Planning for the Future

While RPA is relatively new, it is sweeping through technology companies, due to the need to automate repetitive, manual processes. But as technology is ever changing, RPA is evolving with it. It is important for you to know about coming trends, so you can determine if and when to introduce them into your organization. We will discuss the most significant "evolutions" to RPA here.

RPAAS, process mining, and intelligent processing are extensions of RPA.

RPAAS – RPA as a Service

Currently, most companies have native clients for automation tools. In the future, and the transition is already happening, all infrastructure of RPA is moving to the cloud. As stated in *Robocloud*, "Using RPA as a service means that your company does not have to purchase your own servers, licensing or professional services."[1]

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[1] https://robocloud.co.uk/rpa-as-a-service/.

The basic advantage is that all the benefits of cloud can be leveraged. These include

- Increased capacity: For example, perhaps you have ten Bots running on one machine. If you need to add more, you will need to increase the memory, the processing speed, etc. With RPAAS, you have sufficient flexibility to increase the capacity and replicate servers much more quickly. You can replicate the machines/servers on which the Bots are running, enabling your working force to be replicated faster.

- Increased flexibility: For example, we know that Bot licenses can be expensive. Currently, if you need 2 Bots immediately, and you estimate that within the next 6–12 months, you may need 2 more, you need to buy 12 licenses and create the infrastructure for them. With RPAAS, you take advantage of the cloud and you can replicate machines in minutes, so you can increase or decrease the number of Bots at any time. By working with the business to develop a sound business and technology strategy, you have the potential to realize significant savings.

- Sometimes new functionality is needed very quickly. Using RPAAS, you can adapt new releases and features quickly, because you can scale up the infrastructure on demand.

■ **Pause and Consider**   Based on what you now know about RPA, how do you think RPAAS could benefit your organization? What steps would you need to take (e.g., a clear presentation of potential cost savings, based on historical information) to convince management to take this next step?

Process Mining

We have emphasized throughout this book that RPA is for repeated processes which have simple logic and don't need much intelligence or human intervention. This is because with most processes, there are security concerns and concerns about accuracy. The process has to be simple enough that security and accuracy standards are not compromised. In our experience, processes are introduced to us by business leaders who want to streamline their operations and improve efficiency. So they may identify one or two processes that they know are extremely repetitive and would appear to be good candidates for automation. But often these are processes which for

some reason are getting some attention; perhaps the people performing the process are voicing discontent because, we'll just say it, doing this kind of repetitive work can be boring!

There may be several other processes within the business unit that are just as repetitive, but perhaps they aren't coming to the notice of management at the moment. Perhaps they are month-end or year-end, rather than daily, processes. Perhaps they are only needed occasionally to clean up some kind of backlog of requests. Regardless of the reason, they may be excellent candidates for automation, but are not currently identified as such by management.

Process mining tools have been designed to analyze processes, and using built-in logic, identify and help determine which are the best candidates for automation. The business provides as many processes as possible, not just those that are the "squeaky wheel" processes, and enters them into the process mining tool, and the tool will identify the best automation candidates.

At a simpler level, with smaller organizations or simpler processes, process mining tools can also assist as a starting point for identifying automation candidates. The tool can highlight significant business functions and their accompanying processes.

Another area where process mining tools can be highly beneficial is in the meeting points between processes. Process mining tools can assist in determining where those intersection points can be automated.

Thomas H. Davenport and Andrew Spanyi, writing in the *Harvard Business Review*, sum up the advantages of process mining succinctly:

> *Process mining software can help organizations easily capture information from enterprise transaction systems and provides detailed — and data-driven — information about how key processes are performing. It creates event logs as work is done: an order is received, a product is delivered, a payment is made. The logs make visible how computer-mediated work is really happening, including who did it, how long it takes, and how it departs from the average. Process analytics create key performance indicators for the process, which enables a company to focus on the priority steps to improve.*[2]

Remember, due diligence is still required; the tool is only as good as its input, and the automation decision must still be made by a human resource.

Once processes are selected by the process mining tool, all the phases from "opportunity assessment" shown in this book would be followed, including periodic meetings with the Governance Committee to approve or disapprove moving to the next step.

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[2] https://hbr.org/2019/04/what-process-mining-is-and-why-companies-should-do-it.

■ **Pause and Consider**   For larger organizations with highly complex processes, process mining can greatly expedite the identification of potential automation candidates. Would this be beneficial in your organization? Who would you need to speak with to better understand the potential benefits of process mining to your organization?

