UiPath
Robotic Process Automation

RPA AT THE START OF THE FOURTH INDUSTRIAL REVOLUTION

As we cross the bridge from the traditional way of handling business processes to adopting automation throughout entire enterprises, we cannot help but notice the positive structural impact it has on both businesses and the workforce.

While some journalists and analysts have announced 'The End' for some employees and trades, we strongly believe RPA and other automation tools are merely aiding companies and their staff become more productive, better equipped to handle time-consuming and tedious tasks, and allow for better customer-centered services.

The BPO industry has particularly been affected by this robotics angst. Is there a right way to approach automation? How will companies be able to assess its impact and set out new roles for their employees?

WHY NOW?

RPA is crossing between inflated expectations and real-world productivity. It is moving from the innovators and early adopters to early mainstream customers. This means that the window for first mover advantage in any particular industry is closing.

As Michael Lim of IBM said at a recent conference at which I was presenting, RPA is not about the technology, it is about the outcomes. Indeed, this has been demonstrated by Alex Balbontin of Credit Suisse who proved to his board the value of RPA in just nine months.

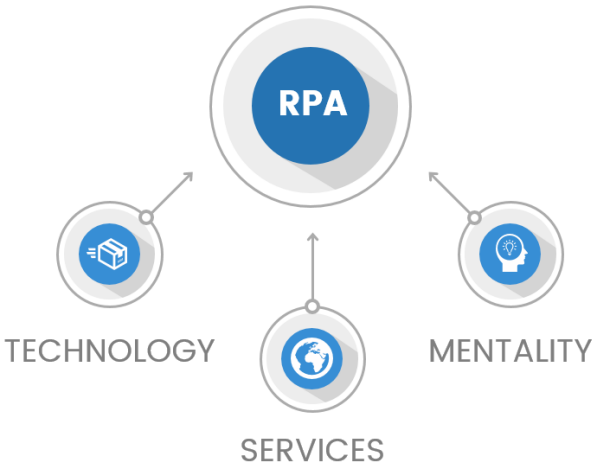
140% COMPOUND ANNUAL GROWTH RATE

I believe that we are at the start of the fourth Industrial Revolution.

In 1765, James Hargreaves initiated the first by inventing the spinning jenny which did the work of eight people, and it culminated in the rise of steam power.
In the first 15 years of the 19th century, steam power grew by 140% compound annual growth rate (CAGR), which is faster than the rise of RPA, according to Sarah Burnett, Everest's lead analyst, who recently predicted 90% CAGR for RPA in the next four years.

The second Industrial Revolution was characterized by mechanization and epitomized by Henry Ford who opened his first assembly line in 1913.

Also, the third started in 1972 when Intel produced the first 8-bit processor, which heralded the dawn of the digital era in which we now live. To put RPA growth into perspective, last year we grew UiPath's revenues by 400%, and we already doubled that in the first five months of this year.



