

# **ROBOTIC PROCESS AUTOMATION**

Automation of Processes to Enhance  
the Human Component of Work 4.0.



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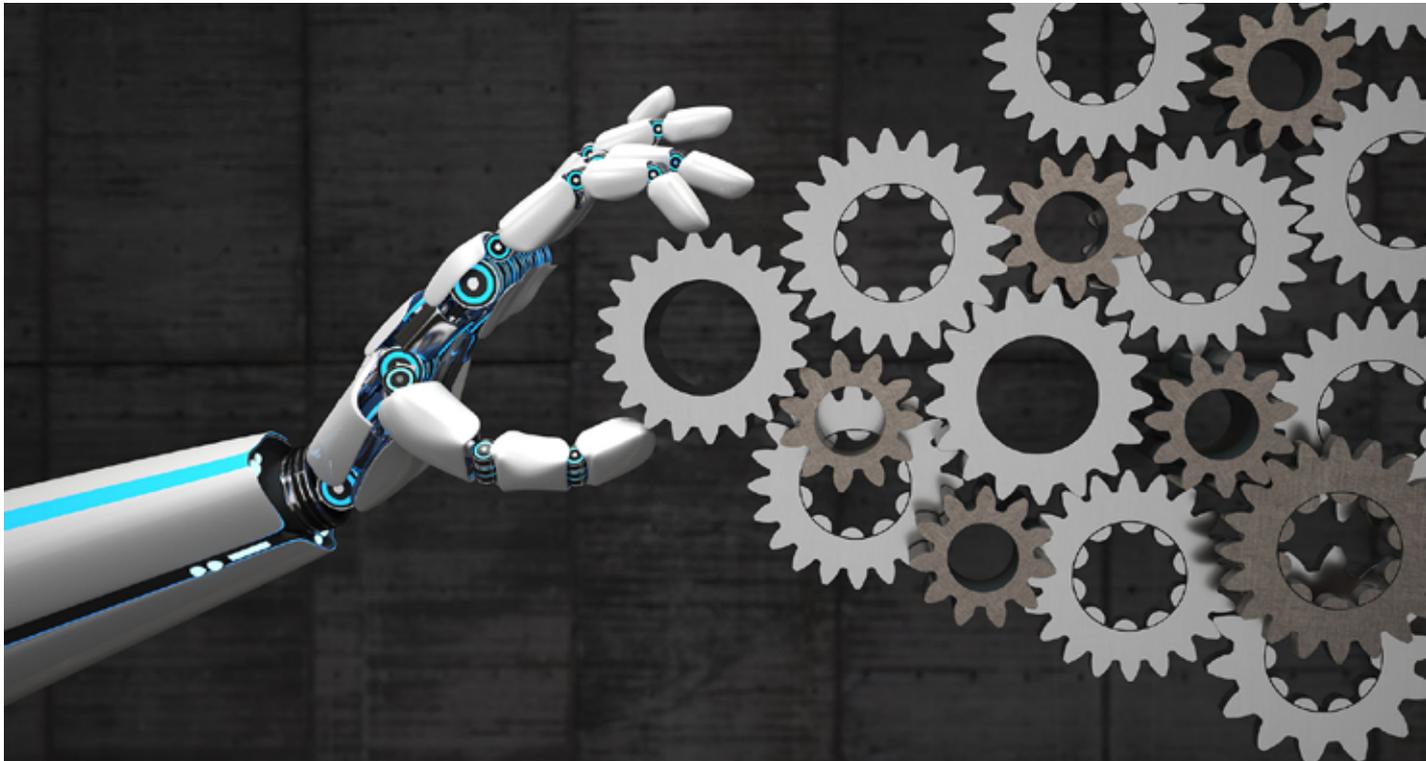
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# A FEW WORDS



Most organizations today understand the importance of investing in Robotic Process Automation (RPA). But on a practical deployment level, RPA projects are live and dynamic, naturally requiring fine-tuning and updates, to ensure smooth and successful project implementations. Use the right approach, technologies and methodology is the key for a successful RPA project. Find out our steps for choosing which processes are relevant for RPA, discover with us the value of RPA and define the identity of the right partner can stay with you in a RPA transformation path.

We are RPA Center of Excellence with a dedicated and trained team to support our Customer's Digital Transformation by adopting RPA.

# 1

## WHAT IS RPA AND ITS CLASSIFICATION?

The Institute for Robotic Process Automation (IRPA) defines RPA as the application of technology. This technology allows employees in a company to configure computer software or a robot to capture and interpret the existing applications for processing a transaction, manipulating data, triggering responses and communicating with other digital systems.



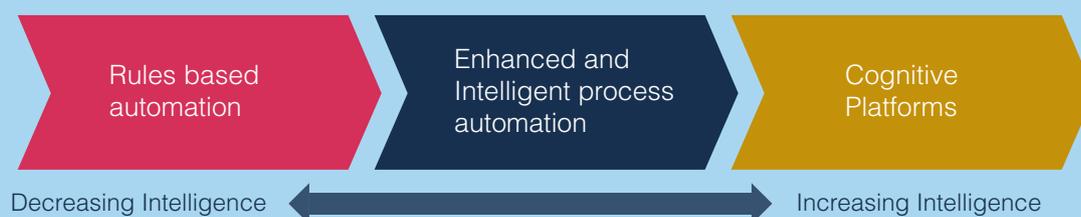
RPA emulates a "virtual human" and takes artificial intelligence and expert systems to a higher level. The ability of a software robot to adapt to circumstances and situations, compared with traditional automation systems, making it eligible for almost any function in an organization, in any sector. RPA holds the top position in any company's information technology infrastructure. It drives the existing application software in a more smart way as a human employee would do, with the same access rights. This allows any organization to implement the technology quickly and efficiently, without changing underlying systems and processes.

