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The future of operations - Beyond process automation

Bringing cognitive robotic intelligence into the workplace.
A cognitive toolkit enabling organizations to advance their
business operations.

July 2018

Why read this paper?

This whitepaper has been co-created by Deloitte Israel and NICE Advanced Process Automation Solutions. It is designed to combine the unique and innovative experience of both a global consulting firm and technology provider. It aims to provide a practical point of view on how to effectively leverage the growing trends of Robotic Process Automation (RPA) and Robotic & Cognitive Automation (R&CA). A key ingredient for success is to treat automation as a business transformation, in order to achieve scale, stability and ultimately long-term business value. As such, this paper addresses some of the most pressing questions and issues surrounding R&CA transformations. In addition, practical insights and techniques will be explored via a business case example, to provide organizations with the guidance needed to kick-start or advance their process automation journeys.

The rate at which technology changes resembles an exponential curve. On the other hand, the adoption of new technology on an enterprise level is much slower.
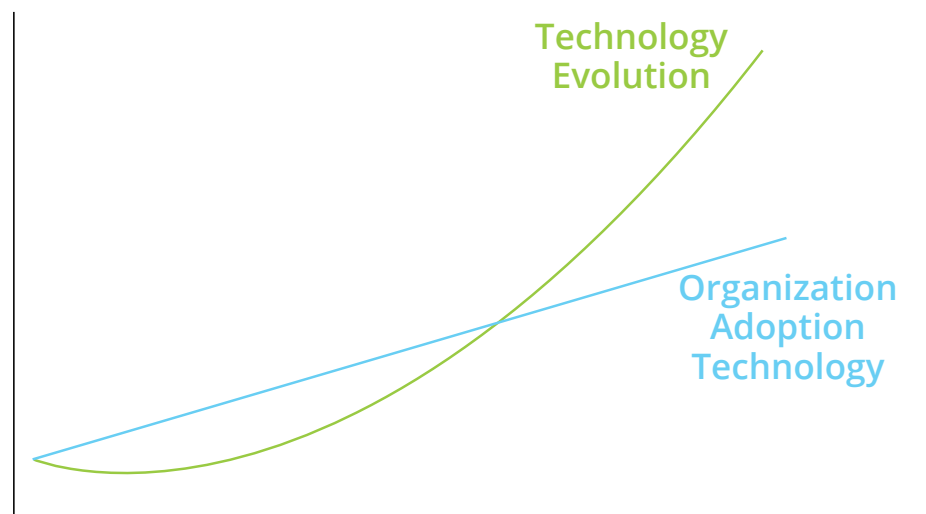
Therefore, there is a significant gap between the speed at which technological innovations are growing and the ability of enterprises to successfully adopt these new innovations (regardless of the potential process efficiency gains).

Technology forms an integral part of everyday life, and cognitive technologies and Artificial Intelligence are making greater inroads into the lives of humans. Artificial Intelligence has the potential to drive sustainable competitive advantage and business value. In addition, Artificial Intelligence is fast becoming a transformative technology, which will have a far-reaching impact on how we interact and make decisions. Take for example how an employee may interact with a chatbot as a virtual assistant.

Most enterprises world-wide already understand and acknowledge that our lives will be transformed by automation technology and Artificial Intelligence. According to a Deloitte report "The robots are ready", 53% of respondents stated that they have already embarked upon their Robotic Process Automation journeys. This is expected to increase to 72% by 2020, and if this growth rate remains consistent, Deloitte estimates a universal adoption of RPA in five years' time. This indicates that enterprise-wide process automation should rapidly become the norm for management of business operations. Yet, in reality, it is challenging for most organizations to cope with the exponential developments and discoveries in the technology world.

Why?

Our assumption is that many organizations are stumbling on a practical level to take the steps needed, and are seeking the answers to many questions, like:

1. **What is Robotic & Cognitive Automation (R&CA)?**
2. **Why should enterprises embrace R&CA and what value will be obtained?**
3. **How will R&CA influence the enterprise?**
4. **How do enterprises work with R&CA – what are the next steps?**

Whether organizations are at the beginning or advanced stages of their process automation journeys, these questions address common issues that most organizations can relate to.

However, there is no question that enterprises need to start their robotic and cognitive journeys as soon as possible. As a myriad of process automation and cognitive technologies become available – we are at a tipping point – those who embrace robotic and cognitive automation will be a part of the Automation Economy and those who do not, may fall behind.

Executive summary

This whitepaper explores the trends and practical implications of embracing robotic and cognitive Automation (R&CA) technologies within enterprises today.

The rate at which technology is changing and evolving is exponential. Although the impact that cognitive technologies have on everyday human life is tangible, the rate of adoption of new technologies within enterprises is significantly slower. Businesses at large acknowledge the need to invest in robotic automation and cognitive technologies, yet we believe they lack the practical insights and experience to kick-start their R&CA journeys. Infused with practical examples, guidelines and an explanation of different cognitive technology options available today, this paper is designed to empower readers to take the next steps towards embracing R&CA with more clarity and confidence.

R&CA - bringing technology closer to human intelligence

R&CA is the combination of both robotic automation and cognitive technologies working hand in hand. Cognitive technologies largely mimic human capabilities such as:

- Reading – by utilizing OCR (Optical Character Recognition) and Text Analytics
- Listening – by utilizing NLP (Natural Language Processing) and Voice Analytics
- Communicating – by utilizing Chatbots (via voice or text activation)

The robotic capabilities largely mimic the human ability to take action, by utilizing robotic and desktop automation to execute basic and repetitive tasks.

R&CA is perceived and experienced differently across various market entities:

1. End customers are generally very well acquainted with cognitive technology, which forms an integral part of their everyday lives. As such, they expect companies and service providers to adopt and provide the latest technologies that they are using.

2. Technology providers are under immense pressure to expand and innovate their cognitive product offerings to keep up with increasingly sophisticated customer demands.

3. The enterprise today collects data on its customers, employees, competitors, and more. As such, it is essential to streamline and optimize data collection systems to better deal with unstructured data such as emails, call records and scanned files (to name a few). In addition, most organizations today acknowledge that they need to better support an influx of more complex and sophisticated customer requests, often in real-time. Employees are customers too, and form a part of the customer ecosystem. To overcome these challenges and become more customer centric, the organization requires more intelligent technology solutions to automate more complex business processes and better support the customer's expectation. R&CA increases the capabilities of enterprises to automate a higher volume of more complex business processes. This will solve a greater breadth of business pain points that can be more effectively resolved. **In the near future, it will probably not be possible for organizations to compete effectively without some level of investment in R&CA.**

The R&CA wave has hit the shore and enterprises who are aiming to become leaders of tomorrow need to be invested in a combination of process automation and cognitive technologies.

How does R&CA work in reality?

A simulated business case (within the banking industry) shows how a customer interfaces with cognitive technology to open a bank account. It also shows how the various cognitive technologies integrate into and work with an RPA platform in the background. All the robotic and cognitive elements, taken from this case, will be broken down and assessed during each step of the customer interaction. At the end of this section, a full robotic and cognitive toolkit will be created, based on how each robotic and cognitive tool has been applied in this specific business case.