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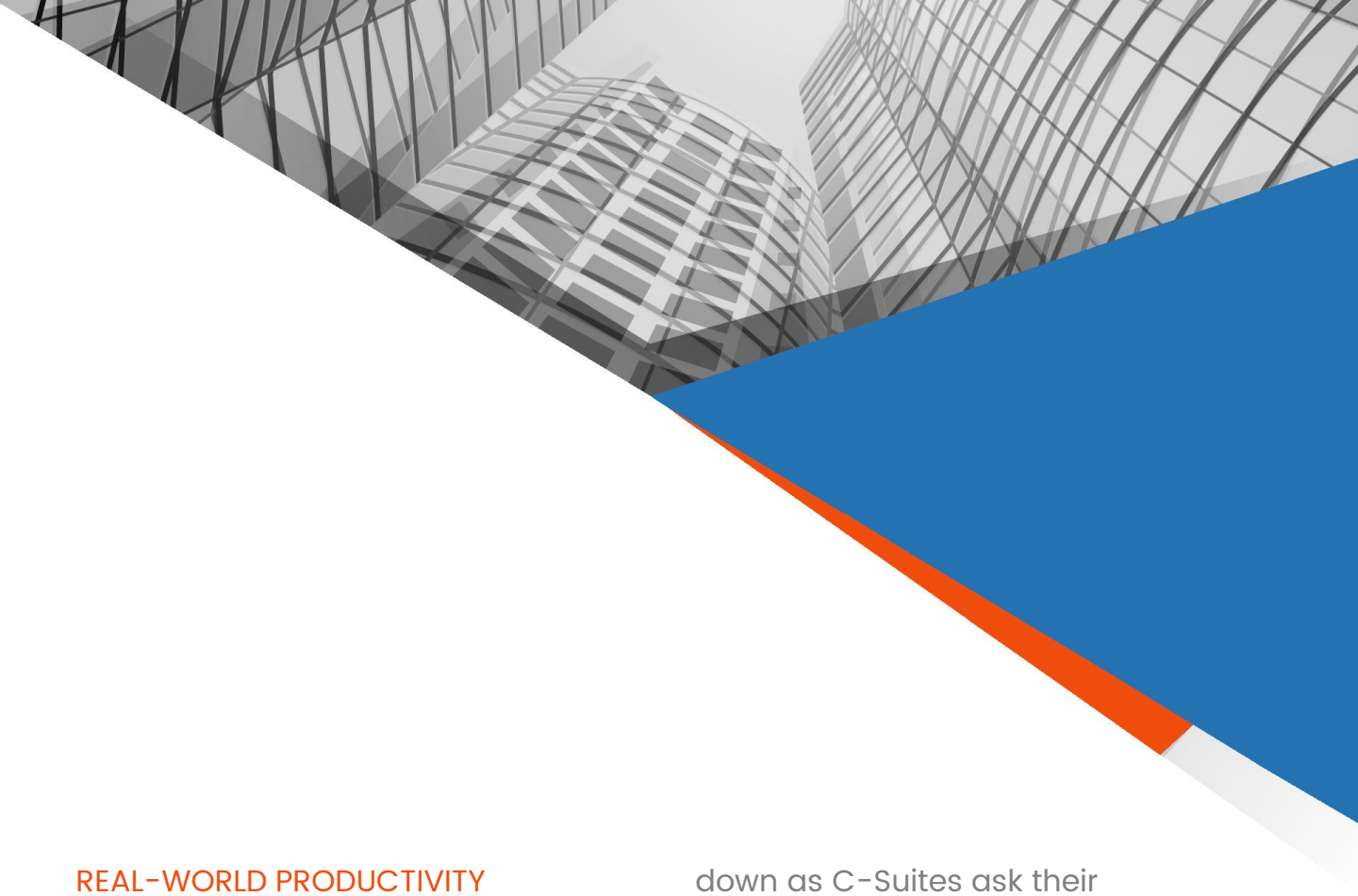


REAL-WORLD PRODUCTIVITY

RPA growth is driven by:

- technology innovators in virtualization, cloud, mobile, analytics and robotic vision;
- maturing services by BPOs, shared service leaders, process optimizations and re-engineering like Lean Six Sigma;
- a changing and much more pragmatic mentality moving from a purist mindset—i.e. 'we need to automate end-to-end'—to 'it is good enough', as even partial automation yields high ROI and improved performance.

As an example, Mitchell Kaufman of Société Générale said that the partnership between operational excellence and RPA is having a dramatic positive impact across the whole bank.

5% GLOBAL MARKET PENETRATION

Regarding how far automation has spread until now, Cathy Tornbohm, Gartner's leading analyst in this area, has estimated that global market penetration for RPA is currently at 5% for enterprises with revenues in excess of $1bn.

