

# Roland Berger

## Focus

November 2018

**The key to a successful RPA strategy**  
An organizational and human challenge



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# Management summary

Robotic Process Automation (RPA) is a mature technology that is highly effective in increasing business productivity. It frees up employees working on high-volume, repetitive jobs and allows them to be redeployed on strategic tasks that have greater added value for the firm.

The impact, depending on the industry, is an increase of several percentage points in operating margin. Financial or accounting services, administration and other sectors can expect to see a reduction in personnel costs of more than five percent.

The challenges of implementing RPA depend on the company's particular level of maturity with regard to the technology. Firms that only recently adopted the technology should first and foremost tackle the organizational challenges, identifying which activities are suitable for automation and ensuring adequate governance during the implementation. Early adopters, on the other hand, face a new challenge: how to manage their human capital and redeploy employees affected by the technology (strategic workforce planning, new jobs, mobility, career paths, and so on).

**What are the best practices for successfully implementing RPA? How can firms adopt a sustainable strategy adapted to different industries and reflecting their own degree of maturity? Roland Berger proposes a roadmap to help decision-makers through the transformation.**

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## Section 1:

# Evaluate the potential of RPA for the company

**RPA presents different potentials for different jobs and industries.**

## RPA, A MATURE TECHNOLOGY HELPING COMPANIES DIGITALLY TRANSFORM

Robotic Process Automation (RPA) makes it possible for businesses to automate high-volume, repetitive tasks with little added value. It also enables them to shorten production cycles through continuous operability (24 hours a day, seven days a week). The time freed up can be redirected toward more challenging tasks within the firm, making RPA a valid alternative to outsourcing. Reporting is a classic example: RPA makes it possible to cross-reference internal data with external data (for example, accounting figures with market information). "Bots", as the software robots are commonly known, can extract, process and format the data, putting it in the form of tables. Human operators can then focus on analyzing the data and passing it on to management.

RPA is akin to putting a patch on existing IT tools, without having to modify the entire system. Many companies have already adopted it, as return on investment is just three to six months. Indeed, the market doubled in size between 2015 and 2016, reaching a value of USD 600 million, and forecasts show steady growth of 40 percent a year through 2021. This rapid growth dynamic is driven by the willingness of large groups to deploy RPA as part of a global strategy, unlike past approaches that focused on automation at a local level.

## THE RELEVANCE OF RPA DEPENDS ON THE COMPANY'S FUNCTIONS AND INDUSTRY

To deploy RPA, a number of technical and economic conditions must be met, namely:

- > The data must be digital (physical production and paper-based activities are thus excluded)
- > The data must be structured (a form with set fields or a standardized table of figures, for example, not an unstructured email or phone call)

## With RPA, human operators can focus on analyzing data and passing it on to management.

- > Algorithms must be deterministic and not probabilistic (the same input must always produce the same output)
- > Return on investment must be satisfactory. This is generally the case where the productivity gain is greater than one full-time equivalent (FTE). Industrialized processes thus have the greatest potential, as several FTEs are dedicated to each task

Back-office and support functions therefore demonstrate the most potential for the application of RPA. → **A**  
The impact of RPA also differs depending upon the industry. Financial services, for example, where the raw material is largely digital, is one of the biggest beneficiaries of RPA – and indeed companies in this industry have pioneered the adoption of RPA. → **B**

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**A: RPA delivers productivity gains of 5 to 15 percent.**

Back-office jobs are the most suitable for task automation.

**REDUCTION IN BURDEN THANKS TO RPA**

**Support functions**

Particularly  
Finance and Accountings

**-5 to -10%**

**Front Office**

Repetitive,  
PC-based activities

**-5 to -10%**

**Back Office**

Processing  
digital files

**-10 to -15%**

**Accountings:** Automatic closing and reconciliation

**Controlling:** Automatic production of regulatory reports (extracting, processing and formatting data)

**HR:** Automatic onboarding/offboarding management (access rights, requests for name badges, paperwork, etc.)

**Purchasing:** Automatic creation of new suppliers in the system, tenders, processing of purchase requests, etc.

**Risk and compliance:** Partial automation of regulatory controls (e.g., KYC) and fraud detection

**Utilities:** Reduced call-processing time thanks to 360° view of customer data and progressive scripts

**Healthcare:** Automated patient interactions (access to medical history, invoicing, complaint management, etc.) and appointment management

**Public sector:** Partial automation of the processing of asylum claims by administrative courts

**Financial services:** Support for customer advisors in exchanges with current or prospective customers (product proposals/offers tailored to client profiles, etc.)