As markets and technology change and evolve, so do systems and processes. RPA enables companies to react quickly, without recoding or reconfiguring projects or developing new interfaces. RPA in one form or another will be around for a long time for this reason.

In short, RPA is an automation framework. However, it is not desktop software client automation like scripting, screen scraping or macros, which are easy labels to categorize it or diminish or dismiss its impact. These labels also make it easy to "understand" where it fits in the technology stack. RPA framework drives smarter customer service by integrating with leading cognitive computing technologies such as AI, Machine Learning, OCR, NPL, enabling RPA a major enabler in a Digital Transformation era.

## RPA Classification

There are three classes of RPA technology. The first one is basic process automation, which focuses on automating tasks that depend on structured data (data in spreadsheets, CSV and XML). Easier implementation and management of Class I automation is being increasingly adopted.



Class II, or enhanced and intelligent process automation, works largely with unstructured data as input (e.g., email and documents). This type of automation can learn from experience and apply the knowledge to process different requirements.

The third class, of cognitive platforms, can understand Customers' queries and execute tasks which previously required human intervention.

Classes of RPA technology and estimated cost savings:

| Level     | Types of RPA technology                     | Description  | Estimated cost saving |
|-----------|---|--|-----------------------|
| Class I   | Basic process automation                    | Macros, screen scraping and business workflow technologies in the presentation layer; not integrated into the IT system.                                   | 10%–20%               |
| Class II  | Enhanced and intelligent process automation | Technologies using natural language processing; able to understand unstructured data and apply it to process automation.                                   | 35%–50%               |
| Class III | Cognitive platforms                         | Cognitive computing systems that essentially attempt to solve problems in the same way as humans, by learning from experience and acting on that learning. | >60%                  |

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# HOW DOES IT WORK?



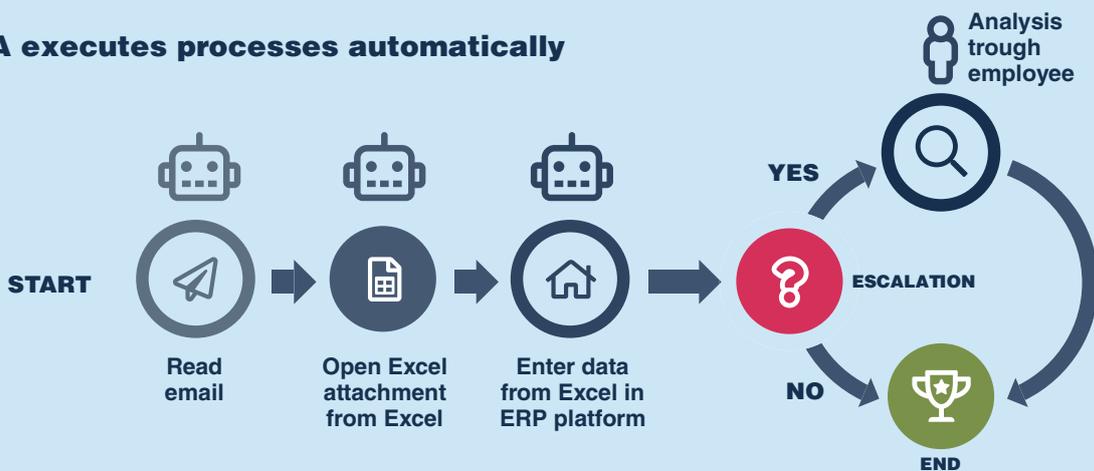
## ROBOTIC PROCESS AUTOMATION

Users, employees today are generally under pressure to navigate volumes of content and perform multiple tasks. Such tasks are not only demotivating people, they also open the door to error.

Engineering's advanced process automation solutions enable you to:

- Identify inefficient, automatable processes.
- Optimize these with guidance messages in context dynamic popup for next best action and real-time training, decision nodes.
- Simple design of intuitive unified desktop with quick links to data for accurate information, to help human work more efficiently, accurately and faster.

### RPA executes processes automatically



While Robotic Process Automation - also referred to as Unattended Automation, can also be thought of like a virtual employee. Server-based RPA automate complete processes that do not require human judgement or intervention. Our RPA works with your existing applications, process independent and thus carries out structured processes automatically. No changes have to be made to existing systems – RPA does the job just

like your employees do it. Thus RPA can automate a variety of processes by industry and by role, including invoice processing, report generation, employee onboarding and many more. With Robotic Process Automation, business processes are carried out quickly, without errors and fully automatically.



The unique collaboration of the human and virtual workforces reinvigorates humans to focus better and access creative thinking.

We create Collaborative Automation solutions with a combination of Smart Virtual Assistant and Robotic Process Automation. With this approach to human-bot interaction, people are not out of the loop and the robot is at the service of the person. We create empathic automation flows between humans and bots following the idea and approach to deliver automation for the people.

One example of such collaboration between "human & machine" comes from a Japanese automotive company. One of the pillars of their production system is known as Jidoka, or "Automation with a human touch": the concept originated in the early 1900s, when the manufacturer invented a textile loom that stopped automatically when any thread broke. Because it would stop and alert the operator immediately, it was easy to identify and eliminate the problem. Since the rest of the process was automated, employees could operate more machines and only engage when they needed to solve a problem.

Source:  
Jidoka – Toyota Production System Guide 2016



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RPA provides fast, guided assistance, shortens application times, facilitates responses in interaction with customers and counterparts and makes our work agile by enhancing and improving our performance on more advanced tasks that require our decision making.