How will R&CA influence the enterprise?

When enterprises choose to embark upon their R&CA journeys, there will be numerous influential factors to consider. This is because R&CA is not just an IT project. **R&CA is a transformation that will change the organization's people, processes and technologies**. Each one of these three groups relates to people, who naturally resist change. How can this resistance to change be managed?

- Treat the people as key stakeholders and act accordingly: learn to see the potential stakeholders, enable staff to experience the benefits of R&CA and give them real-time and personal guidance and assistance during the adaptation phase to the new organizational processes and systems.
- Move forward, one step at a time: aim to kick-off with a small project scope by piloting a project. Choose a pilot by focusing on opportunities with a small time to value gap, minimizing any distraction from higher priority activities, scale the successful elements of the pilot, and replicate positive results.

Also, remember the following considerations:

Fail Fast. With any innovative project, failure at various stages is inevitable. In addition, riding the RPA and R&CA waves is an unpredictable transformation. **Be quick and agile. By failing fast, organizations are enabled with critical learnings to optimize their R&CA deployments.**

Consider the data element. Cognitive technology requires data in order to trace and mimic human intelligence. Data however, is not always easily available or accessible. When starting a cognitive automation initiative, there should be a significant time investment in understanding which data can be leveraged and how to do so. Regulation plays a key role when working with data as well.

In conclusion, kick-starting the journey towards establishing a firm RPA baseline for further expansion into cognitive technology is multi-faceted and unpredictable. You need to crystalize your R&CA vision, plot your position on the RPA and/or R&CA waves, seek out mature and objective guidance from a trusted advisor and implementer and always continue to learn more. When approaching the unchartered waters of the R&CA wave, there will be many uncertainties and learnings along the way. Embracing a mindset that is open and flexible to continuous learning and re-optimization of key elements for ongoing improvement, is critical. With rich knowledge sharing and practical deployment insights, this paper is intended to empower organizations with the clarity to pursue successful R&CA projects.

What is robotic & cognitive automation (R&CA)?

Simply put, R&CA is the overlapping green area in the graphic illustration below. Let us take a closer look at the other two circles, so that we can gain a better understanding of what R&CA actually is.
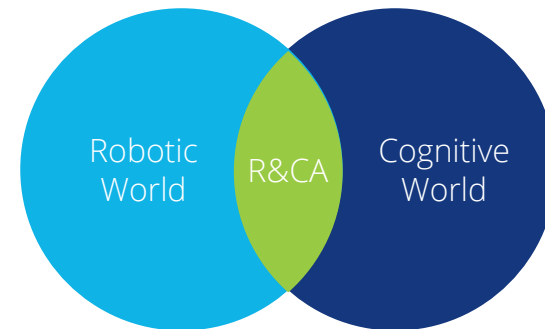
Robotic automation, in its most basic form is a capability that allows organizations to perform complex rules based work, without human involvement. This is achieved by interacting with any software application or website in the same way a human would, or by seamlessly connecting to web services and data sources.

On the other hand, the cognitive world (or Artificial Intelligence) is technology that is designed to operate in a way that mimics human behavior. It is the ability of a machine to perform a task in a way that is considered smart or intelligent. Like humans, cognitive systems are not born perfect. They need to learn by observing and adapting to their environment (much in the same way that a human would). This is typically done by ingesting data, processing it and storing it for future reference.

In practice, R&CA can therefore be defined as an automation solution that combines both robotic and cognitive capabilities.

When looking at the illustration below a logical question may come to mind: why do both robotic and cognitive elements need to be embraced? I.e. why do organizations need the overlapping part of the illustration?
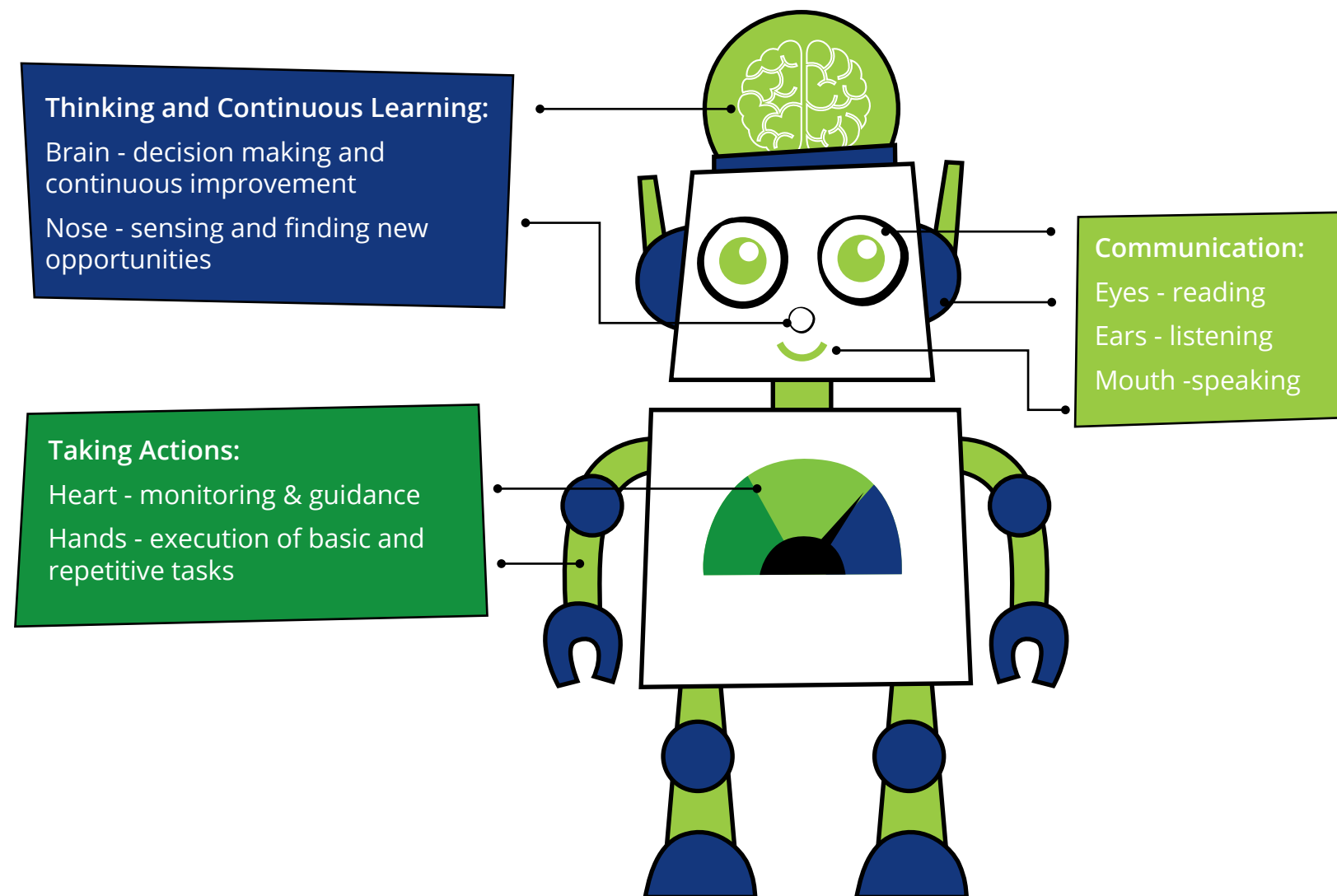
The robotic and cognitive worlds both have their strengths. Just as the robotic world relies on connectivity to systems (to automate simple, routine tasks), the cognitive world relies on data (and smart algorithms) to mimic human intelligence. The combination of both the robotic and cognitive, which is R&CA, enables enterprises to draw upon the strengths of both worlds.