**Retail:** Real-time monitoring of special promotions (collecting/ reporting data on purchases, customer opinions, complaints, etc.) and proposing of actions (price modification, inventory management, etc.)

**Financial services:** Reduction in time required to open a bank account from 30 minutes to 5 minutes for an online bank

**Telecommunications:** Automation of numerous activity tracking reports (network, sales, complaints, cost tracking)

**Public sector:** Automatic benefits calculation for residents (data retrieval, calculation, preliminary response, etc.)

Source: Roland Berger

**FAST IMPLEMENTATION AND RETURN ON INVESTMENT**

RPA can be deployed within existing information system environments and provides a very quick return on investment. Installing a bot calls for a limited investment, somewhere in the order of USD 20,000-40,000, and saves the equivalent of between one and three FTEs, depending on the degree of industrialization of the process. Annual license costs run to around USD

10,000-20,000, so the investment pays for itself in three to six months. Different options are possible depending on the particular software company and use case.

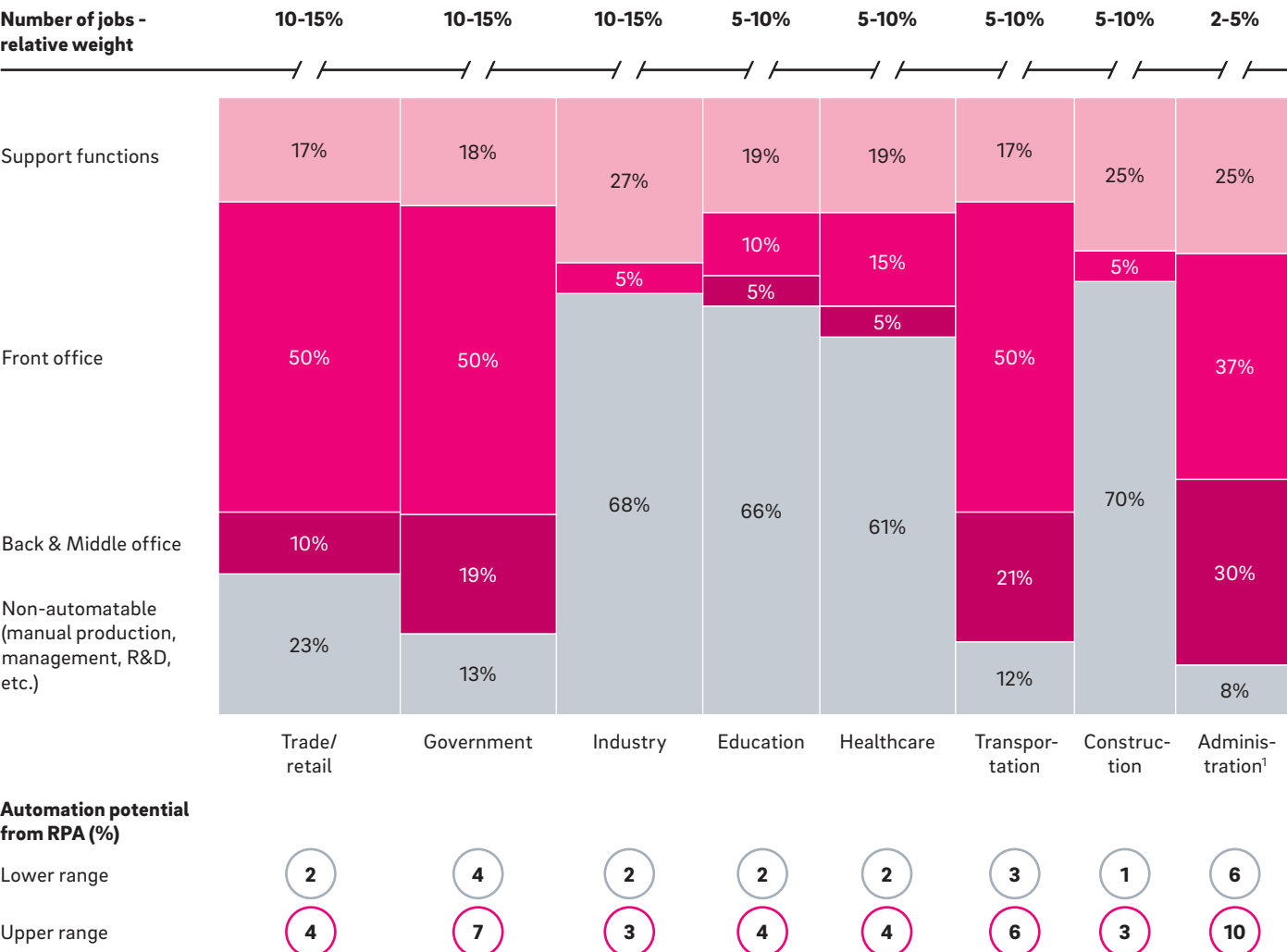
The agility of the technology also allows companies to measure return on investment quickly. For one financial services company, automating 20 percent of the tasks in one of its accounting services allowed the firm to amortize the initial investment in less than six months.