**Loris Limonta**

Head of Operations Virtual Unit Branch, Banca Popolare di Sondrio

# 3

## **WHAT DOES RPA MEAN FOR YOUR ORGANIZATION?**

## ROBOTIC PROCESS AUTOMATION



An RPA project allows the organization to simplify its operational processes and improve the use of human capital through the automation of repetitive activities, with low added value or that present high risks of operational errors and, consequently, the enhancement of those with higher added value.

RPA solutions thus become part of the process of innovation, digitization and transformation of a company. With the launch of RPA projects, the company organization is able to achieve the following objectives:

**1**

Detailed knowledge of the processes carried out by the operating structures and the measurement of the commitment of the resources, useful tools for each assessment concerning the organizational choices and the presence of possible improvement interventions.



**2**

Review, in a very short time and with measurable results, of the business processes.

**3**

Dissemination of the culture of digital evolution, which makes it possible to identify opportunities for simplification and automation of activities.



# 4

Implementation of a system of organizational efficiency measures, reusable over time.



# 5

Agility in the development of automatic procedures according to a little invasive process of information systems and with a low involvement of IT professionals.

# 6

Possibility of synergistically combining RPA and other technological platforms, such as BPM, Document Management and specific tools such as Document Capture.



# 4

## THE VALUE OF RPA

## **DECREASED OPERATIONAL COSTS**

Offshore outsourcing has been the favored business strategy for reducing operational costs for the past few decades. This is because labor is very expensive in western countries compared with developing countries such as India, Bangladesh, Vietnam, and the Philippines. US multinational firms hired nearly 2.4 million offshore employees and cut 2.9 million jobs in the US between 2000 and 2010.

**One of the most powerful benefits of RPA is the scalability of its usage across industries: it can work 24 hours a day for 365 days a year with 100% accuracy.**

Offshore has its costs, but it is not nearly as high as payroll within the US. RPA technology has proven to cut the cost of an offshore full-time equivalent (FTE) to half.

## **DATA ANALYTICAL ABILITY**

The software robot generates process logs whenever it executes work. These contain a lot of management information (MI), which can be further analyzed for improved decision-making. This is possible at both the micro and macro levels of business processes. As processes are micro-managed, this would enable companies to track gaps and deploy measures to allow further optimization. In addition, through process mining methodologies and tools, it is possible to introduce the concept of "Process Intelligence", i.e. the collection and presentation of data for the purpose of strategic decision-making support on processes. The ability to extract data and build reports enables an in-depth view of the process, scenarios and processing times, exceptions and service levels. This Process Intelligence gives management a holistic view of how productive or unproductive process flows work, which path was the most quick and efficient - it means a best practice has been detected as a model to be replicated - or which path was slow and requires attention or a re-design or a new automation step.

## IMPROVED REGULATORY COMPLIANCE

Regulatory compliance is very important for companies expanding their operations globally. A fully RPA automated process would enable them to track every step and systematically document them. This helps companies to be more compliant with industry and audit regulations. Moreover, with the Attended Automation, users are guided in real time, in a context manner, to ensure that they are fully complied to the specific policies and procedures inside of the company.



## INCREASED EFFICIENCY

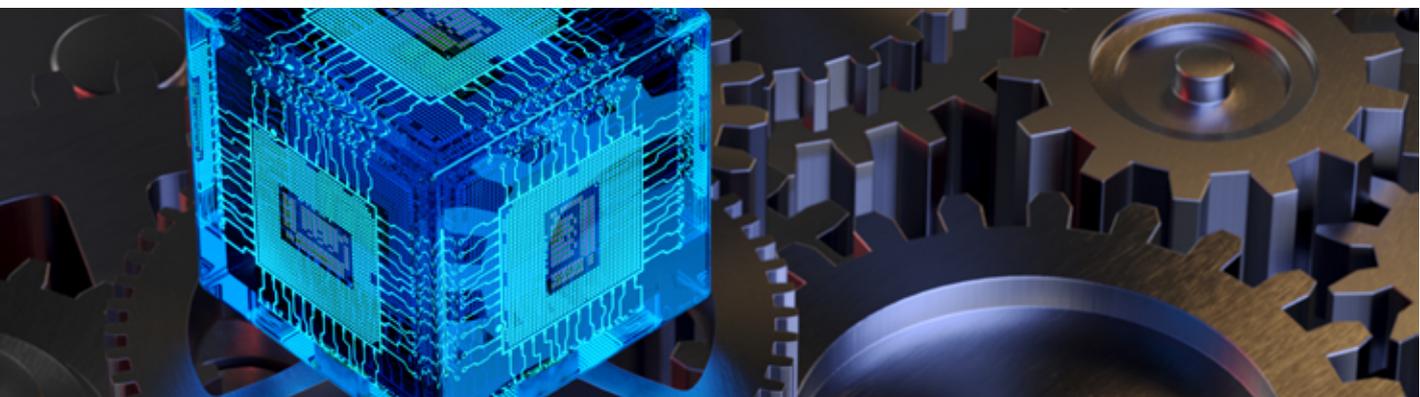
A software robot is capable of working all day, every day a year, and does not require any time off. Typically, a single software robot can replace two to five FTEs. Software robots can execute more work in less time, 24/7 with deliver results with 100% accuracy, thereby gaining control of resource requirements during peak processing periods.

## **INCREASED EMPLOYEE PRODUCTIVITY**

Employees can devote their time to complex tasks, adding value to the existing processes, while software robots handle repetitive, tedious jobs. They can be involved in activities that call for greater human intervention. This includes personal interaction, problem-solving and decision-making processes. This all adds on to employee productivity and benefits the organization on a broader scale. When used properly, process automation can empower users and reduce process-errors dramatically.