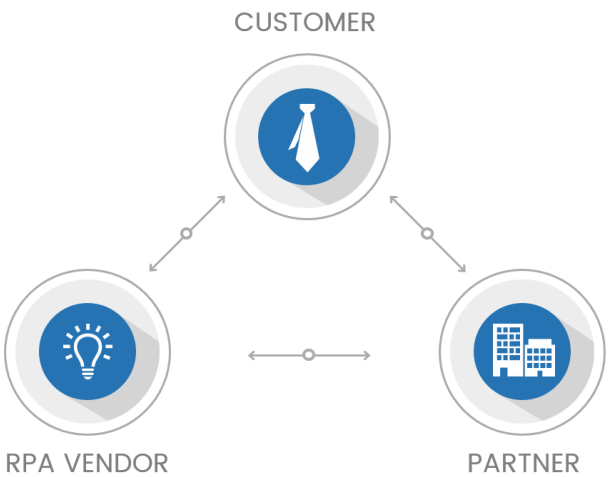
It has grown bottom-up so far, but now it is also starting to grow top-down as C-Suites ask their consulting partners and advisors, "What are these robots about and what impact are they going to have on my business?". This is driving adoption more rapidly as the C-Suites gain a better understanding of the value of automation.

When RPA adoption reaches 15-18% it will become ubiquitous very quickly. Why? If you read *Crossing the Chasm* by Geoffrey Moore you know that for any new technology, this is where it moves, from the early adopters into the mainstream. Cathy and I think that this will happen in the next 12-15 months.

WHAT MATTERS

Four things matter most in RPA product technology. What type of processes (whether attended or unattended) and how many of them can be automated? How fast will the RPA tool automate these processes?

How easily and effectively can you operate and manage the implemented solution, particularly when your underlying technology platforms and applications get updated? And, finally, does the technology meet enterprise-grade security standards?
We will come back to these in a bit.



DO I NEED HELP?

For UiPath, we always recommend that our customers use a partner to help implement robotics. RPA is easy to understand and easy to pilot, but it is not easy to implement at scale.

Think of it as a project without an expiration date. You need to think ahead to be able to take advantage of the full potential RPA can deliver throughout your organization.

To implement it sustainably, you need to create a solid foundation.

Consider more than one technology, integrate siloed operations, application and data, adapt and scale. Therefore, a tripartite relationship between software vendor, customer and implementation partner allows the customers to dramatically reduce their time to value.

INTELLIGENT EXECUTION

To be human-like, RPA must employ both rules and AI/cognitive abilities. Rules-based activities are a natural way of operating—whether driving a car or preparing breakfast. AI and cognitive abilities enable RPA to apply varying levels of heuristic problem-solving.

Combining the two into intelligent automation begins to close the human-robot gap. This is where UiPath sits.

HOW CLEVER IS AI?

AI is being democratized by the likes of Google, Microsoft and IBM. Raw 'intelligence' is currently sitting somewhere between a mouse and a chimpanzee, and it has taken many years to even get to this point.

As things accelerate, the time it takes to go from 'idiot' (you can choose your own climate change denier as an example) and 'genius' is startlingly short; by the way, that 'WTF' stands for 'What's the future', just in case you are wondering.

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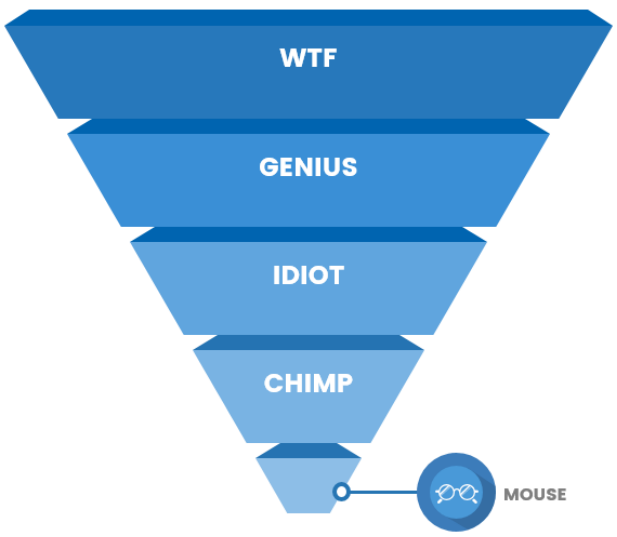

HOW WILL AI IMPACT RPA?