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This rapid growth dynamic is driven by the willingness of large groups to deploy RPA as part of a global strategy, unlike past approaches that focused on automation at a local level.

**B: Productivity gains from RPA differ by industry.**

RPA can achieve reductions in personnel costs of up to ten percent.

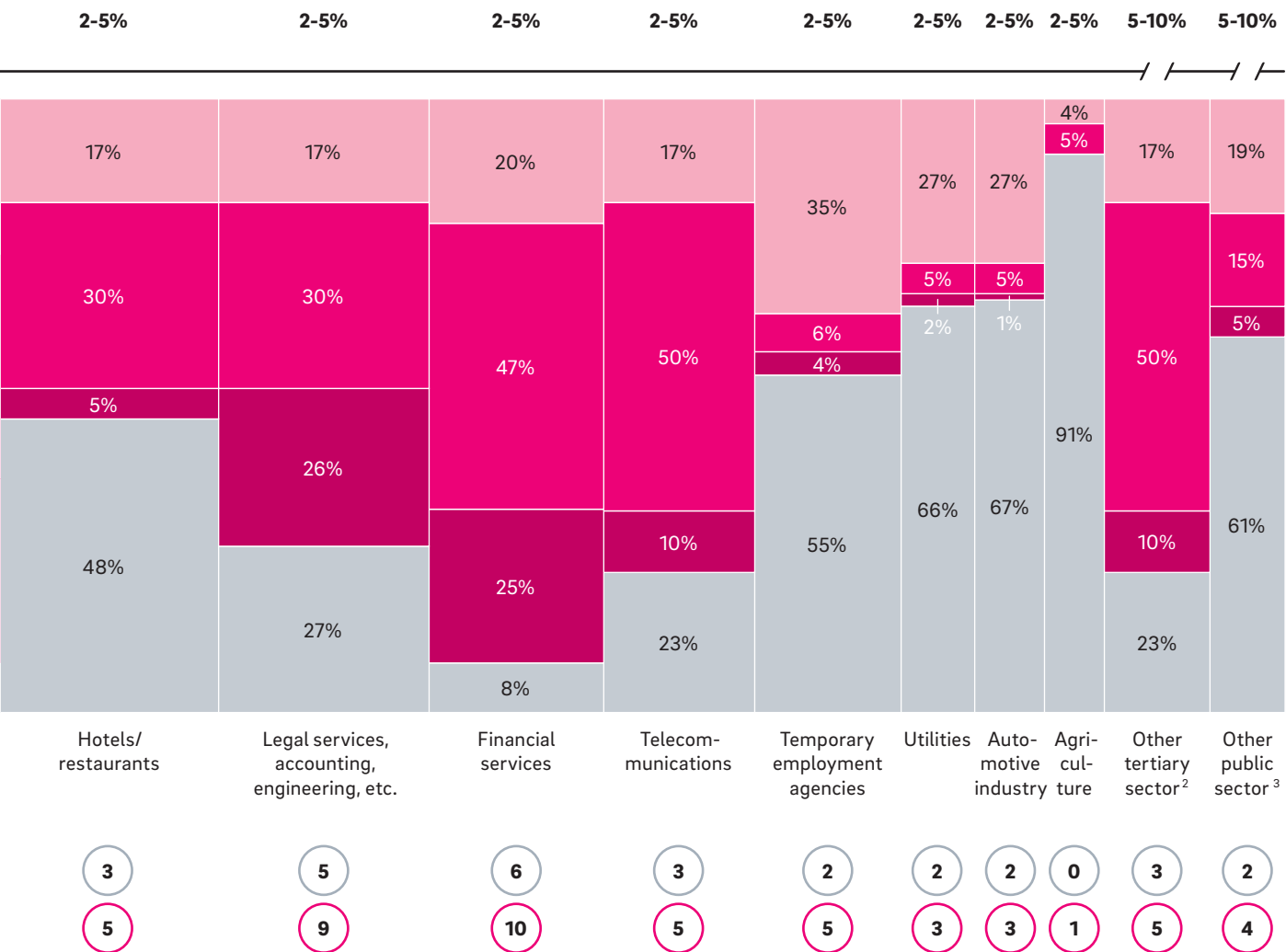


1 Administration: travel agencies, reservation services, rental services, building services, etc.

2 Other tertiary sector: working from home, arts and entertainment, real estate, etc.

3 Other public sector: social services, social housing, residential nursing care, etc.





## **Section 2:**

# **Choose the right solutions and partners**

**A wide range of options exist, each with their own value proposition.**

## MATURE, INTERNATIONAL SOFTWARE COMPANIES

A wide range of RPA software is available today, with different software companies positioning themselves differently in the market. Some of these specialists in RPA technology have expanded into connected activities, particularly in the field of Artificial Intelligence (AI). Their presence on the market since the 2000s has earned them the trust of major international groups alongside investors. Most are located in the United States and to a lesser extent in Europe. In Asia, the Indian market is growing rapidly and is expected to play a significant role in the coming years. → [C](#)

The main way in which software companies differ are as follows:

- > How the bots interact with users. Bots can operate on the workstation as the user's "assistant" ("attended RPA") or autonomously in the background on a server ("unattended RPA" – see below)
- > Integration capacity. How easily the bots can be integrated into the company is fundamental for conducting pilots and a determining factor in the implementation of the software across a broad network of partners
