# RPA in business functions
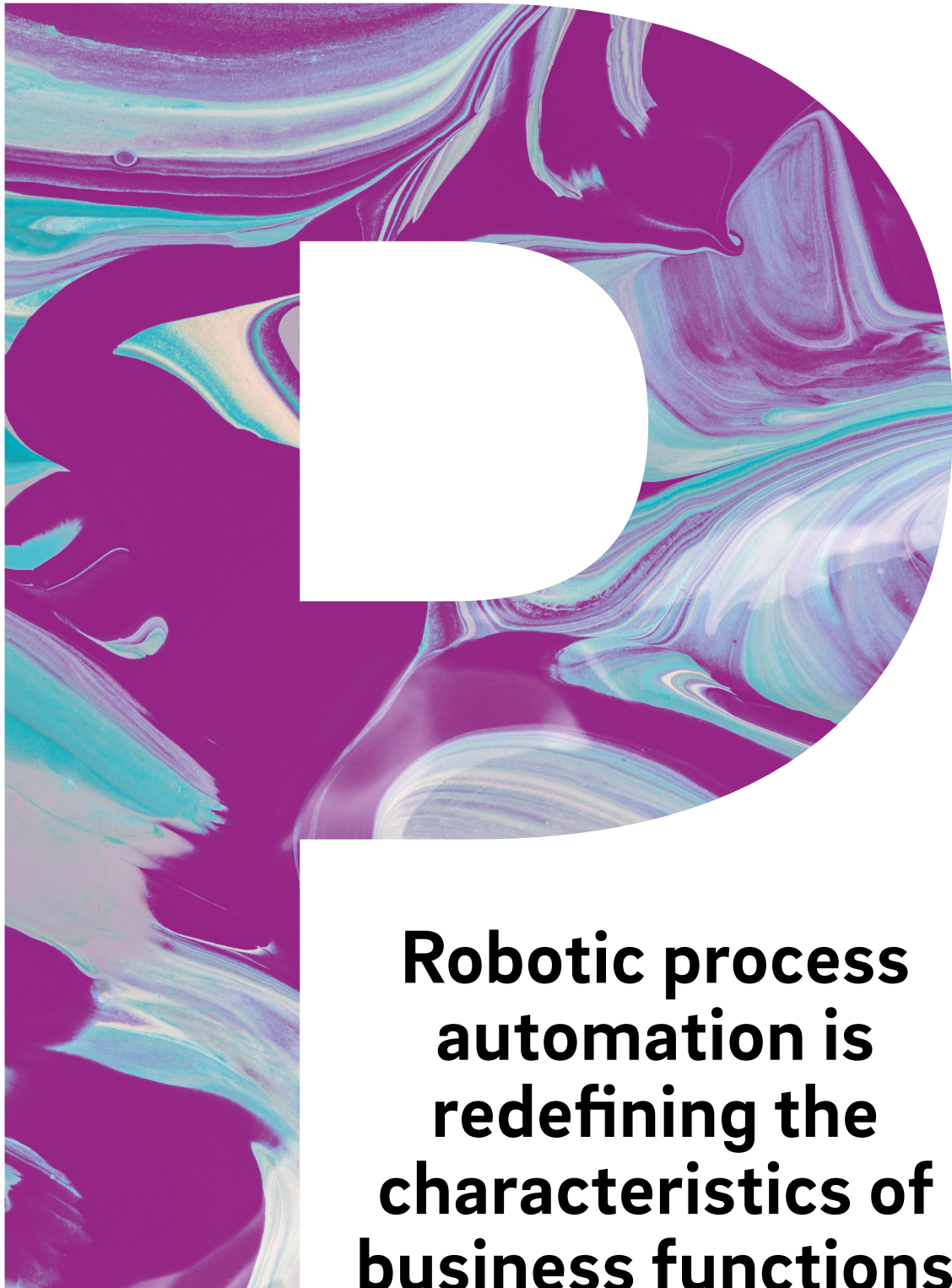
Roland Berger

# Robotic process automation is redefining the characteristics of business functions

# A game-changing opportunity to boost company value by 5 to 7 %

# In a nutshell

Robotic process automation (RPA) is a tool for boosting efficiency in companies. It uses software to simulate a "virtual employee" that can be taught repetitive, rule-based tasks, freeing up real employees for more value-creating jobs. RPA is widely applied in corporate functions, or back-office tasks. But advances in technology in areas such as image processing, speech recognition and machine learning mean that RPA is finding increasing application in "business functions", too. In corporate functions, RPA can raise efficiency by 20-40 percent. But in business functions, it can increase company value by between five and seven percent – making it a real game-changer for companies. We identify four areas where RPA can deliver significant time savings and value-add: system interfaces, data transformation, data processing, and customer and user communication. To realize the full potential of RPA, we advise companies to employ a structured approach, such as that presented here.

