specific consultancies like Symphony Ventures and Genfour, have suddenly woken up to the potential of this market to generate substantial revenues for themselves.

What matters?

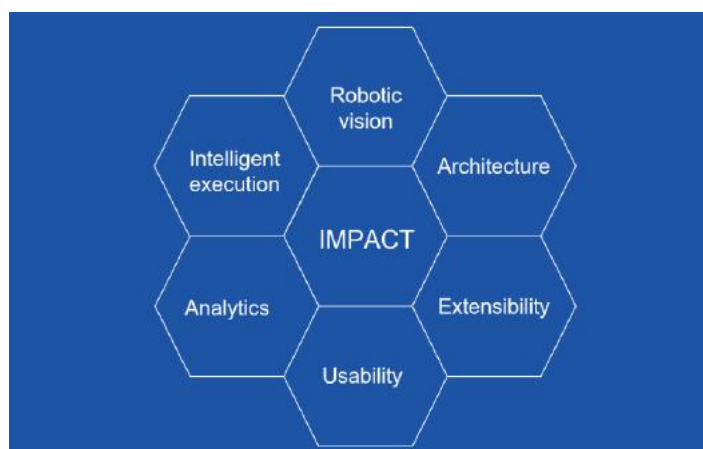


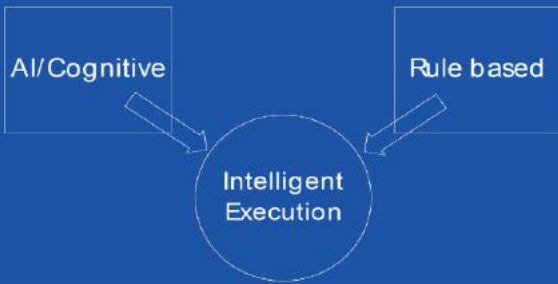
They own the relationship with the c-suites of global companies that the RPA vendors find more difficult to access. I consider it highly likely the RPA industry will see 2017 as the year this top down interest and bottom up activity meets and radically changes the landscape.

Here are the four things that matters when you're doing RPA: *Breadth* - how many processes can you automate? *Velocity* -

how fast can you automate those processes?

For example, BPOs love UiPath because our system works so well with Citrix, automating processes up to 20 times faster than our competition. *Agility* - how quickly can your Center of Excellence move and grow to provide services across the whole business? *Security* - this is important because you don't want robots to screw up and do something they shouldn't. Your RPA journey should deliver the following: *Computer Vision* - the ability of your robots to see what they need to do their job; *Intelligent Execution* - enabled by automation solutions that bring emerging cognitive and AI capabilities to your robots; *Analytics* - to illustrate this point: within Orchestrator, UiPath has Elasticsearch, an open source product that can handle vast quantities of data very rapidly indeed.





deployments. But if you add up the robots in all the operations that were described at Kiasco's RPA Congress in both Orlando and London, the sum is not much more than a couple of hundred robots.

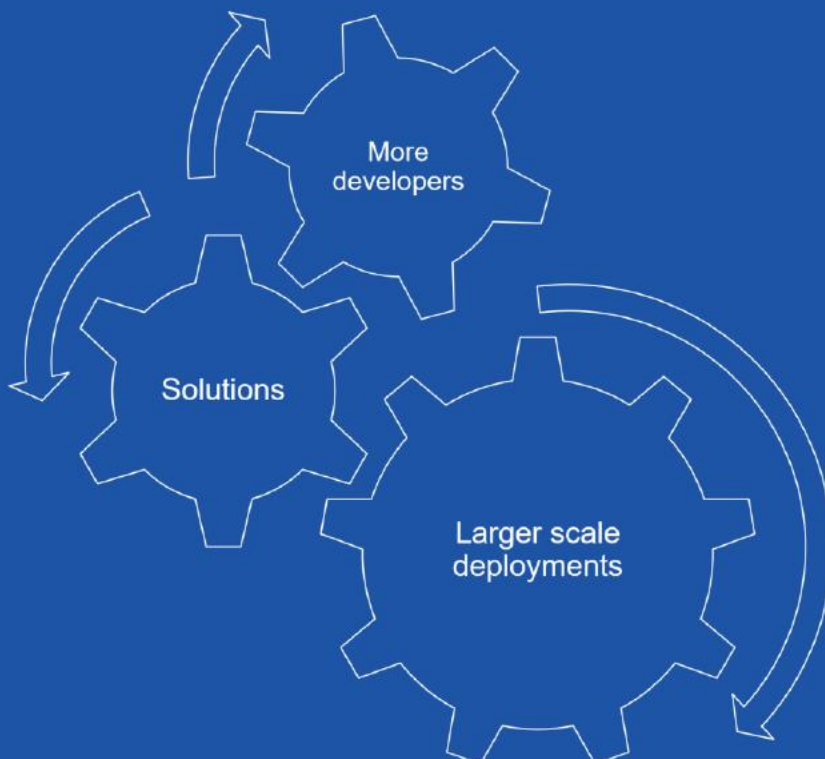
This means RPA, as a solution to reduce cost and increase efficiency, isn't as important as: what happens to the data; what's done with the data handled by either workstation or unattended robots. Why?

