

EY's Robotics Automate Tedious Tasks, Saving Time For Higher-Value Activities

Ernest & Young
Best Advance in Unique HR or
Workforce Management Technology
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Company Background



Company At-a-Glance	
Headquarters	New York, NY
Year Founded	1989, through the merger of Ernst & Whinney and Arthur Young & Co.; Oldest component from 1849.
Revenue	\$13 billion in the US in FY2017
Employees	46,482 in the US in FY2017
Global Scale	Ernst & Young LLP (EY US) is a member firm of Ernst & Young Global Limited, which has member firms providing professional services in more than 150 countries and 700 offices
Customers/Output, etc.	Assurance, tax, transaction, and advisory services.
Industry	Professional Services
Website	www.ey.com

Value Proposition

The EY organization's latest technology comes in the form of robotics, which are used to automate multi-step, detailed processes that are repetitive, time-consuming and quite tedious for humans.



The EY US Tax practice, serving thousands of clients in the United States and internationally, is comprised of talented professionals working in various capacities. In addition to client-relationship building and strategic thinking, many tax employees spend hours a day on the repetitive tasks and data entry necessary for tax returns and other processes.

Use of robotic technology is fairly new in the tax function and uncharted as a solution to those tasks. During the past two years, tax professionals at EY US documented the steps taken to identify the processes ripe for automation. As a group, they added significant opportunities for saving time and effort, yielding benefits for EY and their clients.

In partnership with EY's technology team, the tax practice used robot technology ("bots") to do what they do best: mimic human behavior in a computer-based process. In this use of robotic technology, the tax team freed up many thousands of hours of time now spent on higher-level activities such as strategic thinking, collaboration among teams and across service lines and relationship management among many others; all higher-value activities which humans are uniquely qualified to handle.

Accordingly, EY US also modified its learning and professional development model to equip professionals with skills and competencies to keep them relevant as the needs of businesses evolve (e.g., data analytics, project management, negotiation techniques, creative problem solving). The tax professionals now have more time to build meaningful careers with greater opportunities and capacity to pursue more value-added work that allows them to learn and grow while better serving their clients.

To showcase the benefit of this application of robotic process automation (RPA), Tax Project Manager Ainsley Phillips speaks of the positive shift the team experienced in implementing it. Phillips joined the EY US tax practice after 18 years in financial services and computer science. With a combination of collaborative and technical skills, Phillips plays the liaison role between tax-technical professionals and the robotic-technology programmers. She gathers requirements and standardizes processes for automation.

"The bots act as another colleague that works with you; they take away redundancies of the work, enabling our tax professionals to do higher-level work. The more we educate and communicate across teams on the benefits of RPA, more teams take advantage of this opportunity. As our personnel become more involved with RPA and see that the bot doesn't take away their human element, they see the benefits of automation. The immediate benefits are standardizing our processes, creating efficiencies, and opening communication channels. With freed-up time, employees have the opportunity to take



on more complex analytical work and improve their skill sets and overall career.” – **Ansley Phillips**, Tax Project Manager

Another EY US professional, Sajeev Nair, has extensive knowledge of RPA processes and has played a large role in implementing robotics in EY US’s Tax practice.

“At EY, most people are excited about RPA and want to use bots to cut down many of their manual tasks. They see RPA as helpful in allowing them to focus on higher-level tasks, using their expertise better. There is so much excitement over this benefit that many people want to learn how to program bots themselves. This technology gives them an opportunity to learn and grow and make more of a difference.” -- **Sajeev Nair**, EY US professional

Similar experiences have been shared by many EY US tax professionals. Excitement for RPA continues to grow, and the benefits have unlimited potential.

Product or Program Innovation

While a relatively new technology in professional services, RPA is being implemented by many organizations around the world. EY US is using the application as a workforce management tool designed to increase the capacity of the tax department and enable professionals to spend time pursuing more meaningful tasks.

To do this, it is necessary to identify a mundane, repetitive task to be automated. While someone can quickly point to the spreadsheet-based work that takes up hours of their energy on mindless tasks, programming these tasks into a bot takes strategic thinking. First, professionals must document the exact process, including all the files required — sometimes in the thousands. It’s critical to have several people review the process documentation to provide consistency and standardization. For example, one person may work in a different sequence from another.