# RPA is coming out of the back office

**Robotic process automation** (RPA) is a software solution that simulates a "virtual employee". The software robot can be taught almost any repetitive, rule-based task that previously required human input. This makes it perfect for automating standardized processes and freeing up employees for more value-creating jobs, as discussed in our 2018 study, RPA – Tomorrow's must-have technology.

RPA can bridge interfaces between systems, capture and process data, interpret and trigger responses and even communicate with other systems, employees or clients. The technology can work independently and without supervision, taking on tasks that do not require human intelligence or individual decisions, or it can work side by side with employees. The advantages for companies are manifold: RPA increases processing speed, it is more accurate than human employees and it is available 24/7. As an added bonus, it usually requires no changes in the company's existing IT infrastructure.

To date, RPA has mainly been used for rule-based processes. But advances in technology mean that the technology can now realize more complex tasks. RPA has acquired human-like competencies in the areas of vision (image processing, extracting data from scans with the help of optical character recognition or OCR) and speech (speech recognition, natural language processing, chatbots). Thus, while it is still a rule-based tool, it is evolving the ability to communicate more and more like a human. Add artificial intelligence (AI) and machine learning, and the technology begins to react and interact autonomously, opening the door to new areas of application. ▶
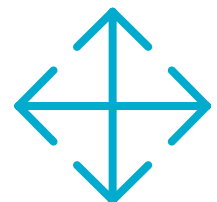
**Look who's talking**
RPA is acquiring human-like abilities

**Vision**
Image processing
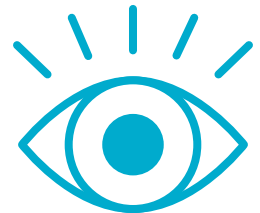
**Understanding the environment**
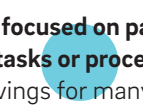Machine learning (pattern recognition), deep learning (cognitive skills)

**Acting independently**
Robotics (based on rules)

**Speech**
Speech recognition and natural language precessing

# Impact summary

Where does RPA have the greatest effect?

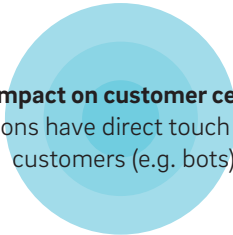| | CORPORATE FUNCTION | BUSINESS FUNCTION |
|---|---|---|
| **Impact** | **Cost reduction**<br>Increased cost efficiency enables rightsizing | **Release capacity for value creation**<br>Time savings free up time for value creation |
| **Concen-tration of automation potential** | **Automation focused on entire jobs**<br>Substitution of entire jobs | **Automation focused on parts of repetitive tasks or processes**<br>Time savings for many employees |
| **Need for reorganiza-tion** | **High need for reorganization**<br>Substitution of jobs by RPA solutions requires reorganization | **No/low need for reorganization**<br>Unchanged distribution of main tasks leads to no/low need for reorganization |
| **Need for adaptation of existing processes** | **High need for process adaptation**<br>Reorganization requires process adaptation | **No/low need for process adaptation**<br>Unchanged structures require no/limited process adaptation |
| **Impact on customer centricity** | **No/limited impact on customer centricity**<br>RPA solutions have no/limited touch points with customers | **High impact on customer centricity**<br>RPA solutions have direct touch points with customers (e.g. bots) |
| **Impact on company footprint** | **Low impact on company footprint**<br>Internal impact on employees only | **High impact on company footprint**<br>Impact on many internal/external stakeholders |

● Low impact      ◉ High impact

# Corporate vs. business functions

Potential application and impact of RPA

**Corporate functions**
Centralized support functions such as
Accounting, Controlling or HR

**RPA leads to increased efficiency**

**Business functions**
Decentralized operational functions such as
Production, Purchasing, Distribution or
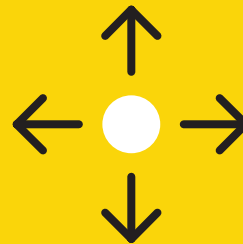Customer Service

**RPA leads to increased value and
customer satisfaction**

The result? RPA is moving from the back office to the middle office, and from the middle office to the front office. RPA solutions were previously focused on corporate functions, such as Controlling, Accounting and HR – centralized, traditional headquarter functions concerned with supporting the overall organization. Here, the tasks involved are homogeneous and the high degree of centralization makes it easier to implement robotic solutions and in so doing achieve economies of scale. Now, the focus of RPA is shifting to business functions, such as Production, Sales, Distribution and Customer Service – operational functions that are critical for adding value, creating competitive advantage and achieving customer satisfaction. Here, the tasks are more varied and spread across different employees, functions and even geographical regions.