Intelligent Processing

Currently in RPA, we build the logic and simple rules for converting the manual steps into automation. Intelligent processing can be viewed as "a way to process unstructured textual data. Document cognition leverages artificial intelligence, machine learning, cognitive science, and natural language processing to index structured, semi-structured, and unstructured data."[3]

With intelligent processing, we are building IQ Bots. Using artificial intelligence and machine learning, along with RPA techniques, we are adding intelligence to the rules when building Bots. One example is identifying handwritten text in documents; currently, information input to a Bot with handwritten information will be diverted for manual handling; the Bot cannot read handwriting. AI techniques can assist in reading this kind of text and have a percent of accuracy that can be calibrated so the performance of the Bot can be increased. As with any process that is partially automated, anything the Bot cannot read and/or understand can be diverted to manual processing.

Writing in *Capacity*, Joe Sullivan listed seven benefits of intelligent document processing.[4] He said the IDP

1) Promotes automation because it facilitates process improvement

2) Simplifies compliance by sorting documents, data entry, and information validation

3) Is effective, because it reduces manual intervention in document-centric workflows

4) Supports scalability, because it can be applied to various applications in different areas in your organization

5) Attracts savings by reducing the duration it takes to process documents and reduce the cost of labor

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[3] https://thechatbot.net/intelligent-content-processing-for-chatbots/.
[4] https://capacity.com/seven-benefits-of-intelligent-document-processing-idp/.

6) Increases speed by processing large volumes of data in a very short amount of time

7) Enhances customer experience and satisfaction by greatly reducing the time it takes to process paperwork

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■ **Tip** As Sullivan mentions in his article,[5] some management teams tend to overlook the soft costs related to customer experience. Don't make that mistake! Just because you may not be able to quantify customer experience in terms of dollars and cents, any organization must remain laser focused on customer experience if it wants to succeed in today's market.

Hyperautomation

One of the upcoming technological trends which is heavily discussed in the industry today is hyperautomation. According to Gartner,[6] hyperautomation in the near future, within the next few decades, is going to have the greatest impact on expanding automation of business processes.

As we have already mentioned earlier, the best use of RPA is for highly repeatable, high-volume, manual tasks carried out by employees. Unfortunately, traditional RPA software has limitations. It doesn't understand inputs in the form of unstructured data, and it doesn't learn by itself. Due to those limitations, any RPA solution is only suitable for rule-based tasks which require human intervention to translate them into the Bot's language, in the form of code. It leads to a few disadvantages. First, any changes to the process would require a skilled developer to make changes to the code and then test and deploy the changes to production. It slows business agility and increases operational costs. Second, depending on the industry, the rule-based processes may cover a small fraction of overall business operations, limiting the expansion of digital processing and not achieving operational cost reduction targets.

So, how about tasks that require more critical thinking? What if most of the processes in your organization require analysis of different data to produce an output? Can they be automated?

The concept of hyperautomation goes beyond the straightforward, rule-driven, and repeatable processing; it is not a single tool but a combination of, in addition to RPA, multiple, more advanced processing technologies, such as intelligent document processing (IDP), optical character recognition (OCR), and intelligent character recognition (ICR). It combines AI-powered solutions

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[5] Ibid.
[6] www.gartner.com/doc/reprints?id=1-253WYNPK&ct=210129&st=sb.

like predictive modeling, machine learning, deep learning, natural language processing, and other intelligent processing technologies into one system. Compared to conventional RPA automation, hyperautomation allows expanding automation to complex and often heavily cognitive processes that require human intervention to make a decision, enabling end-to-end process automation of the business operations. Its primary mission is to continuously increase the scale of automated end-to-end operational decision-making processes by eliminating human operators from low-value operations. Due to its nature, hyperautomation creates a separate subset of digitally run operations within an organization that replace conventional operations that rely heavily on manual processing, often requiring the physical presence of the workforce.

Consequently, in the near future, operational leaders will need to be ready to redefine their employees' responsibilities, their required skill set, and the way they are seeing their work. It might seem that the expansion of hyperautomation across industries would make human employees obsolete. We would argue that there is no reason to be so pessimistic, at least not for a very long time. We believe that the artificial intelligence solutions as part of hyperautomation will redefine and reshape the workforce, and, yes, some jobs are going to be fully automated, but some new ones will be created and others will need to be readjusted. Looking at the nature and limitations of AI-powered solutions, the jobs that will likely disappear in the future are customer service related such as receptionist, travel agent, cashier, bank teller, etc. We would predict that manual processing would still exist in the future for very complex decision-making operations. However, we envision that AI will function more as an assistant to human decision-making and not its main driver. In those human-machine models, AI would process input data and make recommendations, or propose a decision together with the rationale behind it, but a human is going to be the one who makes the final call.