Because it allows you to start thinking about your operations and processes in a different way.

With few exceptions, everyone on the RPA journey wants to achieve large scale

To reach large scale implementations, perhaps hundreds if not thousands of robots, a Center of Excellence must do more than simply provide more business analysts, developers or automation leads.

It must also provide two additional pre-requisites for RPA industrialization: automation, deployment and management methodology - and change management for stable robot performance.



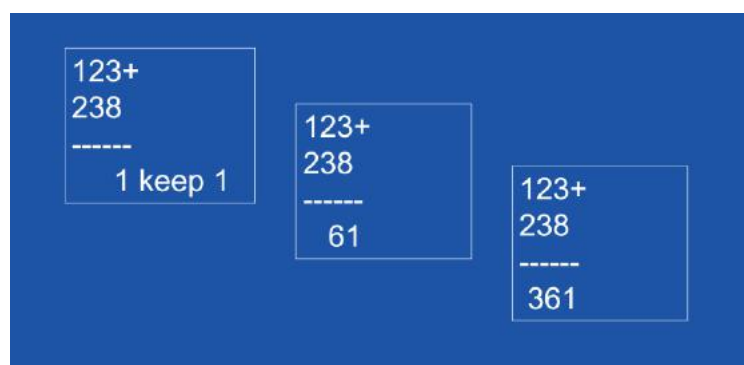
Intelligent Execution is where AI/Cognitive plays an essential role in robotic process automation. That's because robot capability is currently centered around rule-based learning.

In essence, it's following rules - much like humans much of the time. In order to be intelligent, the rules-based behavior has to be enhanced by AI/Cognitive in order to handle exceptions and adapt to changing circumstances. Again, much like humans.

As I've already pointed out, the AI and Cognitive, Natural Language Processing, Machine Learning are sourced from third parties and built into RPA products by separate organizations. These tools are being created by Microsoft, Google and IBM. They're releasing Open Source APIs for those capabilities and its causing a democratization of cognitive capabilities. Within the next few months I predict we'll see the diminution of pure-play cognitive

companies like WorkFusion as the leading RPA vendors - Blue Prism, Automation Anywhere and us - begin to build those APIs into our robotic technologies. And for UiPath, by building those technologies into our robots, we're creating Intelligent Execution.

It's important to remember that most of the activities we've heard about in terms of RPA follows rules for a very fundamental reason: much of human learning - and subsequent behavior - is rules-based as well. So the rules-based nature of RPA shouldn't be considered a weakness or a liability, any more than we would consider human behavior in that way. It's simply an accurate reflection of the world around us.



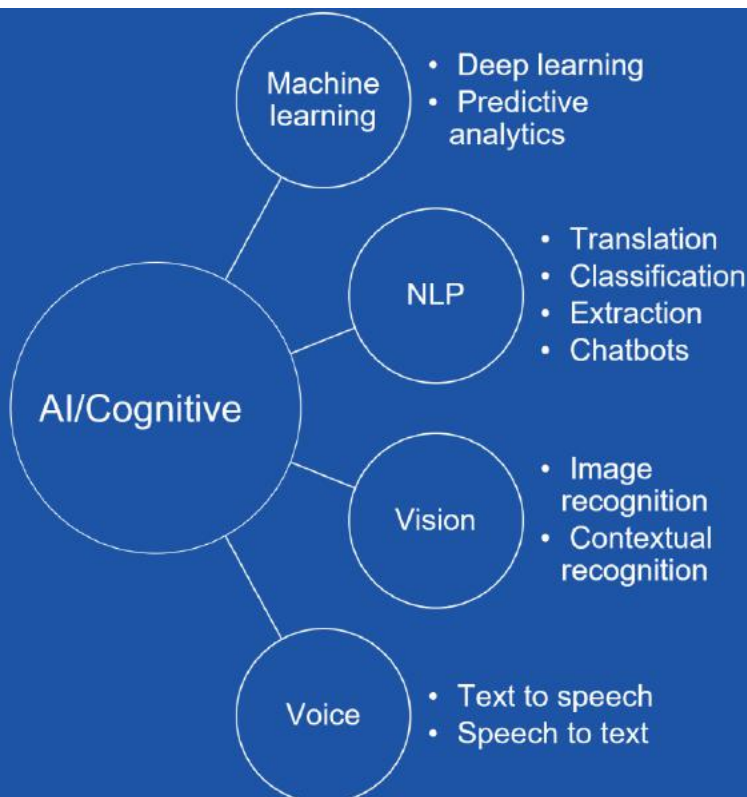
AI/ COGNITIVE

Granted AI and cognitive allows a much wider scope of business processes to be within scope, but there's some significant complexity and issues that result when those technologies are used in automation. For example, debugging machine learning is very difficult.

Let's revisit the four things that matter in RPA and talk about how we're building them into the UiPath solution platform. For example, *Breadth*: let's look at unstructured data. Our development team is currently working with ABBYY, originally an OCR company, to build their technology into our

platform. This offers customers, who cannot for regulatory reasons, have their data in the Cloud, an on-premise alternative to Celaton's excellent inSTREAM product to deal with unstructured data.

