Robotic Process Automation
A Pragmatic Approach to Digital Transformation

“Achieving change with greater agility and control while minimizing operating costs”
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Introduction

With this white paper, we wanted to provide you with the most comprehensive information on Robotic Process Automation. We are confident in the groundswell of business process automation, independent of the buzz the approach has generated in recent months.

We were able to capitalize on some 15 years of learning and experience, during which we played a role in major companies moving along the path toward robotization. Through the experience we accumulated, we now know that companies cannot afford to waste time in launching an RPA initiative.

Clearly, RPA must be planned out completely, making the most of the complementary approaches. However, companies involved in RPA should set their priorities pragmatically and avoid a scattered effort on multiple fronts.

From this standpoint, feedback from our customers and partners clearly demonstrates that leveraging is improved by first roboticizing processes on workstations. By starting with workstations, or “attended RPA”, and focusing initially on the most repetitive and time-consuming processes, employees are motivated to support the company’s digital transformation initiative with the quick production of results. Robotic Desktop Automation makes it possible to:

- **Revamp the customer experience** by making it easier to offer customized solutions
- **Improve working conditions** by guiding the user and eliminating repetitive actions
- **Bring agility** to the information system by facilitating quick wins in rapid ROI
- **Maintain compliance with procedures** by ensuring strict enforcement of regulatory controls
- **Minimize operating costs** by increasing the time spent on value-added tasks

Then, we can obtain added efficiency through increased effort by implementing “unattended RPA” on servers.

Ultimately, the company will reap maximum benefits from robotic process automation in just a few months, from front office to back office. This process will then continue with the gradual implementation of artificial intelligence algorithms... which will further compound the effectiveness of the “augmented human”.

**And now, it’s your turn!**
RPA

Robotic Process Automation (RPA): This acronym, which first appeared in 2015, has been cited in recent months as a vital technology trend for the coming years.

IT analysts, including the widely recognized Gartner and Forrester, and more specialized observers like HfS and Everest Group publish research documents aiming to assess the impact of robotizing business processes and identifying market players.

Key Findings

- Most RPA tools vendors do not have an implementation division to deploy RPA, and are working with consultants, system integrators and/or BPO providers.
- Massive proliferation of automation and artificial intelligence (AI) vendors and tools will continue.
- Organizations should not hope that one RPA tool will solve all of their automation needs. It is a need for them within their operations.
- Architects must understand the capabilities of these tools and evaluate the errors, speed up processes and link applications together. Enterprise

Recommendations

- Do not try and make one RPA tool answer all your organizations automation needs; the potential each tool makes sense in contrast to other software or AI tools.
- The potential RPA vendor to ensure alignment with your organization's architectural direction.
-深耕运营自动化，提升企业运营效率。
Major consulting firms like Accenture, Capgemini, Deloitte, EY, and McKinsey have also tackled the subject. Addressing their large corporate clientele, they agree that automation is a major shift that triggers corporate digital transformation via short projects with a quick return on investment.
For 15 years, Contextor has offered its customers software solutions, on a daily basis, to automate business processes by relieving computer workstation users of having to perform tasks that are necessary, but lack added value.

With more than 50 customers having deployed nearly 100,000 software robots, according to industrial logic, we developed expertise in RPA long before it was in fashion. As a result, we feel we have established some legitimacy to speak from and the ability to observe market expectations and evaluate operating performance, beyond passing fads and the buzz of the moment.

The sole ambition of this white paper is to share our vision and experience with you.
What is RPA?

In large companies, computer workstation users spend a great deal of time interacting with the information system’s various applications. To perform their job, they often are required to re-input data multiple times, to copy-paste data from one window to another, or to compare and check information from two different applications. Robotic process automation (RPA) consists of implementing “software robots” to automate as many as possible of these tedious tasks with no added value.

This “white-collar robotization” approach frees up 15-30% of the user’s time, which can be better spent on actions that provide true value for the company and improve the quality of the service delivered to its customers.

Such automation therefore improves employee working conditions, which is only one of its advantages. Employees who spend their workday in front of computer tools will better adopt management’s strategy for accelerating the company’s digital transformation.

Workstation or server: which should be the focus of automation? Software Assistants, Robotic Desktop Automation, or “Attended RPA”

A company’s business processes involve its entire information system, from the database servers where data is stored to the applications and then to employee workstations, with access to major transaction systems, client-server systems, the intranet/extranet, the CRM, the ERP system, EDM, and more.