## **REDUCED ERROR RATE AND DELIVERY RISK**

Software robots virtually eliminate processing errors if a process is properly optimized and its subprocesses are mapped. However, they require testing, training, and governance to achieve desired outputs.



## **INCREASED CUSTOMER SATISFACTION**

Automation results in more efficient and error-free processes, giving employees more time for direct interaction with customers, enhancing their experience, improving customer satisfaction and building their relationship with the company.

# 5

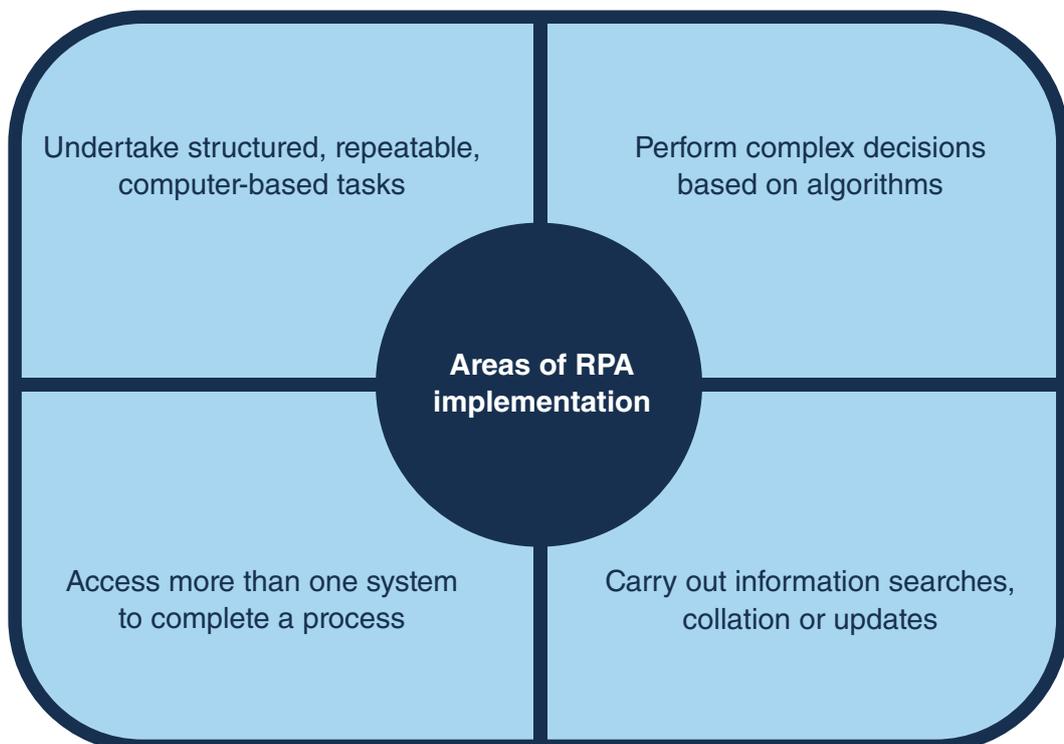
## **WHICH PROCESSES ARE RELEVANT FOR RPA?**

## ROBOTIC PROCESS AUTOMATION

Organizations are constantly identifying processes that can be automated. The best candidates for RPA have the following three key characteristics:

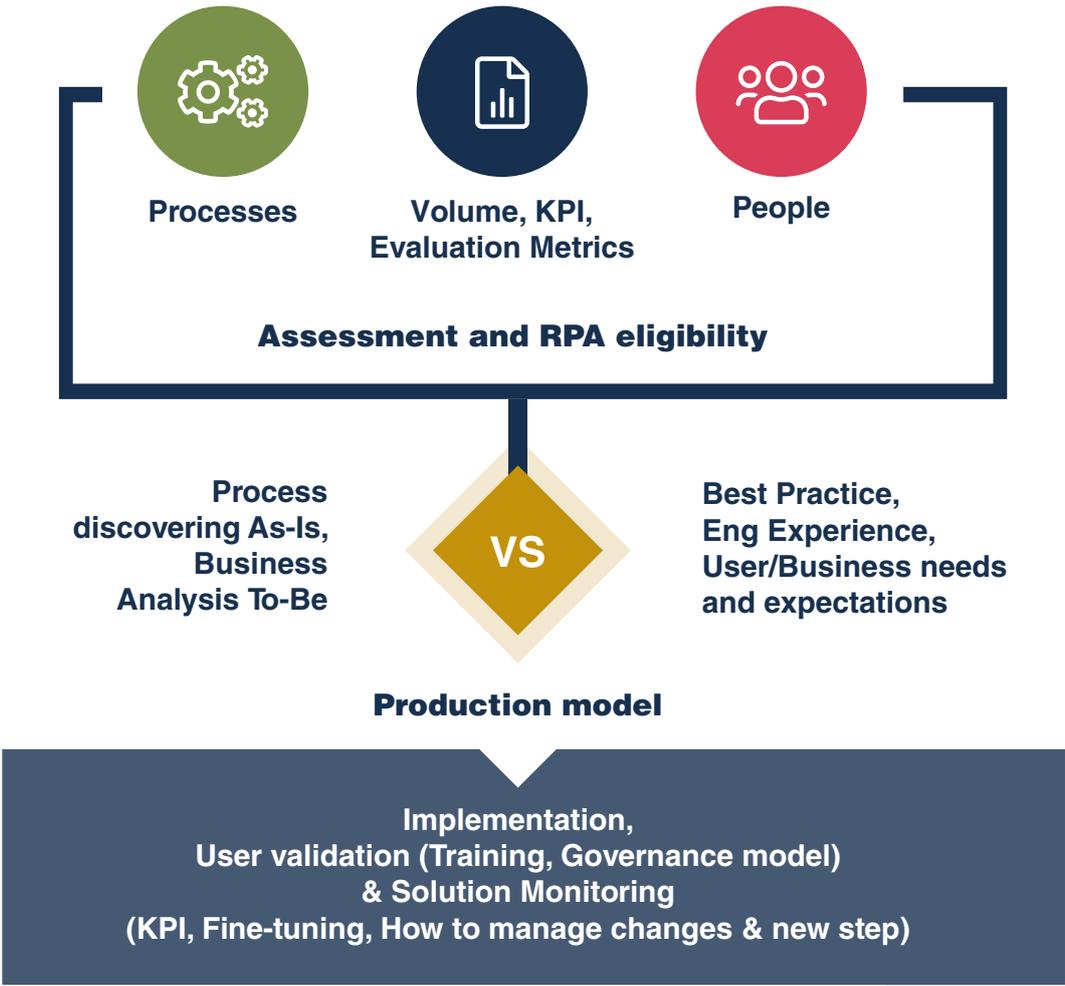
- Actions are consistent, with repeated steps.
- Template-driven, with data entered in specific fields in a repetitive way.
- Rules-based to allow decision flows to alter dynamically.