- > Local presence. Having a local presence ensures proximity, with internal teams and adequate responsiveness.

## SUPPORTING OR REPLACING HUMANS?

### TWO TYPES OF BOTS

The solutions offered by the various specialized software companies in the market for RPA fall into two types: "attended RPA" and "unattended RPA". The main difference between the two lies in the relationship between the bots and the human operators.

### Attended RPA

In attended RPA, the bots are installed on individual workstations and interact continuously with the human operators, performing actions at their request (requesting and displaying information, for example) and asking for confirmation before proceeding to the next step (for example, asking the operator to proofread a document before sending it). This type of solution is perfect for front-office activities, improving the human operator's capabilities and at the same time facilitating and speeding up the responses to customer requests. The most widespread application is providing call-center agents with a 360° view of customers (their contracts, history, past exchanges, and so on) by the bot simultaneously accessing all available databases (CRM, management, accounting, and so on).



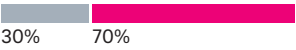

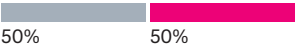


Attended bots do not give rise to prohibitive costs as they do not modify the core information system, nor do they require the building of an additional data warehouse. Companies can deploy attended RPA quickly and rapidly recoup the amount invested through the savings it makes. The main disadvantage of this type of software is its sensitivity to modifications of the office environment (for example, operating system updates) which necessitate modification of the bot.