## From cost efficiency to value creation

The broader application of RPA – its gradual expansion from corporate functions into business functions – lends it even greater potential in terms of adding value. However, the way that it adds value differs between the two areas.

In corporate functions, RPA mainly boosts cost efficiency. It has a bottom-line effect. Organizations realize high cost efficiency gains by optimizing processes and activities with as little effort as possible, replacing staff one-to-one or retraining and reemploying them in new positions. The impact of RPA is thus largely internal, with only limited effects on customer centricity or the company's external footprint.

# Breaking it down

Cost efficiency vs. value creation



**EFFICIENCY** →

**RPA in corporate functions** → **Overall RPA potential**

**Manual processes** ⇢ **RPA in business functions**

**VALUE CREATION** ⟶

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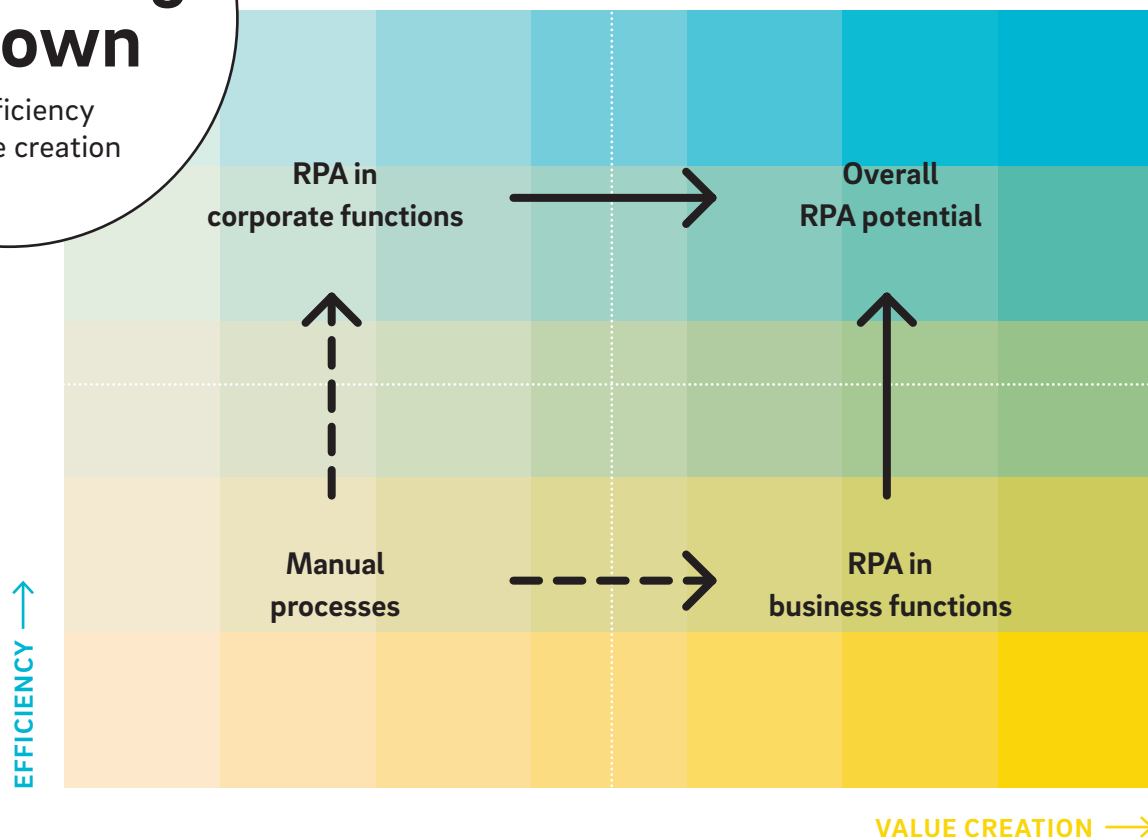
## "The value-creation potential of RPA in business functions is between five and seven percent – a game-changing opportunity for companies."