An extension to this AI-human partnership would be an incorporation of a learning loop back to AI when a human makes a decision to create a continuous learning cycle. The same way as we humans learn by gaining experience with time, machines will learn from humans. The proposed approach, in comparison with traditional supervised algorithm-based training, would accelerate the AI learning process, but most importantly, it increases the adaptability and speed with which any change in the decision-making model can be incorporated. As business conditions are rapidly changing around us, AI will need to be kept updated with current criteria and business rules in order to avoid a model to drift and potentially result in inadequate performance and poor decision outcomes. Thus, establishing continuous learning cycles where humans continuously curate the decision criteria back to the AI model would ensure continuity of business operations by avoiding taking AI out of operations for lengthy overhauls and adjustments.

Further, depending on risk and poor decision impact level, the human-AI model can be adjusted so that high-confidence decisions could be delegated to machines, allowing humans to focus on low-confidence decisions. Of course, the question is what parameters to use and how to define the confidence level based on which criteria.

Hyperautomation could bring numerous advantages that could boost an organization's performance, increase its competitiveness, accelerate innovation, as well as improve the well-being of its workforce.

These could include

– *Reduction in operational cost* by redesigning and replacing manual, low-complex processes with automation.

– *Acceleration of digital transformation* when the organization could align its business operational goals with investment in technology.

– *Improved competitive advantage* by introducing new technologies into day-to-day operations, since outputs could be produced faster, with higher quality and lower cost, resulting in improved customer satisfaction.

– *Increased quality of business decisions*: AI technology would require access to data; this means that business- related information can be easily extracted and used, which would create an effective evidence-based, decision-making environment.

– *AI-powered technologies would accelerate innovation* across the organization and increase business agility.

– *Improved collaboration among technology and business operation teams*. Hyperautomation requires integration of multiple technologies and business operations, which are traditionally siloed, into one ecosystem.

– *Increased employee satisfaction* since it would enable employees to focus more on value-added tasks which are going to be more interesting, challenging, and diverse. Creating a smart working environment where employees will be challenged and do not waste their time on boring, repeatable, low cognitive, and low value tasks would result in an increase of their productivity

Hyperautomation can be largely advantageous for large and hierarchical organizations with many legacy systems and heavily manual operations that have considerably low automated processing levels. RPA Bots can integrate legacy systems with other technology solutions used in hyperautomation.

By achieving that, those organizations would see real results in improving business operations' agility, effectiveness, and efficiency very quickly.

It is important to remember that different technologies used as part of hyperautomation might experience challenges during their implementation due to organizational and technological limitations. The most common challenges include

- Using AI-powered cloud-based solutions may require the use of client personal data which could increase risk of a privacy breach.

- AI-powered solutions may inherit biases that are either coming from the data used for training or embedded into an algorithm because of using assumptions.

- Applying hyperautomation to poorly defined and understood processes. It is difficult and pointless to automate poorly documented and unclear processes. Process mining tools earlier mentioned in this chapter can help to bring visibility and better understanding and assessment of the processes.

- Applying hyperautomation to serve customers with extremely complex and unique requirements would require a craftsmanship solution. If process steps and outcomes are customized for specific customer needs to increase customer satisfaction, it will introduce complexity and dependency on humans for manual handling. It is very important for any organization to define the right balance between customer satisfaction and process simplification through its standardization.

- A risk-averse organizational culture, which promotes avoidance of potential errors creating conservative inertia, would slow down innovation and adoption of automation. Empowered employees should be able to explore, experiment with new upcoming automation technologies, and foresee business benefits quickly. It is critical to ensure end-to-end, technology, and business operations leadership support, gain their trust, and confer with them to try new and unfamiliar approaches.

- Selecting the right stack of automation solutions from constantly changing and evolving products available on the market. We believe that an organization should embrace automation as an operational principle rather than simply seeing it as added functionality or tool.

We see that in the near future, RPA capability will be a part of the automation stack of products that are available in out-of-the-box functionality of workflow software. There is going to be no need to purchase it separately and integrate it to the tech architecture.

Now that you have all that you need to embark on your RPA journey, you need to be aware of some of the challenges you may encounter, beyond those already mentioned. Chapter 11 will help you avoid some of the issues we have encountered in our experience.