### Unattended RPA

In unattended RPA, the bots are installed on the server and they automate entire sections of the process. The human operator only intervenes to make adjustments where necessary (troubleshooting), acting as the "control tower" for the bots' actions, so to speak. Unattended bots are mainly used for back-office functions, such as accounting. The bots require specific capabilities – being able to interface with the main ERP system, for example – but they have the advantage of being more stable than attended RPA bots. The payback period is only very slightly longer, at around six months.

### C: Overview of the main software companies offering RPA solutions (non exhaustive).

A large majority of players entered the RPA market in the early 2000s.

Company	Country <sup>1</sup>	Revenues (estimated)	No. of clients	Type of bots	Distinguishing features
<b>AUTOMATION ANYWHERE</b>	US (2003)	n.c.	~ 700	 20% 80%	Flexible pricing, large support team (50 people) offering extended support across three continents
<b>BLUEPRISM</b>	UK (2001)	EUR 27 m	+ 500	 100%	Global presence, leader in unattended RPA
<b>UIPATH</b>	Romania/UK (2005)	EUR 21 m	+ 450	 30% 70%	Present on three continents, community of 140,000 developers, computing vision for OCR
<b>REDWOOD</b>	Netherlands (1995)	EUR 38 m	+ 3,000	 100%	Strong expertise in finance/accounting, bots interfaced at server level
<b>WORKFUSION</b>	US (2011)	EUR 30 m	+ 4,000	 50% 50%	Complete platform: RPA, IA, OCR, BPM and Analytics
<b>NICE</b>	Israel (1986)	n.c.	+ 450	 70% 30%	Strong expertise in systems security and data backup, been developing an RPA suite since acquiring Igloo
<b>CONTEXTOR</b>	France (2000)	EUR 3.6 m	~100	 80% 20%	Expertise in attended (desktop) bots for middle and back office

<sup>1</sup> Country of origin/head office and year founded  Attended  Unattended

Source: Gartner, Forrester research, Roland Berger

### COGNITIVE RPA, END-TO-END AUTOMATION, ARTIFICIAL INTELLIGENCE – NEW OPPORTUNITIES THANKS TO TECHNOLOGICAL ADVANCE

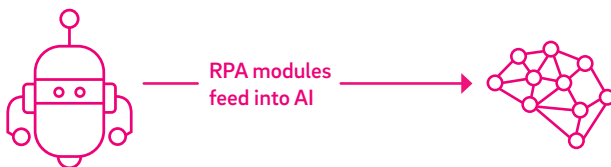
RPA is constantly evolving, increasing its impact and adapting to the continuous evolution of software operating environments. Two major trends are seen. The first is that of companies forming alliances with specialized startups, enriching their product range with combined RPA/AI solutions (artificial intelligence downstream of the processing chain) or combined AI/

RPA solutions (artificial intelligence upstream of the processing chain). The second is the development or integration of AI blocks within the bots. → [D](#)

These advances have given rise to a new generation of RPA, known as "cognitive" (or augmented) RPA, which features integrated AI capabilities such as machine-learning and natural language processing. Some software firms offer solutions with integrated AI algorithms or which are able to interface with partners. Specifically, an AI block can be fed with data compiled and consolidated by bots (for example, a reporting ta-

**D: Towards cognitive RPA.**

Interactions between RPA and AI.

**Natural language generation (NLG)**

RPA solutions produce standardized reports and feed them into an AI module that interprets them, produces written comments on trends, etc.

**Natural language understanding (NLU)**

The AI module interprets client emails and suggests a response or action that is then performed by an RPA module.

In the case of full automation, actions can be triggered by the AI solution without validation by a human operator.



Solutions that can automate certain applications on the basis of optical character recognition (OCR).

Observation software, installed on the computer, that mimics the tasks performed by a human operator and can then reproduce it.