By having connectivity, robotic automation forms a solid baseline for enabling the integration into other systems, minimizing the need to create interfaces. On the other hand, cognitive technologies bring more intelligence to robotic automation platforms, such as the capabilities to interpret data and make decisions. R&CA is therefore a more intelligent process automation platform that has the capability to integrate with various cognitive tools, enabling the automation of more complex business process scenarios.

R&CA - bringing technology closer to human intelligence

What do humans do?

Some of the basic human actions include thinking, learning, communicating and taking action. The below diagram illustrates how the integration of cognitive tools into an RPA platform can closely resemble human intelligence.

Thinking and Continuous Learning:

Brain - decision making and continuous improvement

Nose - sensing and finding new opportunities

Communication:

Eyes - reading

Ears - listening

Mouth -speaking

Taking Actions:

Heart - monitoring & guidance

Hands - execution of basic and repetitive tasks

Let us start off by understanding how R&CA mimics the human abilities to **think and learn.**

Machine Learning is the ability to learn, improve and make decisions, just as the human brain does.

Automation Finder is the ability to find new opportunities for automation, just as a human would draw on the sense of smell to scope out and explore an environment.

Next are the **communication** channels.

Optical Character Recognition (OCR) & Text Analytics give robots the ability to read, just as the human eye does.

Natural Language Processing (NLP) & Voice Analytics give robots the capabilities to listen attentively, just as the human ear does.

A Chatbot is similar to the human mouth, enabling the robot to communicate via voice or text.

Finally, the capability of **taking action.**

Robotic Automation is an ability of the robots to execute basic and repetitive tasks, just as a human would use the hands and legs to take basic forms of action.

Desktop Automation is comparable to the human heart, guiding and monitoring the user through every step of the process.

R&CA means that both the robotic and cognitive worlds are working together.

Take for example a scenario where an organization needs to extract information from a scanned file and insert it into a CRM system. By leveraging OCR to extract the data, text analytics can then be utilized to categorize the data, after which, the automation will kick-in and update the CRM application. In the event of an irregularly or systems error, the robot will alert a human to intervene.

This is initiated via desktop automation, where the robot communicates with a human user in the form of an intelligent and interactive screen.

Further on in this paper, other cognitive tools (some of which are mentioned in the below diagram) will be unpacked and applied to a real-life customer interaction within the banking industry.

Not everyone perceives robotics and cognitive in the same way, which leads us to the next section on different market perspectives.

Different market perceptions of robotic & cognitive automation (R&CA)

The definition of R&CA is also evolving from the perceptions of different stakeholders. Each stakeholder experiences and adopts cognitive technologies differently. Three key stakeholder perspectives will be explored: The customer, technology provider and enterprise.

Enterprise

Customer

The Technology Provider
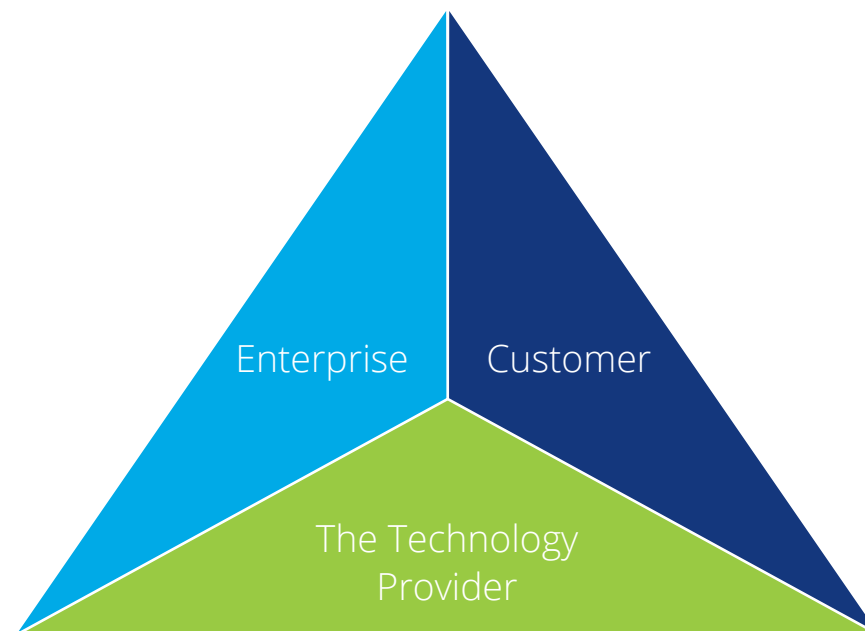
The customer

Most enterprise customers are very comfortable and familiar with cognitive technology and can access it from their pockets. Cognitive assistants such as Apple Siri or Google Assistant in Android are prime examples. These are examples of intelligent software that are designed to answer either voice or text activated questions, in real-time. Customers can get immediate answers and guidance to just about any question, in the blink of an eye.

The face of end customers has changed significantly over the past few years. Generation Y (Echo Boomers or Millennials) are a technology savvy generation who are generally immune to traditional marketing and sales pitches. They experience reality by having instant access to information and sophisticated technology forms a very natural part of everyday life. Generation Z will have even higher expectations around sophistication of technology since they were born in an environment with a diverse set of technology options.

As a result, customer expectations are growing and becoming more sophisticated. They expect companies and service providers to adopt and provide the latest technologies that they are using in their everyday lives.

However, the fast adoption of cognitive technology is not just impacting the end customer segment of the market, the end customer is only a part of the equation.

Employees are customers too, and form a part of the customer ecosystem.

In fact, there is a big gap experienced by employees who go to work each day. As they set off for work, they leave their personal cognitive technology behind, to return to an office environment full of old and often outdated systems. As such, enterprises are realizing the need to fulfill employee expectations around interacting with robotic cognitive interfaces at work.

In summary, customers expect their service providers to deliver a tech savvy service experience, which is not dramatically different from what they are using in their everyday lives.

These market movements place immense pressure on technology providers to expand and innovate their cognitive offerings.

The technology provider

Technology providers need to keep developing robotic and cognitive solutions in order to support rapidly increasing market needs.

An automation economy built on increasingly sophisticated market movements

As the automation economy continues to expand and grow, enterprises world-wide will start to operate at enhanced levels of efficiency. Robotic Process Automation will soon become the default technology enabling organizations to compete with one another all the while providing heightened service experiences and customer interactions. This market movement is placing immense pressure on technology providers to expand and innovate their robotic and cognitive offerings. Technology vendors need to keep developing robotic and cognitive solutions to support rapidly increasing market sophistication and intelligence.