Automation can be carried out at the workstation level, where a software robot will perform interactions in place of a human being. Like a human, it will read the contents of an application window, locate fields containing the useful data, copy the data to another window, launch a transaction, and so on. When performing these tasks, the robot can return control to the person in front of the workstation, if necessary, so that the person can make a decision that requires their intelligence or business experience. If needed, the robot can perform checks on the data it handles, which provides the company with additional guarantees in terms of compliance with certain regulatory requirements and the quality of the result of the performed processes. This aspect of Robotic Process Automation, where the robot acts like the software assistant of the human being, interacting with the workstation while complying with business logic, is called “attended RPA”, or Robotic Desktop Automation (RDA).

Its implementation is very quick since it is done at the workstation and therefore within the periphery of the IS. “Attended RPA” has no impact on the information system and does not require any intervention with applications, which continue to operate unchanged. This means that Robotic Desktop Automation projects are short, and their ROI is quick. It takes only a few months to see a benefit from a solution that frees up 20% of the time for tens or even hundreds of employees. And assuming that workstations will not be simplified by magic anytime soon, “attended RPA” solutions will benefit companies for many years!

Standalone software robots or “unattended RPA”

Automating certain processes can also take place at the server level, without any human being interaction. A software robot itself can use applications to retrieve information, apply control rules to that information, execute processing to produce new data, and then inject that new data into other applications through their
user interfaces or application program interface (API). This aspect of Robotic Process Automation, where the robot works alone, in “the bunkers” of the information system” is called “unattended RPA”. However, the standalone robot remains under the supervision of human beings, as it is necessary to monitor the execution of processes to ensure they are successful. If a problem occurs, a human expert (a “robot supervisor”) must determine the cause, correct it, and then restart the robots so that the process resumes where it had stopped.

Because they are installed on servers and therefore within the information system itself, “unattended RPA” robots require allocating a bit of infrastructure. Also, because they act directly on application data, they need to use APIs, which requires programming work. This means, not surprisingly, that “unattended RPA” projects are often more complex and therefore require more time, especially when being implemented in a production environment.

And what about ROI?

Let’s consider a major bank, an energy supplier, or a telecom operator. These companies have existed for decades and have millions of customers. To serve them and keep them informed, they have gradually built teams of customer advisers, who now total some hundreds or even thousands of employees. They have computer workstations and applications at their disposal to find the information they need for their job and to launch actions to respond to customer requests. But, as we saw earlier, the complexity of the information system is often apparent on the workstation. By looking closely at the work of these customer service advisors, we find that a significant portion of their job involves having to re-input data multiple times, copying-pasting data from one window to another, or comparing and checking information from two different applications. Many of these tedious tasks with no real added value can be delegated to a software assistant... and a quick calculation shows what we can expect as the return on investment in such an operation:

Let’s assume that each software robot frees up 25% of the employee’s time throughout the day. This is commonly observed in “attended RPA” projects. In a front-office team of 300 people, serving 4 million customers, this equates to 75 full-time equivalents thus freed up for actions that create more value. With the same 300 people, the company can serve 1 million additional customers, with employees who are more motivated by better working conditions. The ROI of the “attended RPA” approach is both quick and substantial.

In addition, the same company can also partially automate the tasks of about a hundred back-office employees. We find today that about 10-20% of back-office activities are fully automatable and can be allocated to a standalone robot. Other, more complex activities are not fully automatable because they require a human presence to evaluate complex situations and make intelligent decisions. A standalone software robot is now capable of executing the equivalent of the work of three people. Consequently, to automate 15% of all back-office processes, we will introduce five robots alongside the 100 people already in operation, to have the equivalent of a team of 115 people. There is a real ROI in the “unattended RPA” approach, particularly in terms of compliance with procedures, but it is lower in value and slower over time.

To total, by deploying 300 software assistants and 15 standalone back-office robots, the company, which will have optimized the work of 400 people and saved the equivalent of 90 additional employees, is ready to face significant growth in its activities. Because the annual cost of deployed robots is significantly lower than the cost of a human employee, the project’s ROI is counted in months.
Success stories

Contextor has had the opportunity to guide many customers in a broad variety of sectors, including banking and finance, energy, telecom, and retail, through their first RPA projects. Some of these projects have been highly successful, and we wanted to present them here to share this precious feedback.

Bank

Energy

Telecoms
The challenge

In June 2013, a large French bank launched a new online bank product on the European market, en France, Germany, and Belgium. Opening customer accounts online in a web environment triggers a complex process. It involves checks, validations, and administrative steps in the parent company’s back-office central computer systems.