The figure below illustrates the effective use of RPA by individuals and teams:



Our approach is assessment-oriented through direct process observation and analysis. The framework is based on several steps:

- 1** Processes analysis to obtain a detailed activities map.
- 2** Time measurement of the processes using the observation and the resources interview.
- 3** Analysis results in order to find the RPA complexity and the potential benefits.
- 4** Creation of a decisional heatmap of the eligible processes for RPA.



# 6

## **STEPS IN AN RPA JOURNEY**

Every journey is unique, reflecting strategic priorities; timelines are also unique, varying in accordance with process complexities, resourcing and compliance requirements. However, we identified these three stages as part of every RPA evolution process.

# 1 PILOT

This first step does more than proving how RPA can boost success. It allows the organization to decide the role RPA tool should play on their Digital Transformation journey.

Enterprise first needs to identify a right automation partner - a partner with talent and competence - prior the technology selection and the implementation model.

At a glance, key activities include:

- Selecting the partner which will bring you on the right track of the Digital process transformation using rpa building an automation team and selecting the internal RPA champion.
- Running the processes analysis with one or more operational areas, looking the manual activities, checking with users their expectations having RPA and creating empathy discovering to-be processes
- defining a RPA implementation model for the organization.
- Identifying which operational area, wich processes and sub-processes would be the most candidates to automate and prioritize them defining one as a Pilot candidate.
- Developing frameworks—deployment, communication, and governance.

An automated process is run into production for the first time, according to the organization's implementation model. This means the organization and RPA partners apply defined requirements, a detailed solution design, test scripts and cutover/handover plans to the selected process.

Pilot performance is monitored in accordance with its exit criteria. In addition, all internal and external stakeholders are surveyed for feedback. This input is the basis for documenting lessons learned and revising methodology and frameworks before advancing to ramp up.

## **2 RAMP UP**

The primary focuses of this step are:

- Optimizing management of the newly deployed virtual workforce.
- Establishing best practices.
- Go forward with additional processes based on the prioritization scale.
- Measure automated processes and identify steps for continuous improvement.
- Continuing growing the internal automation team and its expertise.



During the ramp up phase, champions should accelerate activities designed to identify further RPA opportunities within the organization and showcase process automation successes to a broader business audience.



# 3 INSTITUTIONALIZE

The point of this final step is to establish best practices for robotic processes automation as a baseline activity within the organization. Specific examples include governance board to manage the process automation pipeline demand, disaster recovery and business continuity plans, continuous improvement based on Lean Six Sigma with the automation team.

Beyond including these practices into the organization's culture, this moment should also include a continual evangelizing of RPA benefits based on existing implementations, while promoting RPA as a key performance objective across all business lines.



Today, business processes face a number of challenges associated with them, such as the non-interoperability of different back-end and front-end systems, which is fundamental for customer interaction. Quality, speed, data accuracy are of vital importance and for this reason process automation, both desktop assisted automation side for contextual user guidance and data-entry control, and unattended robot side, can only bring advantages. We started with fairly simple first projects, on processes in which it was successful to combine assisted automation with user processing on local PCs, modelling in fact a process that is not always linear in a 'educated' process. Today, we have automations in production even on processes of medium-high complexity, some 'educated' performed from the virtual robotic pool, others with the ability to handle exceptions: this ability is an essential component of our tool RPA, with a solid management of exceptions, automation can operate in an agile and reliable way. The Engineering D.HUB component has also proved essential: having a team of Automation Design Architects certified on RPA technologies, has been fundamental both to make bot-automation faster and have constant, robust support, and to learn the correct methodological approach to be able to develop new internal RPA professional skills, creating in itinere an RPA governance model to evolve in the future into a center of excellence on the CoE model of Engineering D.HUB.

**Stefano Deltedesco**

Robotic Demand Manager, Banca Popolare di Sondrio

# 7

## WHAT DO WE DO?

Engineering D.HUB is an  
internationally Certified RPA  
Center of Excellence (CoE)



Center of Excellence (CoE) is a team, a shared facility or a talents entity that provides leadership, best practices, research, support and/or training for a focus area – in case of Engineering D.HUB – Advanced Process Automation Solutions. Finding new and on-going automation opportunities, scaling robust automation and ensure long term value realization.