Changes in the technology vendor landscape

The many open sources and accessible platforms available today, are fundamentally changing the conceptual spectrum of technology players. We are seeing a movement away from traditional technology providers to new types of players. Take for example Amazon, which can be classified as either a retailer, an online entity or a cloud infrastructure and services provider. The Amazon Chabot, Alexa, is another example of an innovation that has transformed the organization's services and capabilities.

The emergence of transformation enterprises is redefining the technology vendor landscape. It is naturally opening up new channels of competition and opportunities for collaboration to produce more holistic solutions.

With so many options and opportunities available today, it is essential for enterprises to seek the right advice and guidance in order to source a good match between their needs and the technological tools available.

The enterprise

Today, it is common practice for enterprises to collect data on their customers, employees, competitors and more.

As such, it is essential to streamline and optimize data collection systems to better deal with unstructured data such as emails, call records and scanned files (to name a few). The combination of robotic and cognitive automation technology is very well positioned to support this need.

For example, utilizing OCR as well as text analytics engines with built in machine learning capabilities, will convert the unstructured data into a structured format, which can then be consumed and actioned by the robotic workforce. In addition, the cognitive capabilities of machine learning, will enable the robots to learn and improve levels of accuracy over a period of time.

Most organizations today acknowledge that they need to better support an influx of more complex and sophisticated customer requests, often in real-time.

How can organizations overcome this challenge and become more customer centric?

They can expand their human workforce, but this is unlikely to provide a long-term solution.

On the other hand, they can invest in the expansion of robotics and cognitive capabilities and utilize this as a virtual workforce. This option provides a cost effective and sustainable solution for organizations on a global scale.

Organizations ultimately perceive cognitive tools as raising the intelligence of their process automations. This is in order to deal with more business process complexity, such as the ability to extract, interpret and understand unstructured data (often originating from highly descriptive and complex customer queries). Once the cognitive technology has converted the unstructured data into a structured format, RPA robots can then automatically update back-end systems with the relevant data. In order to automate complex process scenarios such as the processing and interpretation of unstructured data, a combination of cognitive tools will need to be infused into a robotic automation platform.

According to all of the above, we believe that, in the near future, it will not be possible for organizations to compete effectively without some sort of investment in R&CA.

Why embrace R&CA?

What is the real value for an enterprise? Why consider embracing robotic and cognitive automation?

Lets recap with a summary of the key points which best illustrate the value of adopting a combination of robotic and cognitive automation practices

The RPA wave has hit

The RPA wave has hit the shore, triggering a new business landscape. This new business landscape will keep demanding new levels of business process efficiencies to meet more sophisticated customer demands.

What's more, investments in robotic process automation technology will become mandatory requirements for organizations to build and sustain competitive advantage. Embracing cognitive technologies is the next step towards successfully surfing the RPA wave and preparing for the next cognitive wave. This is in order to stay well ahead of competitors and flow in the direction of supporting more complex customer needs.

Preparing for the upcoming cognitive wave

According to an insights article published by Deloitte, AI specific systems (between 2017 and 2021 alone) are expected to grow at a Compound Annual Growth Rate (CAGR) of 50 percent. This is equates to $200 billion in cumulative spending across a variety of sectors, such as healthcare, retail, banking, and manufacturing. This prediction indicates that many organizations see the need to invest in R&CA, and to naturally ready themselves for the next wave of cognitive automation technology.
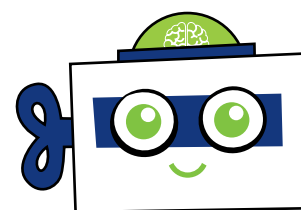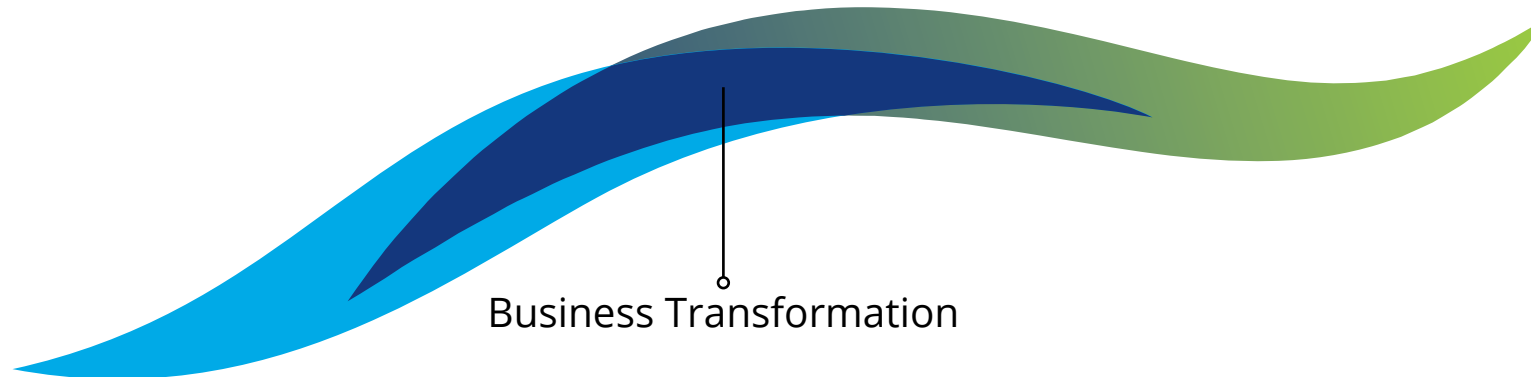
Business Transformation

Robotic Process Automation
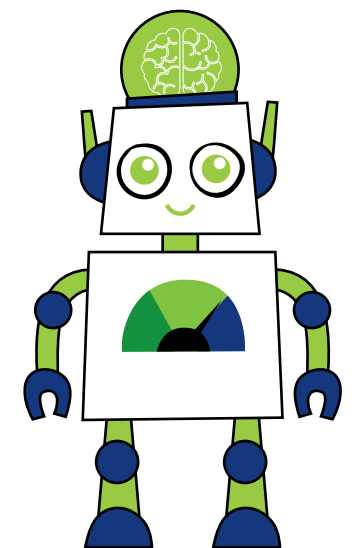
Robotic & Cognitive

Redefine limitations

By investing in robust R&CA platforms, a greater breadth of business pain points can be resolved.

- For example, one of the many challenges experienced by organizations, includes dealing with process irregularities or exceptions. For instance, missing data that is needed to complete the process or a technical error such as the robot failing to connect to an application. In many instances there is an over reliance on human employees to handle each and every process exception, which can become time intensive and costly. We can redefine this constraint by leveraging the robot to learn how to deal with exceptions. How? The robot can escalate the above issues to a human and observe how he or she behaves in order to correct the error. With enough repetition and through continuous learning, eventually the robots will be able to handle exceptions or process errors as a normal part of an automated process flow. Ultimately, employing an intelligent robotic workforce, with the capabilities to train itself to handle process exceptions, is an effective means to drive down operating costs and dramatically increase processing speed, accuracy and efficiency.