The activation process includes seven verifications and five data and documentation checks. It internally activates several management and administration capacities for the new customer account, involving 17 data processing operations. In its original architecture, the processes had breaks and lacked control and consistency, which was a source of complexity and error.

General Management therefore wanted to optimize its account activation processes by automating controls and roboticizing its verifications. Also, it was important for operators to provide assistance in appropriating and conducting the activation process.

The Contextor solution

Contextor experts implemented robots to automate all of the control tasks and systematize the verification checks. These assistants launch many third-party applications, such as Bank of France and credit check, in the cloud. They ensure data quality, information consistency, and subscriber eligibility.

In addition, creating a context-based banner on the workstation made it easier to master the tool. It was easier to learn the processes, resulting in fewer implementation errors. Operator performance was boosted by a significant reduction in the number and nature of clicks.

This context-based banner also offers real-time support for activating accounts, with a progress status dashboard, call to the next step, and next best action. This device allows the adviser to more easily appropriate and control the activation file.

Robots support the operator’s decisions, while taking over the unpleasant and redundant tasks.
The Contextor effect

- Increased efficiency and effectiveness among agents
- Controlled IS development
- Quick integration of technologies, such as 3270, web, and Windows, without affecting business applications
- Improved success rate at customer account activation
- Significantly reduced average handling time (AHT) for account activation
- Creation of a context-based banner (dynamic panel)

A few figures about the project

- Implementation time: 6 weeks
- Operations deployment: 1 week
- Average handling time: -80%
- Dedicated desktops: 200 robots
- Cross-applications: 12 applications

Customer testimonial

“For our bank, the issue was to quickly integrate a major functionality for the group - the application for opening a bank account online - all while streamlining the learning of back-office business processes.”
The challenge
In 2010, because the energy market was focused on opening up to competition, implementing a new solution for managing customer relationships remotely for a major French electricity producer was especially complicated, lowering user efficiency and comfort.

In addition, the dividing up of distribution and network activities separated complementary activities into the two entities, with different governance rules. Finally, complex processes were shared by different providers and partners.

In a strategic vision to improve customer relationships, the electricity provider’s departments expressed a desire to have a simplified and user-friendly navigation interface. The challenge was both to improve communication between operators and to generate personalized offers in real-time.

The group chose Contextor as a developer and integrator of application assistants to help navigate and manage the customer relationship.

The Contextor solution
The experts at Contextor worked toward two goals: a navigation robot and a customer experience management assistant.

The navigation robot automated relationships between applications and between companies. It changed the appearance and functionality of external applications to make them accessible and compliant with the business process. It automated external queries (references and counter identification) and helped with the inputting of use indices. It helped with real-time searches and migrations of administrative and technical data, by filling in and checking the fields.

Also, creating a simple button to launch contextualization operations on the workstation made it possible to easily integrate the assistant into customer administration processes. Agents adopted it easily and successfully.

The customer relationship assistant provided online support for users. It stores all of the agent’s sold products and services and provides online support for additional sales. This includes assistance with reading customer accounts and generating proposals (Next Best Action) in order to contribute to the overall improvement of the advisor’s performance. The Contextor assistant supports the operator’s decisions, while taking over the unpleasant and redundant tasks.
The Contextor effect

- Dialog between an operator and between systems
- Reduced average handling time (AHT) for the customer relationship
- Fewer rejections and errors
- Eliminated manual steps with low added value
- Improved customer satisfaction
- Staff compliance with irritating business procedures

A few figures about the project

- Proof of Concept (POC) : 2 weeks
- Full operational deployment: 5 months
- 10,000 desktops equipped with robots
- Customer potential 27,000,000 people
- DTM: reduced by 3 minutes per call
- Increased performance: ± 137 FTE
- ROI : < 5 months

Customer testimonial

“Efforts to achieve efficiency gains through navigation com- prise an innovative and highly appreciated approach. The Na- vigation Assistant is based on a technology that offers flexi- bility and responsiveness.”
The challenge

As part of a strategy to upgrade a mobile phone operator to highly personalized customer service, redundant information processing with no added value had to be optimized in 19 business applications (back office, internal, and external).

This included launching, processing, and using management data or contract simulations from multiple, dispersed data. Manual data entry and complex post-operative processing presented a high risk of error.

Even more, organizations, methods, and tools had to be aligned effectively with a global approach to create a virtual customer relationship portal.

The Contextor solution

The Contextor team installed application assistants to optimize and streamline the operation of user workstations. The optimization focused more specifically on setting up crossfunctional business processes and on integrating application units and disparate, often non-interoperable technological environments, such as CRM tools, ERP systems, Microsoft software, central business applications, web interfaces, and client-server applications.