**FABIAN ENGELS, PARTNER**

In business functions, by contrast, RPA unleashes value-creation potential, boosting the value of the goods, services or the entire business. Automating a specific task or activity across an entire business unit represents a rather small benefit for each employee within the business unit; in Sales, for example, implementing an RPA solution for a repetitive, standardized task across the entire unit leads to less administrative effort for all Sales employees. But the resulting time savings can be used to maintain customer relationships and generate higher sales. In this way, the impact of RPA is external, too, positively affecting customer centricity and the company's external footprint and supporting overall value creation.

If we take the full potential impact of RPA to be 100 percent, that 100 percent can be made up 100 percent of cost efficiencies and zero percent of value creation, or zero percent of cost efficiencies and 100 percent of value creation. Or, of course, any mixture of the two, in different proportions, that adds up to 100 percent. What does the impact of RPA look like in practice? Based on our experience and interviews carried out with experts, the impact of applying RPA in corporate functions consists 75 percent of cost efficiencies and 25 percent of value creation, while the impact of applying RPA in business functions consists 25 percent of cost efficiencies and 75 percent of value creation.

RPA solutions thus represent an opportunity for companies to both increase cost efficiency (primarily in corporate functions) and create value (primarily in business functions). By automating and streamlining all their processes in an end-to-end manner, the total benefit will be even greater.

# Calculating impact: four use cases

**Our 2018 study** demonstrated that companies can improve their efficiency by between 20 and 40 percent by using RPA solutions in corporate functions. How does the impact of RPA in business functions compare with that?

To calculate the potential impact of RPA in business functions, we reviewed our experiences working with clients in various industries and spoke to companies and experts in RPA. On this basis, we established the areas with the greatest potential for using RPA solutions within business functions, categorizing the levers along the traditional value chain, covering suppliers, internal processes and customers. We then drew up four major clusters of areas where RPA can be applied across industries and company lifecycle stages: system interfaces, data transformation, data processing, and customer and user communication. We discuss each of these clusters in turn below, with a real-life example of how Roland Berger has helped clients make improvements in these areas using RPA.

For each of these four clusters we calculate a potential increase in company value of one to two percent. We therefore estimate the total overall value-creation potential for all four clusters taken together to be between five and seven percent – a game-changing opportunity for companies.

## 1. System interfaces

RPA solutions can facilitate data transmission between different types of interfaces without the need to adjust existing systems. First, they can support data transmission between different internal systems. Ro-

bots can, for example, automatically transfer data between customer relationship management (CRM) and accounting systems. If organizations lack capacity due to high demand during working hours, robots can replace human work and process data asynchronously. Second, RPA solutions can bridge interfaces between internal and external data systems, for example, transferring external supplier data to internal systems or forwarding data to external platforms. Third, RPA solutions can link standalone digitalization solutions for individual machines with integrated corporate systems. For example, robots can transfer operative performance data from machines to enterprise resource planning (ERP) systems.

Our analysis shows that RPA solutions for system interfaces can save 40 to 50 minutes per employee a week. Of that, on average 25 minutes can be freed up at internal system interfaces, ten minutes at interfaces with external systems and ten minutes at interfaces with plants and machinery.

**Use case: An RPA interface solution for a global insurance company**

Sales employees across industries spend several minutes a day transferring data between different system interfaces – a boring, repetitive job. One global insurance company wanted to do something about this. The problem was that they used several different computer sys-

**+45**min
Freed-up time

**+1.8**%
Additional value creation
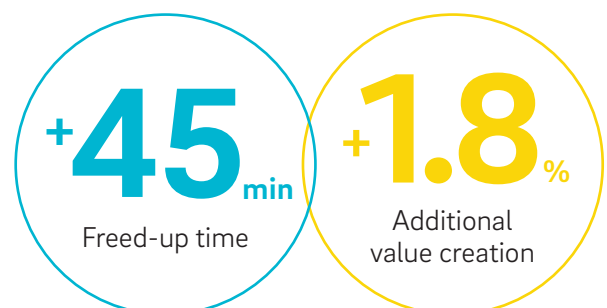
# Watching the clock

Weekly time savings per employee thanks
to RPA solutions (based on a 40-hour week)