- Another challenge experienced by organizations, is integrating cognitive technology into existing enterprise systems. It is advisable to first invest in a robust process automation platform and then steadily ramp up the cognitive intelligence of the system through the integration of cognitive technologies. This is a proven approach to effectively close the cognitive integration gap.

Increasing business value by automating more processes

By redefining limitations, organizations are enabled to automate more business processes, which naturally increases operational efficiencies and drives down costs. Moreover, automating more complex admin driven processes, frees up the human workforce to focus their attention on the customer.

Therefore, embracing R&CA creates an opportunity for organizations to move from being product centric towards greater customer centricity.

The diagram on the next page illustrates how greater business process efficiency gains can be obtained.

■ Manual Tasks ■ Unattended Robotics ■ Attended Robotics ■ Cognitive
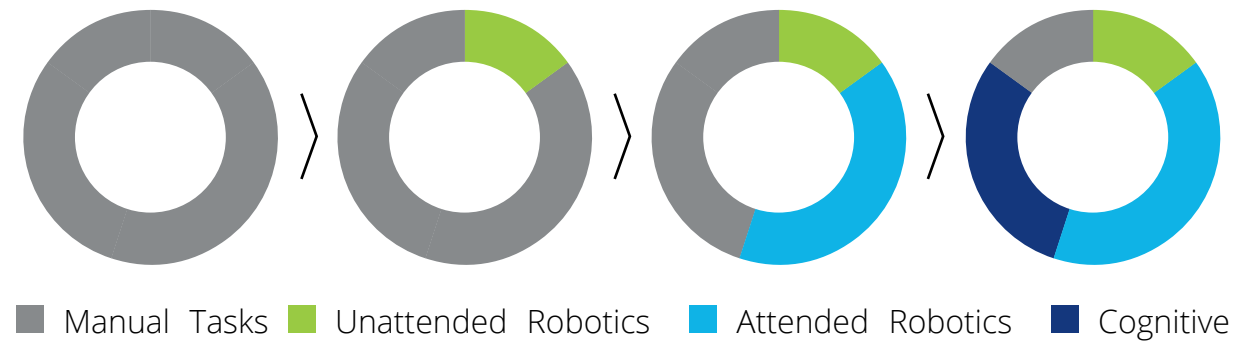
The grey circle to the left indicates all the business processes that are being manually executed within an organization.

When starting an automation transformation, it is advisable to start in an unattended robotic mode. This involves the automation of a process or a task without human involvement. The robot assumes the role of a virtual employee who executes more repetitive, rules based tasks.

The third circle illustrates the inclusion of attended robots which work collaboratively with human employees in real-time. This is in addition to the unattended robotic workforce in the second circle illustration. The attended robot communicates with the human using an intelligent and interactive screen in addition to Natural Language Processing (NLP) based chat. This combination enables the robot to resemble human-like characteristics when communicating with a human employee. The human is able to use the interactive screen to communicate the next task or process for the robot to automate. This dynamic between humans and robots will be explored further in the next section.

Finally, in the fourth circle, cognitive tools are added to the robotic workforce. Since the robots are already connected to the enterprise's systems, the cognitive tools can integrate with existing systems without developing special interfaces. Developing interfaces between systems is one of the many challenges experienced by organizations today.

Leveraging existing robotic capabilities is a concrete solution to overcome this challenge.

Let's look at an example of integrating an RPA platform with a chatbot. The RPA robots transmit information from the organization's backend systems and applications to the chatbot. This enables the chatbot with more cognitive intelligence to provide a customer or employee with specific data in addition to executing a task by accessing the enterprise's applications.
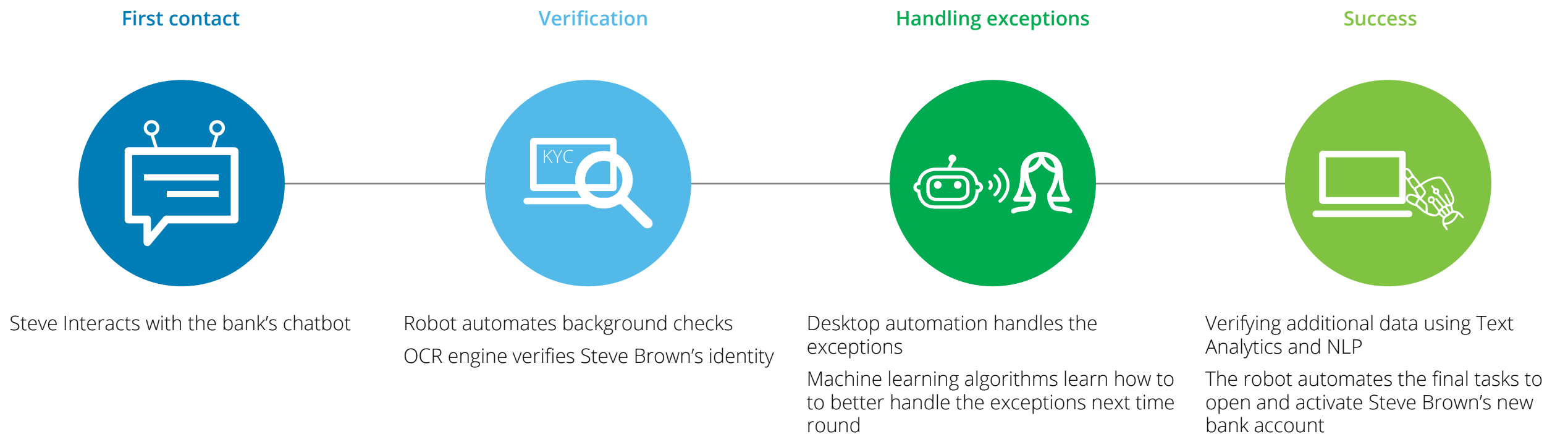
In summary, there are two key takeaways:

A. When starting an R&CA journey, it is advisable to begin by maximizing the robotic potential before bringing in more advanced cognitive capabilities. This enables the enterprise to:
   - Obtain tangible value and ROI relatively quickly
   - Gain confidence in the practice of process automation
   - Mange a moderate level of organizational change before experiencing a much bigger change, as a result of using cognitive technologies

B. The small grey area within the fourth circle, indicates that there will always be a need for human focused tasks, as the human touch element cannot be replaced.

R&CA in action – How does it work in reality?

In order to fully understand what R&CA looks like in practice, we will examine a simulated business case within the banking industry. The business case shows how a customer (Steve Brown) interfaces with cognitive technology to open up a bank account. It also shows how various cognitive technologies integrate into and work with an RPA platform in the background.

We will break down all the robotic and cognitive elements, taken from this case, and assess each step of the customer interaction. By doing so, we will unpack each robotic and cognitive tool, and its related capabilities.

At the end of this section, a full robotic and cognitive toolkit will be created (based on how each robotic and cognitive tool has been applied in this specific business case).

Meet Steve Brown, a 29-year-old professional, seeking to open a new bank account online.