Contextor also supported the implementation of an automatic action logging function, which is essential for dynamic and attentive customer management. A robot would automatically produce a summary of interactions and thus describe changes in the customer relationship. This function is an effective tool for conducting business activities (BAM). Contextor fully respected the integrity of the particularly complex backbone architecture and adapted to the business.
The Contextor effect

- Increased customer relationship quality
- Automated manual actions with low added value
- Improved recovery of nomad clients
- Reduced average handling Time (AHT) by -15% in front office
- Customer data summary and reliability for 180° vision

A few figures about the project

- Full operational deployment: 8 weeks
- 4,500 desktops equipped with robots
- DTM: reduced by 15%
- ROI: 3 weeks months

Customer testimonial

“Contextor was the right solution for going from a simple call center to a customer relationship personalization solution. It integrated value-added services on the workstations, without affecting the applications. Since then, our company has been named “Customer Relationship Center of the Year” on multiple occasions.”
What makes an RPA project successful?

We have learned lessons from successful projects by our customers, and we can provide you with some insight on the key success factors of RPA projects: in short, **pragmatism** and **agility**.

**Be realistic**

Imagine that you just completed masonry training. Would you immediately start building a cathedral? Probably not. The same logic applies when embarking on process robotization for the first time. Experience proves that, if you start by imagining the end-to-end automation of the most strategic, most complex processes in your company, you will go too quickly, experience disappointment after disappointment, and your project will likely end in failure.

Don’t make this mistake! **Start with a process consisting of just a few simple tasks performed very often by a large number of employees.** Just as “small streams make big rivers”, the automation of simple processes generate the best return on investment.

Indeed, experience has proved that we must start by creating a complete inventory of processes in order to identify simple, but repetitive processes without complex, but recurring rules, so that they can quickly be automated. This will quickly yield a significant benefit for employees, whose working conditions will greatly improve. They soon adopt the RPA initiative, support it for other purposes, and become actively involved in the company’s digital transformation.

**Take advantage of complementary tasks and IT**

Another error would be to view RPA as a technological approach, rather than as a business tool. Your RPA projects should be managed very pragmatically by small teams of business experts and IT specialists.

From a business perspective, you should not only have good functional knowledge of the processes in how they have been implemented and documented, but you should also closely observe how employees work day in and day out. It is important to find out how they occasionally adapt or circumvent processes to address specific cases as not originally foreseen. In addition, to better prioritize the processes to be automated, we can use tools for systemic information collection. By capturing all actions performed on a workstation for several days (clicks, keystrokes, flipping between applications, etc.), we find breaks in processes, as well as sources of lost time and efficiency.

On the IT side, you need a clear view of the capacities and limitations of RPA tools, particularly with regard to the specifics of the company’s information system, its architecture, and its components. Not all RPA solutions are capable of handling the automation of 3270 mainframe applications or operating via workstation virtualization solutions like Citrix.
What is the impact on “white-collar” jobs?

Alarming information has been published by the media in recent months about the massive elimination of jobs that may occur due to automation and robotization, which now affects not only manufacturing, but also the service sector.

It all stems from a study by Oxford University conducted in 2013 by Carl-Benedikt Frey and Michael Osborne. The two researchers, one of whom is a specialist in machine learning, sought to evaluate service sector jobs at risk of disappearing due to computer automation. They determined that 47% of jobs in the United States were at risk. Their methodology, applied by economists to other countries, yielded similar results, ranging from 33% of jobs at risk of disappearing in Norway to 45% in France and 59% in Portugal.

Many studies have transposed Frey & Osborne’s results to other countries

*Percentage of jobs with a high risk of being automated*

source: France Stratégie
France Stratégie is an institution associated with the Prime Minister. Its purpose is to help determine key directions for the future of the nation. Looking forward into 2016, its experts examined the issue of “the effect of automation on employment” and gave a critical look at Frey & Osborne’s approach, pointing out limitations.

- The study focuses only on potential job losses and not on created jobs.
- It analyses the situation per occupation or jobs and not per task, but:
  - Occupations identified as being threatened by automation often have many tasks that are difficult to automate
  - Not everyone working in the same occupation performs exactly the same tasks
- Do the probabilities of each job’s automation, calculated in 2013 for the United States, have meaning for another country?