| CLUSTER | AREA | TIME SAVINGS POTENTIAL [MIN] | | TIME SAVINGS POTENTIAL [%] | |
|---|---|---|---|---|---|
| | | 0 — 40 | | 0 — 1.5 | |
| **System interfaces** | Internal system interfacing between two internal systems | | c.25 | | c.1.0 |
| | Interfaces to plant and machinery | | c.10 | | c.0.4 |
| | External data/ system interfacing | | c.10 | | c.0.4 |
| | ∑ | | **c.45** | | **c.1.8** |
| **Data transformation** | Physical data transformation | | c.20 | | c.0.8 |
| | Voice input of data/ voice recognition | | c.15 | | c.0.6 |
| | Invoice creation/receipt | | c.5 | | c.0.2 |
| | ∑ | | **c.40** | | **c.1.6** |
| **Data processing** | Data management and maintenance | | c.20 | | c.0.8 |
| | Operational reporting | | c.5 | | c.0.2 |
| | Forecasting and planning | | c.5 | | c.0.2 |
| | Generation of market insights/information | | c.5 | | c.0.2 |
| | ∑ | | **c.35** | | **c.1.4** |
| **Customer and user communication** | Internal communication | | c.15 | | c.0.6 |
| | External communication | | c.10 | | c.0.4 |
| | ∑ | | **c.25** | | **c.1.0** |

tems that were not harmonized with each other; when new contracts were finalized, employees had to manually enter similar customer data in each of the different systems. The company's Manager of Automation and Robotics complained that "some Sales Managers spend more than ten percent of their time entering the same data in up to seven different systems and databases."

Roland Berger assisted with the implementation of an appropriate RPA solution. First, we automated the interface between a number of different systems. Now, the robots could independently access data entered into one system and replicate it in other systems as required. The robots could also access and process data entered into a central interface, sending the data automatically to the required destination. Next, we combined the RPA solution with an OCR scanning engine that extracted data from contracts automatically and replaced data entry in one of the systems. This increase in efficiency reduced non-value-adding, manual work and led to time savings of around five minutes per contract, or 40 to 50 minutes per employee a week.

## 2. Data transformation

RPA solutions can assist with the transformation of physical data into digital data. For example, an RPA solution can populate ERP systems with paper-based supplier and invoice data. RPA solutions can also transform audio data into alphanumeric data. For example, voice recognition robots can facilitate the documentation of on-site visits by processing audio-documented recordings of production steps. In addition, RPA can reduce manual data management, for instance by automatically generating receipts and invoices for customers and suppliers.

Our analysis shows that RPA processes can free up 35 to 45 minutes per employee a week. Of that, 20 minutes can be freed up by automated physical data transformation, 15 minutes by voice input/recognition and five minutes by receipt/invoice creation.

**Use case: Transforming invoice processing at a Berlin-based logistics startup**

Increasing digitalization makes transforming physical data into digital data a priority for companies.

**+40**min
Freed-up time

**+1.6**%
Additional value creation
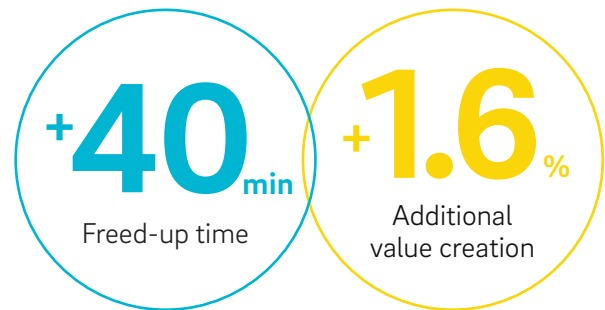
At a Berlin-based logistics startup, comparing physical supplier invoices with digital orders was eating up a significant amount of operations employees' time. Driving the workload was identifying, analyzing and accepting or rejecting deviations between the two documents, for example different volumes or unexpected truck downtimes.

Roland Berger helped develop an RPA solution based on an OCR platform. The robot automatically extracted all the relevant data from the physical invoice, formatted it as digital data and compared it with the digital order. In the event of a deviation, the robot applied different scenarios to identify the cause. According to the Head of Business Unit, "After 12 weeks, more than 80 percent of supplier invoices received by the business functions were recognized automatically by the robot." Human intervention was only necessary for complex cases. "The solution saved around 40 minutes for each operations employee a week. With around 25 operations employees working on 200 cases a week and an average processing time of 5 minutes per case, that meant a saving of around 1,000 minutes (17 hours) a week in total."

## 3. Data processing

RPA can collect data from various independent sources, analyze it based on predefined rules or even its own learning, and put it in a standardized output format. In business functions this can be used for operational reporting and documentation tasks, for example, creating digital reports based on data from various sources. RPA can also generate market insights by crawling different data sources and processing the information, or make forecasts based on standardized planning processes.