First contact	Verification	Handling exceptions	Success

Steve Interacts with the bank's chatbot

Robot automates background checks

OCR engine verifies Steve Brown's identity

Desktop automation handles the exceptions

Machine learning algorithms learn how to to better handle the exceptions next time round

Verifying additional data using Text Analytics and NLP

The robot automates the final tasks to open and activate Steve Brown's new bank account

View the <u>full video</u> **of this banking scenario**

Customer interaction with the chatbot

Steve interacts with the Bank's chatbot

- Steve starts off by interacting with the bank's chatbot (from a location of his choice) by typing in a request to open a new bank account online. There is also the option to utilize voice activated chatbots, where Steve could issue a voice request via his smart device. Then the voice bot will have the intelligence to interpret and understand the request.
- The chatbot provides Steve with a link to complete an online form.
- Once Steve has filled it out, the chatbot directs the completed form to the unattended robots to kick off some preliminary processes before opening the new bank account.

Automating background checks and verifying the customer's identity

Automating background checks

- The unattended robots start to execute various tasks within the bank's backend systems, such as:
  - Running a customer credit assessment to determine the precise credit score of Steve Brown.
  - Performing a "know your customer" verification process. This includes a search of Steve Brown's profile across social networks, and generates a print screen of the street view of his business. All of which are automatically saved to the bank's systems.

OCR engine verifies Steve Brown's identity

- At this point, there is enough data to determine that Steve is indeed Steve Brown, and not someone else.
- However, the system has identified a discrepancy between Steve Brown's name as it appears on the online form compared to his driver's license. The use of OCR enables the extraction of text from the scanned image of Steve's driver's license.
- Since a discrepancy has been identified, the system will treat this as an exception, which will require human input to resolve.
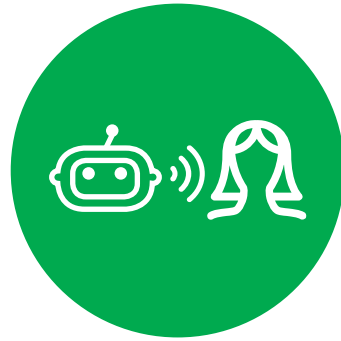
Handling exceptions

Desktop automation handles the exceptions
- The attended robot presents Steve Brown's information to the banker (a human employee). The banker is then able to manually verify that Stephen Brown and Stephen James Brown are the same person. This is due to an exact match of his social security number across relevant documentation.

Machine learning algorithms learn how to to better handle the exceptions next time round
- As the banker manually validates Steve Brown's identity, the system is observing and continuously learning from this type of human input. Advanced machine learning algorithms are designed to study, mimic and learn from human input and behavior.
- In future, the system will be able to handle and process a similar scenario automatically without human input.

Automatically activating the customer's new bank account

Verifying additional data using Text Analytics and NLP
- As the robot continues to upload relevant documentation to the bank's systems, it interacts with cognitive tools (such as Text Analytics and NLP) to validate the data in those files. These cognitive tools enable the interpretation and categorization of key data points from the free text in the uploaded documents. This way, the robots can access and utilize this data during the process automation. This all happens in real-time" to "This way, the robots can access and utilize the data during the process automation, in real-time.

The robot automates the final tasks to open and activate Steve Brown's new bank account
- The unattended robots execute a set of tasks required to open and activate the new business account. This is done by interfacing with various back-end systems within the bank.
- Once the system has confirmed that all of the customer's data meets the banks policy, the robot will automatically generate and send a confirmation e-mail directly to Steve Brown, confirming that his new account has been activated.
- Finally, the robot reports back to its hub (the robotic control room), indicating that the mission has been accomplished.

As indicated in this business case, using a combination of robotic and cognitive automation enables the automation of more complex processes, such as opening a bank account. Automations of this nature should naturally increase customer satisfaction since the customer can access an online service with a rapid response. In addition, employee satisfaction will also receive a boost from removing cumbersome and boring tasks (such as background checks) from the employee's work schedule.

However, it is still a challenge to reach the point of a working process in production. Why? Because R&CA is not just a wave. It is a transformation that will rock the boat within any organization. It is therefore imperative to understand how it will influence your organization and to plan accordingly.

How will R&CA influence the enterprise?

Rocking the boat - R&CA is a transformation

When enterprises choose to embark upon their R&CA journeys, there will be numerous influential factors to consider. This is because R&CA is not just an IT project.

R&CA is a transformation that will change the organization's current people, processes and technologies.

Transforming the people

- **There will be more stakeholders.** When more processes are automated, more people will be involved. People such as the end customer who can sense a real change in the level and sophistication of the service delivery, for example via a voice activated chatbot. IT and process owners, however, will naturally be more involved in the business transformation.
- **There will be a shift in workforce skills and a new job matrix.** By automating more processes, the human workforce is freed up to focus on more complex, high value tasks. As such, enterprises need to recruit more highly skilled individuals to design, develop and deploy the process automations.

Transforming existing processes

Using robotic and cognitive automation will inevitably change how existing processes within enterprises work. For core business processes, this can involve a significant cross functional change. It is therefore advisable for the enterprise to identify potential use cases for automation and to then work towards acquiring the right people. It is imperative to encourage the organization's people to embrace an open mindset to change the existing processes. This is often best achieved by including human employees in the process of learning about the value and benefits that the robotic and cognitive worlds can offer.

The technologies

- **Expect existing tools and systems to change.** Robotic and cognitive automation will require enterprises to change their selection of tools. It will also influence the systems in use in addition to the skills required to maintain these changes.
- **Data is a must.** Cognitive technology requires data in order to trace and mimic human intelligence. Data, however, is not always easily available or accessible. When starting a cognitive automation initiative, there should be a significant time investment in understanding which data can be leveraged and how to do so.

Regulation and compliance driven issues play a key role when working with data. Take for example organization A, which theoretically has all the data it needs. However, various regulations may prohibit this organization from utilizing historical data for children under the age of 12 in addition to the data of European citizens (according to GDPR). In addition, historical data will not be sufficient to support a cognitive undertaking, as real-time data will also be required. This is essentially how machine-learning algorithms are able to learn and improve over time with continual real-time data inputs. The bottom line? Various regulations can limit organization A from collecting all the data it requires, and in order for organization A to proceed with robotic and cognitive automation. A well thought out plan needs to be established to deal with data issues and limitations.

Many challenges will arise during the R&CA journey. Let's take a look at how to conquer some of these challenges.

One of the key considerations is to **manage the integration of R&CA as a transformation.** Regardless of how much organizations have progressed with their R&CA journeys - the following consideration will be helpful to manage such a transformation.

Manage the transformation by embracing a change management approach

"It is NOT the strongest of the species that survives, NOR the most intelligent, BUT the one most RESPONSIVE TO CHANGE" Charles Darwin

Although we have ascertained that many employees desire change, a fundamental part of human nature may resist the very change that is desired. As we discussed earlier, once R&CA is implemented and embedded into an organization's operational processes, the people, processes and existing technologies will be effected. Each one of these three groups relates to people, who naturally resist change. How can this resistance to change be managed?

Communication, communication, communication!

Most of the time, the planning activities of senior management are not always transparently communicated to junior staff members.
This is indicative of poor communication between junior and senior levels within an organization, essentially rendering any business transformation initiative ineffective. In order to increase the successful adoption of new

technology, the people within an enterprise are a key factor to consider when moving towards any kind of business transformation.
So what can be done to get employees onboard?