AI and cognitive will transform what matters most in RPA products. Karen Pascoe of MasterCard has estimated that the move from manual intelligence to Artificial Intelligence is still 3-5 years out.

This is not what we are seeing. To give you a couple of examples:

- We have IBM Watson on premise with SwissRe feeding our robots (first time ever);
- We are working with ABBYY to turning semi and unstructured data into structured data;
- We are using Elasticsearch and predictive analytics to help banks meet their regulatory compliance requirements;
- We are working on self-learning rule engines, which will watch what the human user does and will build the robot without recorders or any human interaction;
- We are creating human-readable process maps using machine learning (ML) and natural language processing (NLP) to stimulate reuse of robot artifacts;
- We are creating chatbots using NLP so that human users can tell the robot what to do with business exceptions, and using Machine Learning, the robot will remember this for the next time.

BREADTH	VELOCITY	AGILITY	SECURITY
Exception learning	Natural rule engine	Intelligent work allocation	Two factor authentication
Machine Learning	NLP	Predictive analytics	
Accuracy	Understand human readable process maps	Intelligent alerts	Real time monitor
Robotic vision	NLP + ML	Predictive analytics	Predictive analytics
Unstructured	Process discovery	Human-Bot conversation	
NLP	Analytics	Chatbots	

HOW DO YOU SCALE?

Customers have found that to move from pilots to sustainable large-scale automation, they require three things. First, to get the right people doing the right things the right way (i.e. team building and methodology) by building a Center of Excellence. Second, to support business operations with effective change management (some by leveraging their existing Lean Six Sigma investments).

Capitalizing on early successes and executive sponsorship to increase deployment scale is also a must. And finally, scaling. In order to achieve this, you need to take the transactional people of today and make them the knowledge workers of tomorrow.

The Center of Excellence, in particular, is key because it ensures that RPA is implemented effectively into the entire enterprise and eases scaling significantly. First, you must set up the robotic operating team with clear and well-defined roles for sponsors, champions, change managers, developers and business analysts.

At the same time, within the CoE, you must focus on the development environment that supports the implementation, taking into consideration the robot's configuration, the maintenance and support, the performance and connectivity. Next, you have to create a sustainable governance model that determines what processes will be automated and prioritize them. Don't forget to team up the business side with the IT side.

HOW DO YOU GET TO BE FUTURE PROOF?

To really be future proof, it is actually quite simple. Based on the past twenty years of software history, you require two things: an open architecture and standards that support ease of extensibility—in other words, allowing customers and partners to build their own intellectual property on top of the automation platform. You also need a large, engaged and innovative developer community who likes using your product and advance the practice around it.
Since we launched our free Community Edition last year, we now have a group of over 13,000 such developers and we are expecting that number to rise to near 100,000 by the end of 2017 due to the UiPath Academy.

The Academy guarantees that companies implementing or scaling UiPath's automation solutions will always have access to a large pool of experts and developers specialized in our technology.

WHAT OF THE FUTURE OF OUTSOURCING?

While it is clear that certain services and functions will never be automated, BPOs and other IT outsourcing companies will inevitably consider adopting automation, if they have not done so already. This will leave room for developing more customer-centered initiatives, but this means that the right employees will have to be trained and prepared to take on new roles and responsibilities.

From our experience with both customers and partners, we have noticed that an increasing number of BPOs have seen the window of opportunity and have begun a positive transformation process. Furthermore, as organizations increasingly see the value of (and rapid ROIs afforded by) automation, a significant number of outsourcing enterprises will become outlets that provide automation solutions.

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