Source: Roland Berger

ble is drawn up by a bot then analyzed by an AI block) or a bot can be fed with structured data by an AI block playing the role of "translator" between the human operator and the bot (for example, filling out a form using data from an email written in natural language). Combining these two technologies creates significant new potential for intelligent automation and increases the potential savings from end-to-end automation. It can also facilitate the development of new bots by installing "recorders" on workstations that watch what the human operators do and identify which sequences

could be done by a bot. These new possibilities make bots less sensitive to modifications of office tools; for example, advanced Optical Character Recognition (OCR) can be used to identify data regardless of where it is on the screen. Also, embedding machine-learning within solutions makes it possible to address a much higher level of process complexity and avoid deterministic programming, giving automation much broader potential.

### **Section 3:**

# **Create a body to support the company's ambitions**

**Develop clear ambitions and ensure suitable governance.**

Thanks to its economic potential and its multiple uses, RPA address challenges across functions within the company (Customer Relations, IT, Finance, HR, and so on). By the same token, it requires cross-functional governance. Unlike traditional types of automation, it must occupy a special place in the heart of the company.

#### **ASK YOURSELF THE RIGHT QUESTIONS**

To successfully implement RPA across the company – beyond a simple proof of concept (PoC) – you will need to establish a level of ambition and an operational framework that reflect the strategic alignment of the company.

The first question to ask yourself is what are the objectives of implementing RPA? Is the priority cost reduction? Improving quality of service? Shifting employees currently doing boring, repetitive jobs to more qualitative tasks? These various objectives may all be relevant and indeed complementary, but you will still need to prioritize them and create some way of measuring their impact, be it financial, operational or qualitative. The next step is to define roles and responsibilities for identifying relevant use cases and selecting which ones to pursue. The task of identifying use cases can be entrusted to project teams or an internal committee, for instance, giving them a clear mandate and roadmap for reviewing the company's functions in detail. At the opposite extreme, if the cultural context permits it, the company can entrust this task to the employees themselves – after all, they are the experts when it comes to the company's procedures. Staff can be rewarded with high-quality HR support for professional requalification (training programs, and so on). This process has proven successful at the insurance company Aviva in the United Kingdom.

Another core question is the choice of partners (software firms, integrators) and your desired level of independence. The objective here is to strike a balance be-

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**To successfully implement RPA across the company – beyond a simple proof of concept – you will need to establish a level of ambition and an operational framework that reflect the strategic alignment of the company.**

tween four key parameters: providing a range of relevant, effective solutions from a business point of view; streamlining your IT stock; controlling costs (development, licenses, changes); and minimizing your operational risk. → **E**

#### **BUILD AN RPA COMPETENCE CENTER**

At a company level, automating tasks calls for the establishment of an RPA Competence Center. Whether this body simply monitors what is going on or gets involved in the work itself, its job is to ensure that each link in the RPA implementation chain – from identifying use cases to monitoring savings – is implemented in a manner

**E: A roadmap for implementation.**

Prioritize tasks and define the RPA implementation strategy.

0. Objective of implementation	Quality of life at work		Quality of service		Productivity gains	
1. Role of RPA Competence Center	Coordinates RPA		Produces RPA		Steers RPA	
2. Preferred solution	Process optimization		System optimization		RPA	Artificial intelligence
3. RPA/AI provider strategy	Sole provider		Selected providers		Multiple providers	
SCOPE						
4. Function	Finance		Purchasing		HR	...
5. BU	BU 1		BU 2		BU 3	...
6. Regional scope	Country		Region		Global	
RESPONSIBILITY & GOVERNANCE						
7. Selecting use cases	Subsidiaries		Mixed		Central (group)	
8. Development	Subsidiaries		Mixed		Central (group)	
9. Operational management	Subsidiaries		Mixed		Central (group)	
10. Selecting RPA tools	Subsidiaries		Mixed		Central (group)	
11. Process	Offices			Group (incl. standard business case)		
PRODUCTION						
12. Location	On-shoring		Nearshoring		Offshoring	
13. Degree of internalization	Internal		Mixed		External	
14. Pricing model/costs	Cost center		Service center		Profit center	
15. Talent and expertise	Leverage internal capacity		Transform roles/competences		Recruit externally	

■ Chosen option

Source: Roland Berger

that is consistent with the firm's objectives and strategic ambitions. Upstream, the RPA Competence Center can also be involved in selecting partners and developing a roadmap. Moreover, it guarantees that the company itself masters the technology and does not become dependent on software providers. → **E**

The RPA Competence Center needs to be cross-functional, versatile and to represent all stakeholders. The stakeholders make sure that the expected return on invest-

ment materializes, and they ensure change management within the company.