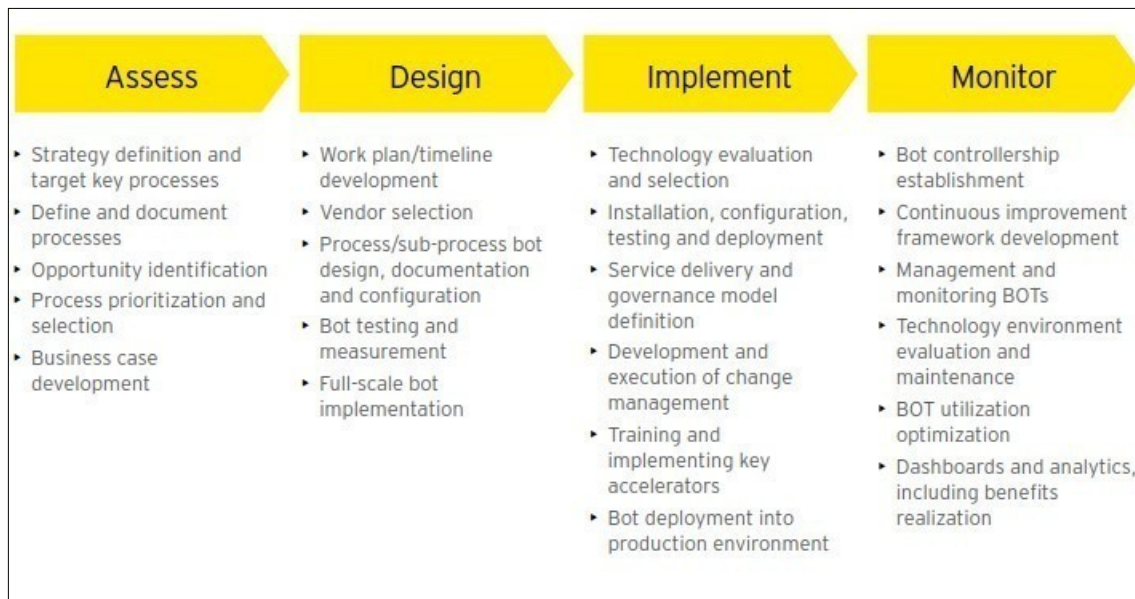
EY US’s technology team works with the tax professionals to program the final, standardized processes into the bots. The bots mimic the exact data-retrieval actions, keyboard clicks and copy-paste steps. Once programmed, the bots operate at dozens or in some cases, hundreds of times the speed it typically takes a human, and bots never fatigue, make unintended mistakes, take vacation or sick time.

By mimicking specific aspects of human action, RPA enables EY US to automate high-volume, complex, multi-step data processes as it captures and interprets existing applications, manipulates data, triggers responses and communicates with other systems.



Virtual software bots with authorized-access rights perform the activities of their human predecessors by moving through and across the relevant applications.

Figure 1: Process used to set up automated tasks



Source: EY

In messaging and positioning the RPA software to the tax team, it was emphasized that the bots become a part of the team, working directly with their human teammates to share the workload. After several months, some professionals likened the bots to “colleagues” or “friends” who help with the tasks they used to dread.

Of course, bots still require oversight and management of the processes to confirm that everything runs smoothly. When managed correctly, the bots are giving back thousands of hours for the team to use in more valuable ways.

Unique Differentiators

Many companies are focused on process efficiencies and streamlining tasks to save time and resources. As forward-thinking leaders in the talent space, EY US puts its talent strategy first and technology innovations follow. EY US leaders want professionals to be set up for success in the workforce of the future, a future where robots are the norm, many processes no longer need human interaction, and technology contributions to workflow grow at a pace faster than imaginable. With the needs of the business world