By analyzing French statistical data over a period from 1998 to 2013 based on a repository of specific jobs, France Stratégie classified jobs into four broad categories, according to whether or not the job requires an externally-imposed rate, and applies strict guidelines or indicates autonomy:

**Employees according to their rate of work and the strict application of guidelines, in 2013**

<table>
<thead>
<tr>
<th>...you strictly follow the guidelines</th>
<th>Other types of jobs (4.3 million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>... in some cases/most of the time you do otherwise*</td>
<td>Highly automatable jobs (3.4 million)</td>
</tr>
<tr>
<td>Unautomatable jobs (9.1 million)</td>
<td>Other types of jobs (6.3 million)</td>
</tr>
</tbody>
</table>

* including don’t know/refusal to answer

Is your pace of work imposed by an external request (customer, public) requiring an immediate response?

*Yes*

*No*

Source: France Stratégie
France Stratégie’s evaluation is also based on work by the OECD and the Employment Advisory Council [Conseil d’Orientation pour l’Emploi] – COE:

**The important of changing jobs**

- According to the OECD (2016), 9% of jobs in France are automatable, 21% of jobs will experience significant changes in their tasks

![Automatable jobs (≥70% risk) and Change of tasks (50-70% risk)](chart)

- According to the OECD (2017), fewer than 10% of jobs are “exposed” to automation, and nearly 50% of jobs whose content is likely to change

The idea that emerges from the work of France Stratégie is that automation does not destroy jobs, but rather it takes over tasks within a job. As a result, the job is transformed, incorporating new tasks, which provided greater added value than those delegated to the robot.

This measured position is what the economist Michel Volle expresses in his works on iconomics. In a recent blog post, he states that “taxing robots would be a historic mistake” because “Iconomics introduces a new being, the ‘augmented human being’, with unparalleled faculties and capable of previously impossible actions. The future belongs neither to absolute automation nor to the maintenance of obsolete forms of employment, but rather to the symbiosis of human beings and computer automata. To achieve success, we must be aware of their difference and perceive what we each can do better than the other in order to reasonably articulate them. Seeing in the robot a human worker equivalent and taxing it accordingly would inhibit it and delay the contributions of this symbiosis.”
These analyses are consistent with what we have been able to observe at Contextor, in deploying nearly 100,000 software robots in large companies. Indeed, and Contextor concurs, “software robots” exist and are being used increasingly more often in office jobs by employees working with a computer. These robots can handle all of the tedious tasks that some employees perform every day when they have to interact with multiple pieces of software, which can take up 10-30% of their time. These “software robots” are not destroying jobs, but rather, they are improving the working conditions of the employees they assist, who can they focus more time on tasks that are truly interesting for them and that use their intelligence and their sense of human relationships.
For more information

For more information on the topic of robotic process automation, we suggest the following links to articles or blog posts that we find interesting.

**McKinsey & Company**

The next acronym you need to know about: RPA (robotic process automation)

**Deloitte**

Machine Intelligence: Technology mimics human cognition to create value

**PwC**

Robotic process automation in financial services

**Accenture**

Robotic Process Automation is bringing a tsunami of change in the life insurance sector

**EY**

Get ready for robots

**AT Kearney**

A.T. Kearney Robo-Advisory Services Study

**CapGemini**

Automatisation des processus robotiques

**Forbes**

Robotic process Automation opens new doors for finance and risk

**Digital Journal**

Global IT Robotic Automation Industry Will Reach a Value of US$16,884 Mn by 2024

**American Banker**

Beyond robo-compliance: How bots will soon permeate banking

**Computer Business Review**

What is Robotic Process Automation, and what benefits could it bring to your enterprise?

**Information Week**

How Can The CIO Drive RPA As A Strategic Imperative?

**Silicon Republic**

Robots are primed to change industry ... any day now

**TechTarget**

RPA in healthcare: The potential use cases

**France Stratégie**

L’effet de l’automatisation sur l’emploi : ce qu’on sait et ce qu’on ignore

**Michel Volle**

Taxing robots would be a historic mistake
Robotic Process Automation
A Pragmatic Approach to Digital Transformation

Contextor
Contextor is a French software vendor, focused for 15 years on Robotic Process Automation. Contextor is a tool for your digital transformation that reduces time to market by optimizing your business processes while ensuring compliance. Since there is no need to modify existing applications, Contextor solution brings a rapid return on investment. Contextor’s clients include: ENGIE, EDF, BNP Paribas, HelloBank, Societe Generale, Natixis, ING Belgium, American Express, bpost, AG2R la Mondiale, Harmonie Mutuelle, Klesia, Orange, SFR, Bouygues Telecom, Vodafone, Sodexo, Worldline, AXA Assistance, BMW…

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