See the people as key stakeholders and act accordingly:

Step 1: Learn to see the potential stakeholders
From the onset, it is not always clear as to who the relevant stakeholders are or the extent to which they will resist the change. It is advisable for organizations to seek objective and mature guidance during this phase of the process. An example of a potential advisor, to assist with key stakeholder identification and management of issues relating to resistance of change, is a technology implementer with the relevant technical and organizational knowledge.

Step 2: Enable staff to experience the benefits of R&CA
It is essential for the organization to create the right channels for their people to experience the new technology as well as the positive impact that it brings to their jobs. Smart, engaging and effective change management solutions and communication form the centerpiece of the cognitive adoption puzzle. Change management and integration of new technologies, within organizations, should work hand in hand.

Step 3: Real-Time & Personal Guidance and Assistance
When deploying a new solution, it is essential to guide the employees during their adaptation phase to the new organizational processes and systems. Desktop Automation, or virtual assistant technologies can effectively support this need. These technologies are designed to support employees with step by step real-time process guidance, enabling them to adjust and align to the new solution.
This is an effective means of managing the change management elements

that are integral for the successful implementation and deployment of R&CA.

Moving forward, one step at a time

Step 1: Start small

Another key consideration is identifying process automation candidates as a means of activating the R&CA journey. What steps should be followed to select the right process candidates for robotic and cognitive automation?

- Aim to kick-off with a small project scope by piloting a project. Choose a pilot by focusing on opportunities that will demonstrate the value of the automation relatively quickly i.e. selecting an opportunity with a small time to value gap. An important factor is to minimize any distraction from the pilot project (even from higher priority activities). Lastly, scale the successful elements of the pilot and replicate positive results.

- Use your data to conclude where to start. As previously mentioned, data forms an essential ingredient for successful R&CA implementations. Data analytics as well as other cognitive technologies are designed to detect and capture insights about employee behavior and desktop activities. This is an effective way of identifying process inefficiencies that may be ripe for R&CA.

Step 2: Fail fast

With any innovative project, failure at various stages is inevitable. In addition, riding the RPA and R&CA waves is an unpredictable transformation. This is why organizations need to know how to fail fast. Imagine a situation where a team is heavily invested in a selected process to automate. It becomes apparent that the desired value will not be attained. Instead of investing more time, in an attempt to make

the process successful, rather be quick and agile by moving to the next process.

By failing fast, organizations are enabled with critical learnings to take forward when optimizing their R&CA deployments.

Implementing R&CA is not a simple undertaking and as such requires a flexible mindset with the agility to experiment and seek out different directions until the desired goal is achieved. This is an effective way for the organization to achieve greater continuity towards attaining the vision.

How to Do It – Practical Guidelines

Regardless of which stage you are at during your R&CA journey, these five practical steps are useful guidelines to effectively kick-start the next stage of the your organization's journey.
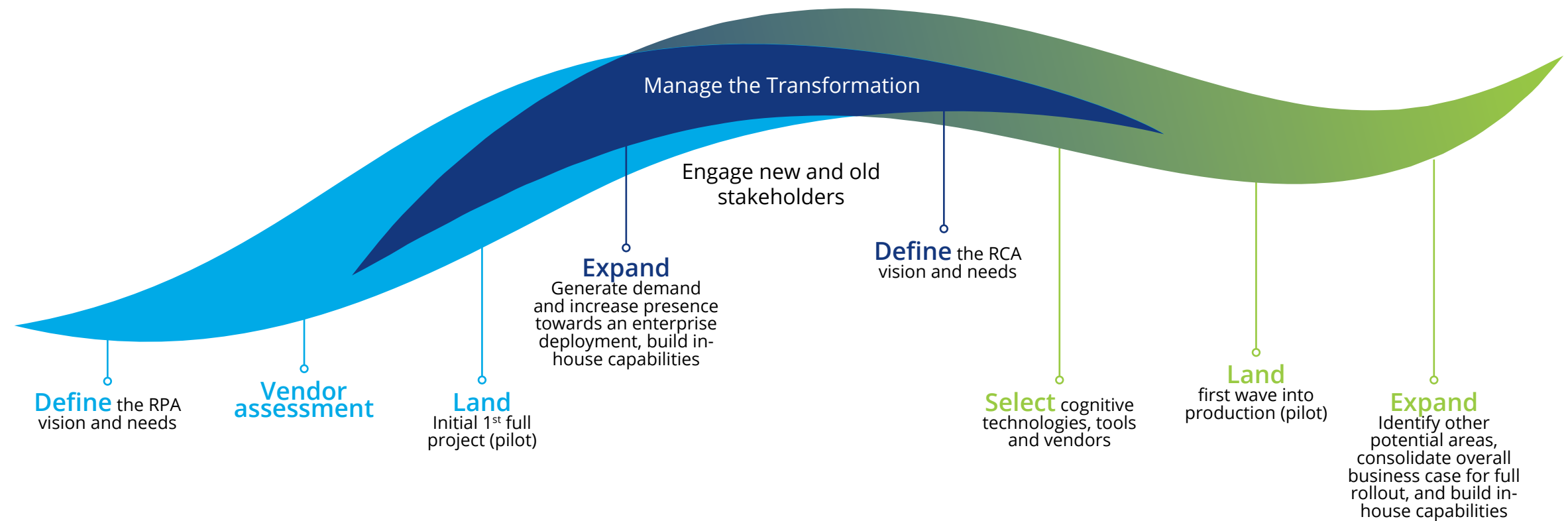
1. Crystallize your R&CA vision

Crystalizing your R&CA vision is an **iterative process**. As such, a good starting point is to imagine where you aspire to be as an enterprise (internally as well as externally).

In order to start the process of clearly defining your future vision, it is important to understand and clarify what resources are available to you today. Visioning the future, all the while assessing the current state, all form a part of this iterative process. To understand where the organization currently stands, its automation DNA should be assessed. On the one hand, it is advisable to look at the characterization of the technological organization type that can and should be in the view of business choices. On the other hand, the existing assets and platforms should be assessed. This does not mean deep diving into the micro details of each and every process or key element, but to rather gain a holistic understanding of the organization.

The end result is to clearly **identify the gaps** that need to be filled in order to move closer towards achieving your R&CA vision.

Defining your vision **is a strategic move** which can influence different stakeholders. Therefore, while determining your vision, it is important to gear up the organization to effectively handle potential resistance. Resistance to change manifests itself in many forms, but most commonly appears as an unwillingness of the organization's people to cooperate. This can raise many more pain points that span other areas of the organization, potentiality having little or no relevance to automation. It can be extremely valuable to embrace and resolve these obstacles, so as to better achieve the desired vision. R&CA is a transformation. As such, when taking this journey, obstacles, pain points and a resistance may all arise along the way. Thus, embarking on a successful R&CA journey, requires a proactive effort to manage the change of such a strategic move, by getting various stakeholders onboard. Many stakeholders, whether they are executives, or work in IT or operational roles will have a good understanding of the enterprise to facilitate a smooth and successful transition.