Accuracy's been mentioned by way of *Computer Vision*, the UiPath technology that delivers unrivaled capability for robots to precisely see what's on the screen. Robots without computer vision often break because they can't adjust to screen changes in element location, image colors, screen size and resolution.

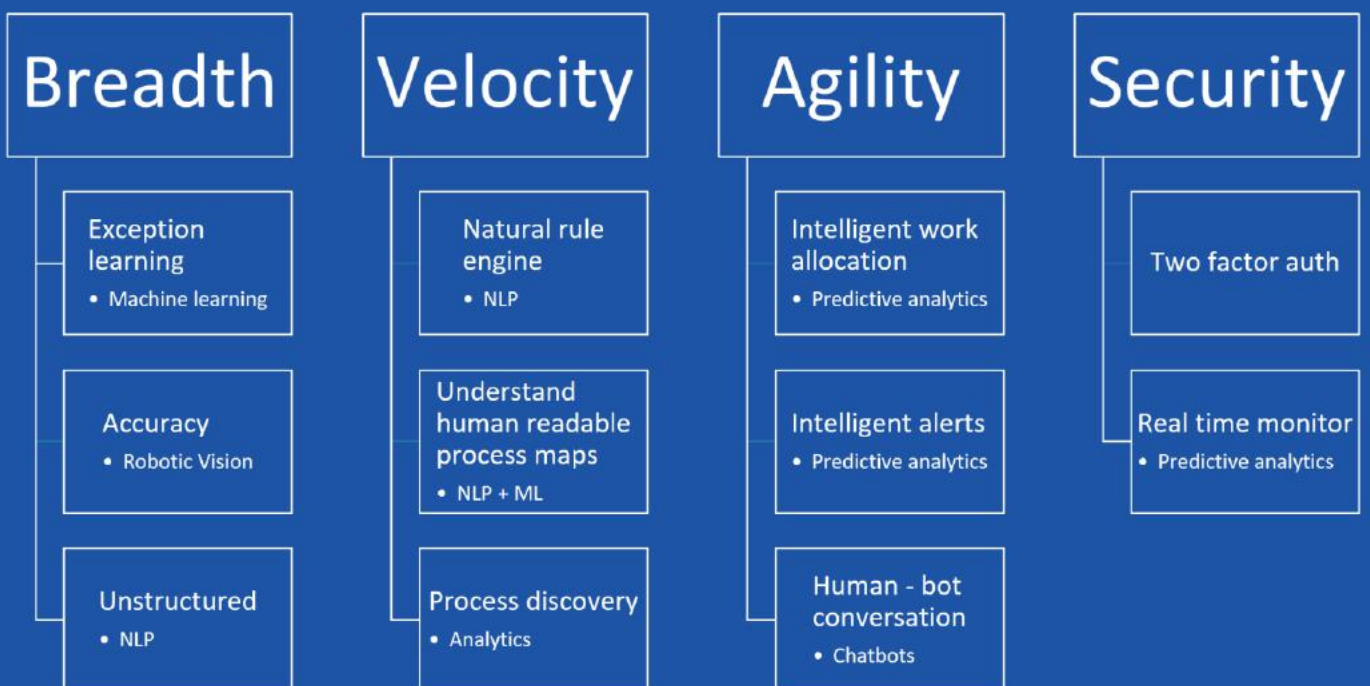


Analytics: remember what I said about data? The data that many companies have within their organizations is massively valuable. This is particularly true for banks, who find data to be game-changing for operations, relationship management and regulatory reporting.

I'll leave with this. The future of RPA has everything to do with software and software success primarily rests on two attributes: an open platform and enterprise security. UiPath architecture is not open source but it is an open platform, built on .Net - the same software that

has created SharePoint and Visio. Which means it's intuitive to use, highly extensible and allows you to build (and own) your intellectual property on top of our platform; this is a key differentiator.

We expect our partners, our consulting companies, our BPO partners and our customers to build their own in-house capabilities. The ability to do that means they can scale up much faster and do more interesting stuff - stuff we haven't even thought about. However, we have worked hard to provide the resources to make building in-house IP as easy as possible.



COMMUNITY EDITION

This work has paid off in our Community Edition, launched just six months ago and completely free to small organizations, not-for-profits and individuals; after six months over 10,000 community members are using this RPA product to learn, build and automate.

At the start of Q2 UiPath will launch a massive on-line learning curriculum which will make our complete line of training resources available for under \$15.00. Keep in mind the most successful on-line learning course - with 1.2 million sign-ups - has been Stanford University's machine learning. At UiPath, considering the draw

of RPA, we're anticipating anywhere between 10s and 100s of thousands of people to sign up.

The goal of the course is to enable people to go out and automate something, creating what we believe will be thousands of mini-POCs around the world. Then UiPath and our partners can say to their c-suite clients, "You've already got this expertise within your organization - so let's bring it all together." And that, ladies and gentlemen, is the future of RPA.