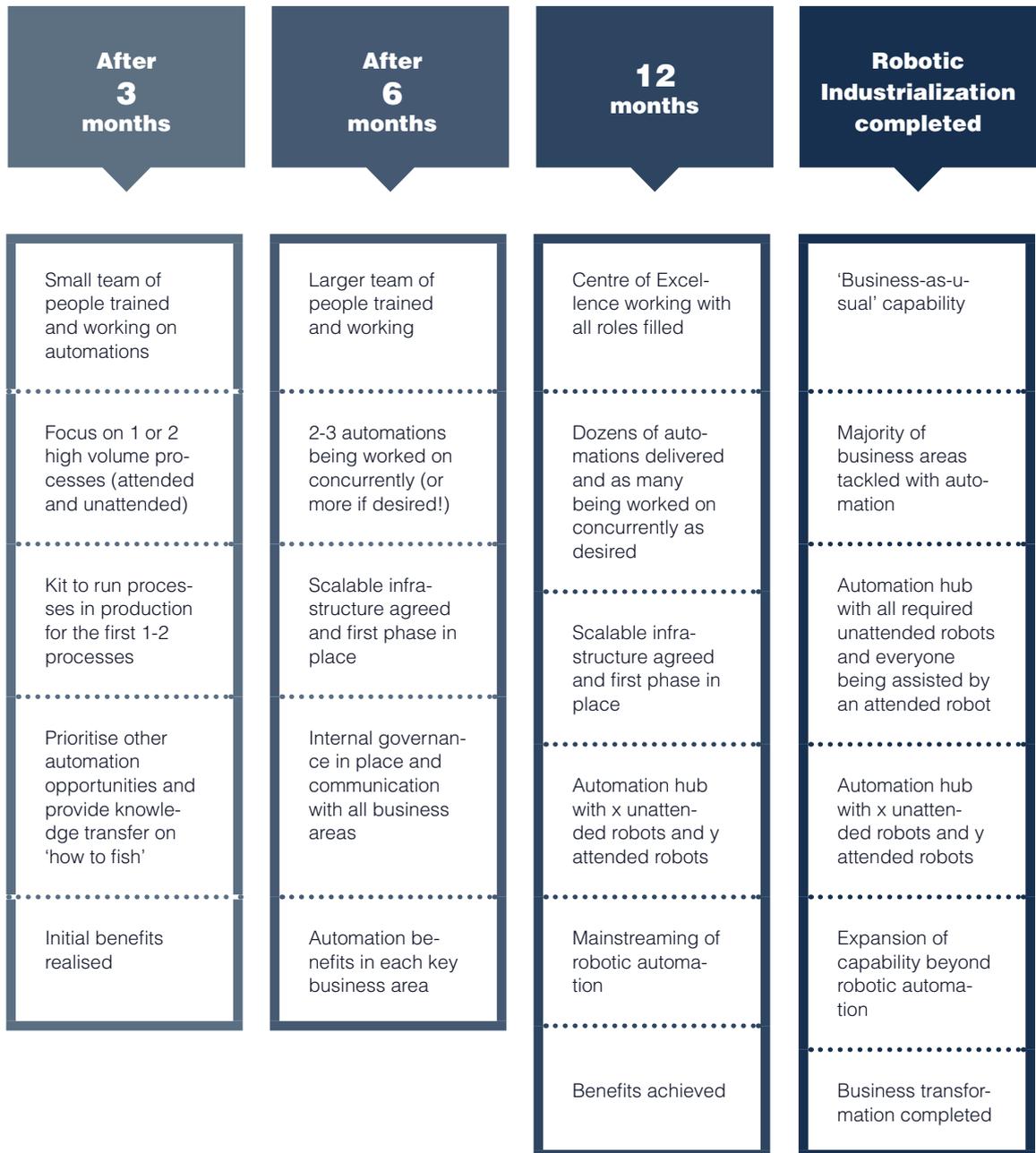
## WHAT DO WE DO WITH RPA?

We support our Customer's Digital Transformation by adopting RPA as a platform for widespread and mature use of Artificial Intelligence and Data Analytics technologies.

Thanks to our consolidated consulting experience in the analysis, optimization and documentation of operational processes, across various reference markets, leads our CoE to create the user journey of the new Robotic Industrialization experience, whose goal is to enhance the human dimension of the work, improve the satisfaction of the end user and optimize the performance of the organization.

The service offered is related to training on the correct methodological approach to process automation, with on-site sessions and remote tutor (virtual classroom), enabling a Robotic CoE team within the Customer responsible for process discovering, design, implementation, release and governance model of their RPA projects to lead and maintain all automation projects coordinating security, testing and audit data of the deployment in pre-production and post-production.

# CUSTOMER LONG TERM COE JOURNEY: HOW TO BUILD IT?



To support this vision, we make significant investments in a dedicated CoE and expert certifications on products and solutions from market leader suppliers.

The ability to manage and implement the services provided, as well as the technologies, tools and methods indicated constitute a wealth of knowledge and experience that Engineering will make available to the Customer for all services offered.