The RPA Competence Center can take the form of a core team made up of representatives of the CIO, Controlling, HR and internal consulting (or project teams if necessary), plus a network of mentors acting as ambassadors, facilitators in identifying use cases and the first-level of support for users in the event of malfunctions or minor modifications. → **G**



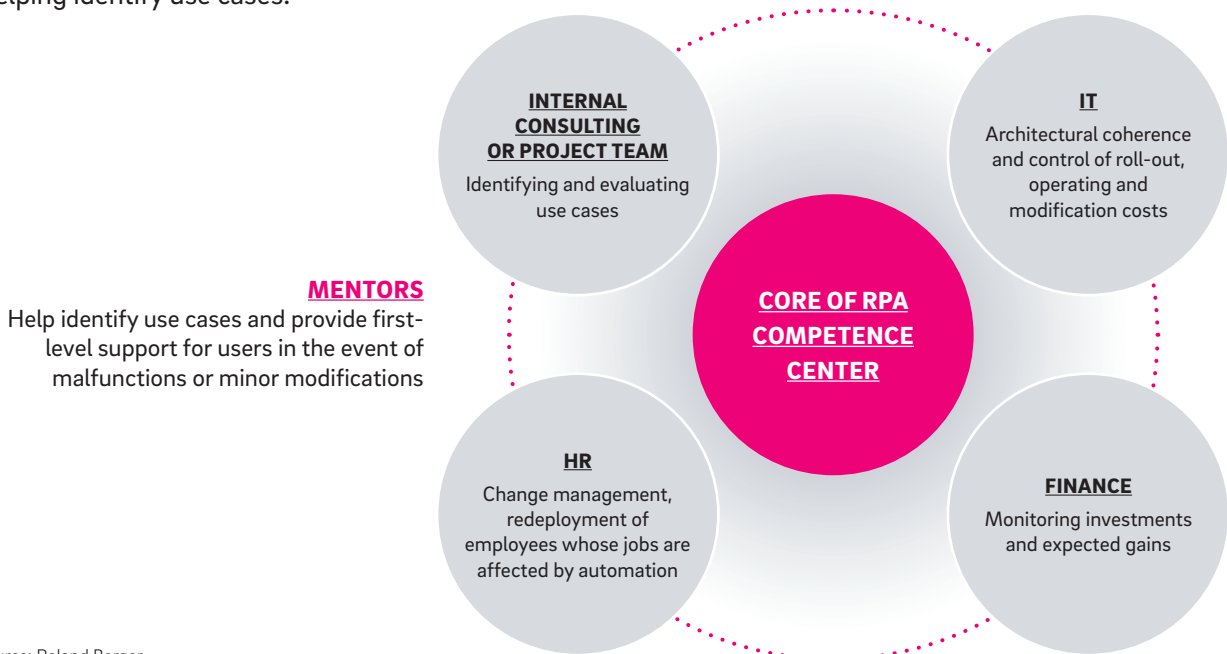
## F: Role and mission of the RPA Competence Center.

The RPA Competence Center guarantees the successful integration of RPA.



## G: The core team in the RPA Competence Center.

Helping identify use cases.



## **Section 4:**

# **Anticipate the impact of RPA on employment and skills**

**Manage the social impact of RPA by creating career paths from declining to growing occupations.**

Similar to older technologies, RPA replaces simple, repetitive tasks (data entry, searches, first-level data processing, and so on) with new, more value-added tasks (process analysis, integration, development). Anticipating the impact of RPA on jobs and skills is the cornerstone of a successful implementation. Two different cases arise, as we show below.

#### SIMPLE CASE

Where automated activities represent a small part of the total workload of a large number of employees, and these employees perform tasks with greater added value in parallel, the productivity gains stem from the "traditional" type of mobility: employees move from declining to growing occupations. For example, industrial program managers become innovation engineers, "quants" become data scientists, and so on.