2. Plot your position on the RPA and/or R&CA waves

Manage the Transformation

Engage new and old stakeholders

Define the RCA vision and needs

Expand
Generate demand and increase presence towards an enterprise deployment, build in-house capabilities

Define the RPA vision and needs

Vendor assessment

Land
Initial 1st full project (pilot)

Select cognitive technologies, tools and vendors

Land
first wave into production (pilot)

Expand
Identify other potential areas, consolidate overall business case for full rollout, and build in-house capabilities

In order to catch the R&CA wave, organizations need to start off by successfully riding the RPA wave. But why? Imagine taking decisive action to improve your surfing skills. As part of the preparation, intensive research was conducted and a significant amount of money was invested in the best quality surf gear. Finally, after many practice rounds on the shore, you make it into the water. Soon enough an enormous yet perfect wave (in surfing terms) approaches you. In theory you are excited to conquer this wave with all of your learnings and top notch gear, but as the wave approaches, the inevitable becomes more obvious. The odds of being crushed by the wave become higher than successfully surfing it.

This comparison to surfing reveals an important business insight about taking measured steps before embracing a big challenge within uncharted waters.

In reality, embedding cognitive tools into an organization is more challenging than implementing an RPA project. Although both journeys will involve a business transformation, often rocking the boat until the waters stabilize, investing in an RPA project upfront has the following benefits:

- RPA presents an easier adjustment for staff in terms of process reengineering and adoption of RPA technology, compared to the adoption of cognitive tools.

- The business value from an RPA investment is very tangible and can be achieved within short timeframes. R&CA projects are often more complex and expensive than RPA ones, making it important to gain confidence and experience from RPA technology before approaching the bigger R&CA wave.

Here are 3 similar steps to consider when riding each wave:

1. Define your vision
2. Select your vendors, technologies and tools
3. **Adopt a Land & Expand approach.** An effective way of managing a transformation of this nature is to start off by landing a pilot project with just the right amount of project scope and agility to ensure success. The expansion part of the process involves generating a healthy demand for automation, increasing its presence within the organization and building in-house capabilities.

The amount of time spent on the RPA wave before transitioning into the R&CA wave, may vary from organization to organization. Here are some factors to take into account before investing in R&CA:

- When has the robotic potential been reached?
- Has the organization reached the optimal level of maturity to adopt cognitive tools?
- What was the time investment in assessing different cognitive vendors and determining the types of cognitive tools needed?
- Proactively manage the transformation by preparing for potential resistance to change from both old and new stakeholders alike.

3. Reassess connectivity and data availability

After plotting your place on the RPA and R&CA waves, it is necessary to review this position yet again. This is due to the fact that the availability of data forms an integral part of an R&CA journey. Cognitive technology requires data inputs to accomplish continuous learning and accurate predictions. Thus, the availability of data and regulatory restrictions will both impact how the future journey will unfold. Well-regulated data collection processes that comply with relevant data protection regulations should form an integral part of organizations today.

4. Take the next best step

In the end, the decision to surf or not to surf should not be influenced by today's popular surfing culture. This insight holds true when applied to the world of RPA and R&CA. R&CA is the next generational wave of intelligent technology that is set to hit the shore. However, the decision of what to do next should not only be influenced by today's R&CA trends. In preparation for this wave it is essential to take the next best action for your organization. This can be achieved by:

- **Seeking out mature and objective guidance from a trusted advisor and implementer.** It is important to obtain concrete advice from a systems integrator with the knowledge and depth of experience in business transformation management. This advisor should have knowledge across new generation technology options, business strategy and operations, human capital or change management and robotic automation.
- **Pilot a project** by focusing on opportunities with a small time to value gap, in order to not distract the organization from other high priority activities.

- Replicate positive results. Scale the successful elements of the pilot while continuing to monitor other elements of the pilot project.
- **Remember to fail fast!** Riding the RPA and R&CA waves is an unpredictable transformation. Adopting an agile mindset to redirect activities is an essential way to quickly obtain valuable learnings in order to achieve the set out vision.

5. Continuous learning

The first part of this paper established that there is a gap between the rate of technological evolution and speed at which organizations are able to adopt new technology into the workplace. Technology is evolving faster than the organization's ability to embrace it. We believe that this gap will continue to exist, since embedding any technology innovation into an organization takes time. As such, it is critical for organizations to continuously learn and keep abreast of technological changes and advancements.

When approaching the unchartered waters of the R&CA wave there will be many uncertainties and learnings along the way. Embracing a mindset that is open and flexible to continuous learning and re-optimization of key elements for ongoing improvement, is critical.

Technology
Evolution

Organization
Adoption
Technology
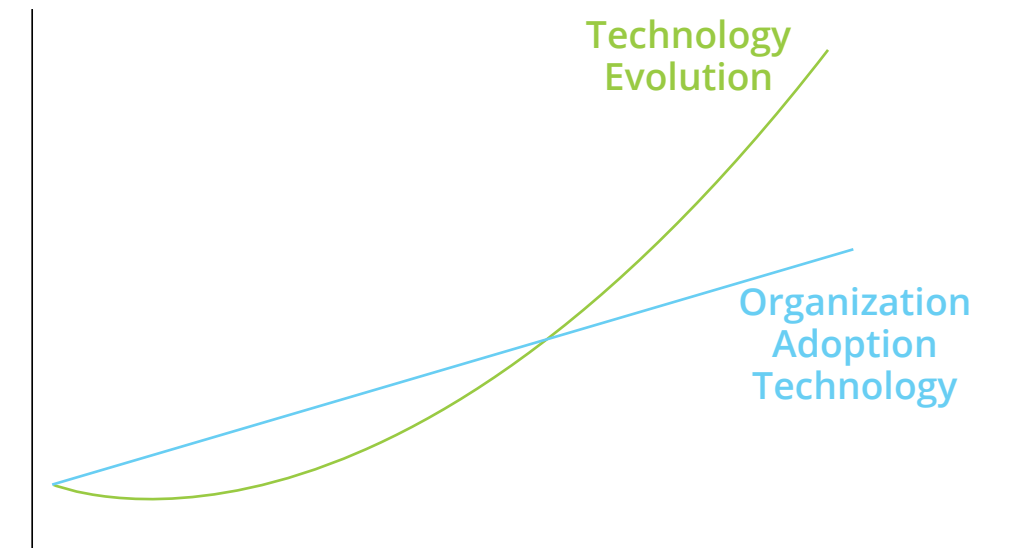
Closing words

The journey towards establishing a firm RPA foundation while also preparing to integrate more intelligent, cognitive technologies within enterprises today, is a multi-faceted and unpredictable adventure. In this paper, the combination of market trends and technological insights applied to a practical business case, is designed to give readers richer and more practical guidelines. Furthermore, the paper has been structured to equip organizations with more clarity and confidence to kick-start this new generation journey, with the presence of mind to remain open and flexible to readapting to new insights and knowledge along the way.

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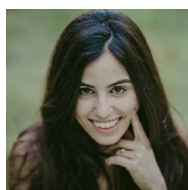
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Sources

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