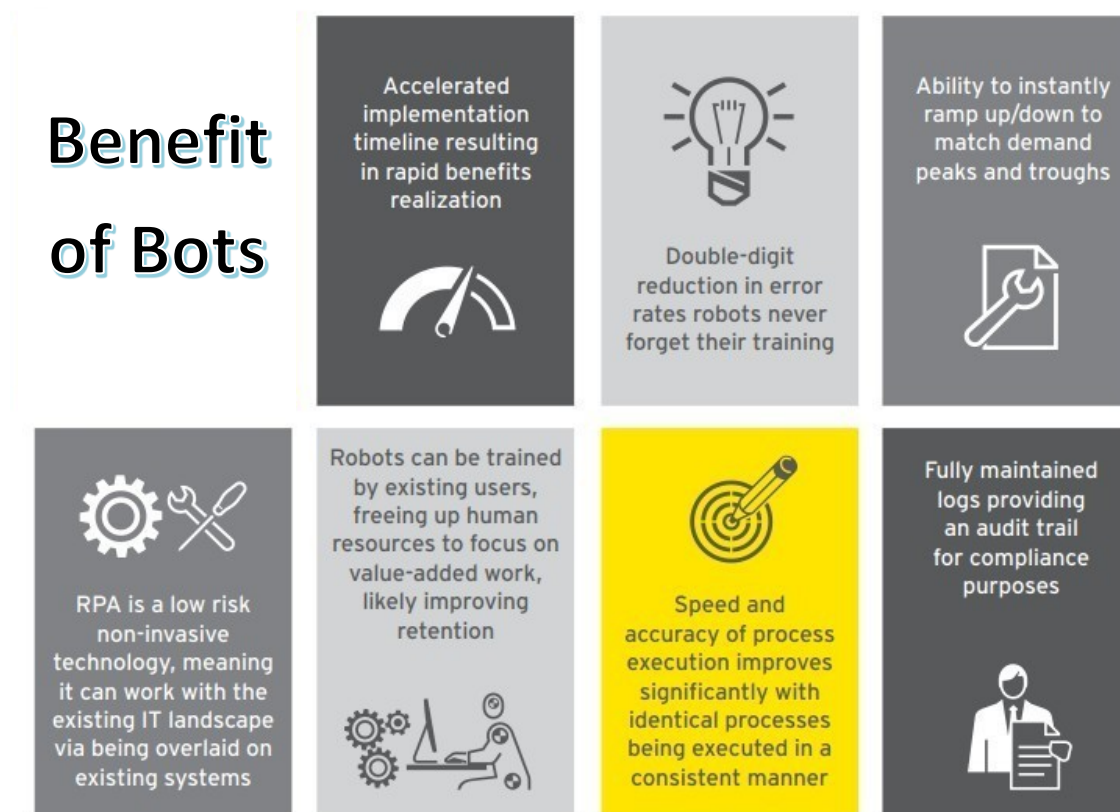


changing fast, EY US takes great pride in building its talent to be successful in the present and the future.

While EY US implements many strategies to accelerate the skills and competencies of its professionals, the firm also embraces the tools that enable those strategies. EY US leverages RPA in a way that enables the workforce to spend freed-up time building skills, having better conversations, and pursuing more-valuable work.

Rather than using off-the-shelf technology, EY US leveraged internal-technology teams and promoted hands-on involvement from the tax team. This hands-on exposure gave the tax team a stake in the outcome of the change and allowed them to expand their own awareness and expertise in a growing technology.

Figure 2: Change Management Communication Launching RPA



Source: EY 2018



Areas where EY US has automated tax processes include:

- Federal tax compliance and planning.
- Tax accounting and reporting.
- State income tax compliance.
- International taxes.
- Transfer pricing.
- Customs and trade.
- Value-added tax.
- Goods and services tax.
- Sales and use tax.
- Tax controversy.

Measurable Results

With the implementation of RPA, many hours of data entry and processing time have been reallocated to our professionals for more meaningful, career-building and client-serving work.

The case study features tax professional Yi Liu, who leveraged RPA technology to enhance his team's productivity and value-added work. Yi and his team perform compliance reviews on a high volume of transactions, and he had an idea to help save significant hours and increase accuracy.

Yi explored a way to apply artificial intelligence using machine-learning technology to handle processes within the thousands of transactions his team reviews monthly. He created a decision-tree algorithm for the artificial intelligence to analyze the data, learn the patterns, and generate a model that could be applied to the raw data. The tool he created was able to make predictions with an accuracy rate exceeding 98%, and the accuracy rate increases as more data is used and refined. With the ability to learn and the precision of applying the learned pattern, the value of this tool has been tremendous.

EY believes the evolution of RPA as a professional-inspired, team-collaboration effort has contributed to its rapid adaptation and success and the association of the bots as "friends and coworkers" has enhanced the "emotional" bond between human and machine. This fusion of people and technology is a key differentiator of EY's approach to intelligent tax automation solutions.



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