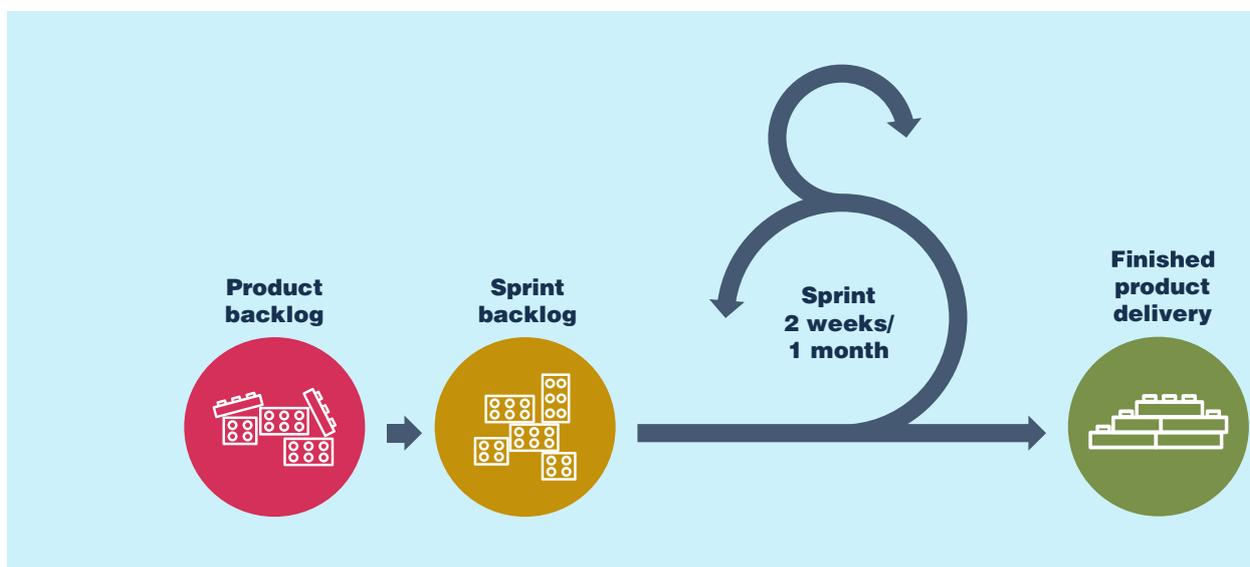
Engineering D.HUB bases the design of its services on the best reference practices of the following frameworks:



The Methodology that Engineering D.HUB uses for the realization of RPA projects is based on the Agile/Scrum framework.

Scrum, in fact, is the most widespread Agile method, iterative and interactive, based on continuous interaction with stakeholders, allowing you to easily make changes to the project and is particularly suitable for complex and innovative projects.

The method is based on the principles of transparency, inspection and adaptation.



The practice of RPA (Robotic Process Automation) of Engineering D.HUB has obtained the certification as Center of Excellence as a member of the NICE automation certified CoEs.

This result has been achieved thanks to the excellent work that every day our business analyst and RPA architect do for our customers, supporting them in the efficiency and automation of processes in both Business and IT.

Another important step that enriches our practice in which we continue to invest and grow as a key point of Digital Transformation.

# 8

## HOW RPA WILL EVOLVE IN THE FUTURE?



## **The big question is: Where is RPA headed? What does the future of RPA look like?**

The development of RPA technologies has already come a long way from the days of simple screen scraping, and RPA continues to transform how many companies approach their business activities, especially when it comes to scaling and streamlining processes. It's a superior technology that has made it's a way to the forefront for the benefits it provides and the

ease at which these benefits can be obtained. Yet, the market is expected to continue to evolve even further and more innovative RPA solutions are predicted to emerge. The use of classic Robotic Process Automation is now considered mainstream and no longer confined to the back office.



In a race to satisfy ever increasing and more sophisticated Customer demands, global businesses are acknowledging the need to expand their digital services and capabilities. With this in mind, it is no surprise that the market has seen a steady growth in the adoption of RPA solution, which is predicted to reach a market value of BN 98\$ globally by 2020.

Source:  
RPA vendor companies 2017' survey



Industry analysts expect the combination of RPA solutions with even more intelligent technologies has great potential for widespread adoption across all industries. Machine learning and cognitive computing, for example, are technologies that involve learning on the part of the computer or software beyond their initial programming, much like a human would respond in similar scenarios. These platforms are able to deal with unforeseen errors and exceptions in a business process, learning from and adapting based on previous actions and experiences. Unlike traditional automation, they are able to apply judgment and creativity to their work, which will essentially allow companies automate enhanced visibility, transparency, communication, and collaboration across their value chain.

## ROBOTIC PROCESS AUTOMATION

### COGNITIVE COMPUTING

generates intelligent solutions by interpreting reality



### RPA

repetitive and autonomous activity

It only seems natural for instant chat and Robotic Process Automation to come together in contributing towards the customer self-service revolution. Fully integrated into backend systems, robotic automation has the capability to bring more cognitive intelligence to chatbots by executing bespoke customer requests. This deepens the cognitive ability of the chatbots to handle a greater volume of customer requests in real time. The emergence of more intelligent chatbots is just the start of expanding the 24-hour customer self-service domain, giving customers the flexibility to interact with service centers within a timeframe of their choice.

With the addition of RPA to increase speed and provide process automation support, the journey of machine learning and the development of even more intelligent technology will only be rapidly accelerated. The days of cognitive automation are on the horizon.

According to a Forbes prediction, 38% of organizations believe that AI and robots will be "fully implemented" in their companies within 5 years.

Software robots are already able to automate simple, repetitive processes, and through the combination of RPA with these intelligent platforms, they will soon be able to improve their own performance and make complex decisions with little intervention or programming, by continually learning from human input.

Having said that, the human workforce still plays a critical role in service operations. While intelligent cognitive robots are performing some customer facing and back office tasks, the human workforce is fully present to deal with more complex high value driven issues.

This has the potential to make companies more agile and responsive, which is crucial in today's increasingly global and complex marketplaces.

More is yet to come. AI, Cognitive and RPA as a combined group of tools can achieve organizations' goals of optimizing business activities and address IT challenges in the digital age or industrial 4.0 revolution.