#### COMPLEX CASE

Where automated activities represent the bulk of the workload of a limited number of employees, moving within the company is difficult for these employees due to the reduction in the pool of low-skilled jobs (as a result of previous automation, outsourcing, and so on) and because of the skills gap between the jobs being cut and the jobs that are appearing. Redeploying staff is more difficult and the company must plan for it properly in advance.



The company should, in advance, define multi-year career paths consisting of periods of training and successive moves, so that it can assess its ability to redeploy the employees impacted by RPA and put in motion the longest career paths. Defining career paths should be based on a detailed analysis of how jobs will evolve. This goes beyond traditional jobs and skills management: It involves carefully quantifying and timing when capacity will be freed up due to RPA, alongside any other economic performance initiatives that are underway or planned in the company, by business dimension, skills, hierarchical level and location at the very minimum.

The new jobs to be created as a result of the strategic alignment must be planned with same degree of granularity, accurately reflecting the imbalance between the excessive workforce on the one hand, and the positions to be filled on the other. Career paths and training courses must then be defined such that the former are matched with the latter. Of course, the actual implementation of the career paths is subject to the vicissitudes and peculiarities of HR. But planning in this way has the virtue of anticipating difficulties and preparing the company for them. → [H](#)

**H:** Training and mobility lie at the heart of the company's personnel transformation.  
HR work prior to the introduction of RPA facilitates professional redeployment.

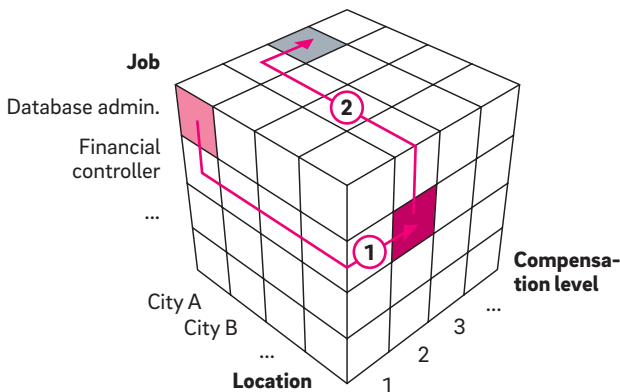
## Build a quantified, global, detailed, time-specific vision of supply and demand for mobility

### MOBILITY DEMAND (freed-up capacity)

- > RPA
- > Performance plan
- > One-time needs (skills updating, career path advice, etc.)

### MOBILITY SUPPLY (positions to be filled)

- > Natural attrition (retirements, end of fixed-term contracts, resignations, normal terminations of contract, etc.)
- > Increased workload in existing activities
- > New activities



- Employee to be redeployed after introduction of bots (e.g. database administrator in Controlling function)
- Job creation envisaged as part of the firm's strategy (e.g. data analyst)
- Intermediate position allowing the employee to acquire the skills needed to become a data analyst
- Successive moves (in this example, the employee's first move is to a position as Financial Controller, in order to add analytical skills to his or her existing technical skills)

## Analyze gaps, identify standard career paths and propose optimization actions

- > Quantify and forecast the gaps between supply and demand by department/ occupation, class, location and year
- > Build standard career paths (training courses, successive moves) from declining to growing occupations
- > Put measures in place to reduce the gaps (e.g. employment on temporary/ project-based activities, re-insourcing activities)



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(2018)



How can managers build a robust business model around a clear purpose? And how can it be anchored amidst dynamically changing corporate environments? Find out in this edition of our Think:Act magazine. One thing is sure – the outlook is promising. Some 85% of purpose-driven companies report positive top-line growth – to the delight of their stakeholders.

### Study

**Artificial Intelligence – A strategy for European startups**  
(2018)



Artificial intelligence (AI) is deemed to become one of the century's main drivers of economic competitiveness. In this field, startups – not multinational corporations – have become the most powerful drivers of innovation, developing technologies such as image recognition, natural language processing and automated driving. In the global AI race, creating a thriving ecosystem for these new players is key.

## Publisher

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