Banca Popolare di Sondrio has approached RPA technology since the end of 2013 with the aim of reducing the time required for low-value manual work and helping users to increase competence, performance and quality of work performed. With this approach to user-robot interaction, we started thinking digital and working digital, the change-era is no longer seen as a potential obstacle and the consolidation of the RPA solutions implemented has allowed us to achieve the results we expected. Moreover, today we can say that RPA technology is one of the tools of a large IT toolbox that will be increasingly applied in a world where applications proliferate and target is Cognitive computing. We found RPA to be a complement to IT functions, to business systems, not a replacement.

**Angelo Panizza**

Chief of IT Operating and Systems, Banca Popolare di Sondrio

# ENGINEERING

Engineering is one of the main players in the field of Digital Transformation of public and private companies and organizations, offering an innovative range of platforms for the main market segments.

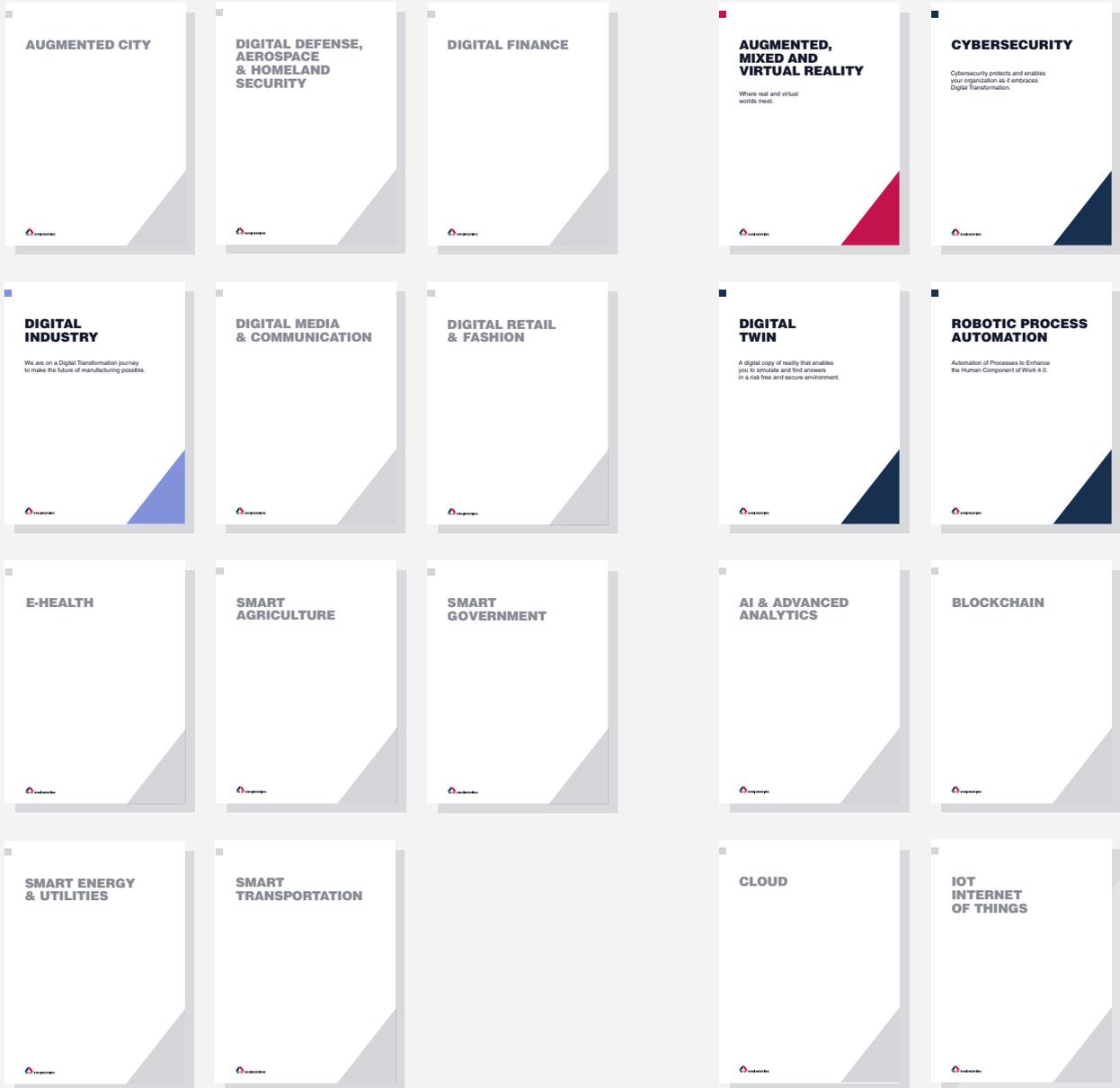
With around 11,000 professionals in 65 locations (Italy, Belgium, Germany, Norway, Republic of Serbia, Spain, Sweden, Switzerland, Argentina, Brazil and the USA), the Engineering Group designs, develops and manages innovative solutions for the business areas where digitalization is having the biggest impact, including Digital Finance, Smart Government & E-Health, Augmented City, Digital Industry, Smart Energy & Utilities, Digital Telco & Multimedia.

Through its activities, the Group contributes to modernizing the world in which we live and work, combining specialist competences in next-generation technologies, technological infrastructures organized in a single hybrid multicloud and the capability to interpret new business models.

With significant investments in R&D, Engineering plays a leading role in research, by coordinating national and international projects thanks to its team of 420 researchers and data scientists and a network of academic partners and universities throughout Europe. One of the group's key strategic assets is its employees' know-how, to whose training it has dedicated a multidisciplinary School which has provided more than 21,000 days of training during the last year.

[www.eng.it/en](http://www.eng.it/en)

# Our point of view on



# ROBOTIC PROCESS AUTOMATION



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