**+25**min
Freed-up time

**+1.0**%
Additional value creation

Our research shows that RPA solutions can save 30 to 40 minutes per employee a week in the area of data processing. Of that, 20 minutes can be freed up by RPA-based data management and maintenance, and a further five minutes each by automated operational reporting, forecasting and planning, and generating market insights.

**Use case: RPA-based data processing in the sales and customer relations department of a leading European hotel chain**

Data is a valuable knowledge pool for companies. However, if that data is unstructured or held in different systems, using it can be difficult. A European hotel chain wanted to use the customer data it knew it had for targeted marketing campaigns. The problem was that said data was spread across more than 30 different systems and platforms. Collecting and analyzing the data had mainly been done by hand in the past.

Roland Berger implemented a robot-based database that extracted data by means of crawlers. The data was then processed and the hotel's customers assigned to different profiles on the basis of loyalty, speed of decision making, family vs. business travelers, and so on. Customer profiles were updated automatically. The robot then launched a series of target group-oriented marketing campaigns on online and offline channels.

This freed up on average 40 minutes per sales employee a week, as well as leading to a 50 percent increase in sales for selected customer groups. As the Head of Sales Controlling explained: "We established a smart reporting tool by combining RPA with artificial intelligence. The tool provides business functions with deep insights into current sales data and cuts data processing time by 85 percent."

**+35**min
Freed-up time

**+1.4**%
Additional value creation
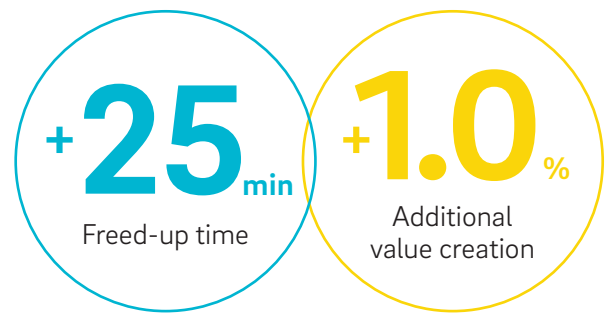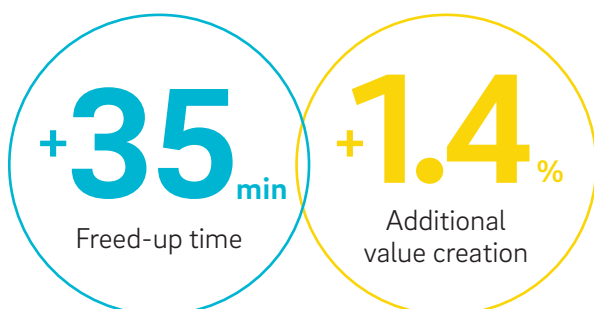
# 4. Customer and user communication

RPA can communicate with both internal and external stakeholders. For example, robots can be used as first-level technical support, answering questions based on predefined FAQs or independently searching for internal data in company systems. RPA-based bots can also assist with recurring, standardized requests for sales quotes, automatically providing the required information in an edited form. Our analysis shows that using RPA for internal and external communication can free up around 20 to 30 minutes per employee a week.

**Use case: An RPA-based customer communication solution for a shipping and logistics company**

Customer service departments in all industries and locations face increasing demand for full transparency and 24/7 customer service. One Middle Eastern shipping and logistics company focusing on end customers found their service department overwhelmed with real-time tracking inquiries. The problem? Employees had to manually retrieve information, such as current locations and expected delivery dates for consignments, from different systems and then forward it to customers by phone or email.

Roland Berger helped automate this process using RPA. The company implemented a robot that crawls information from all sources and populates a central, real-time database. Another RPA solution interprets customer inquiries received via email, chatbot or phone, retrieves the required information from the database and transmits it to the customer via the same channel. The robot only hands over to humans as a fallback option. According to the company's Head of Digital, "Less than five percent of customers realize that their communication was handled by a robot." The robot's availability 24/7 significantly increased service quality and resulted in weekly time savings of 20 to 30 minutes per employee.

# RPA – Is it right for me?

**Some analysts suggest** that RPA can only create value in certain industries or for certain sizes of company. We beg to differ. In our experience supporting companies, we have found that RPA can stimulate value creation in all types of companies, across all industries. What is important, however, is examining the company carefully and determining its characteristics. This enables us to implement RPA solutions with the highest value-creation potential. In our work we distinguish four different company archetypes and relevant use cases for each type, as shown in the figure below.

**What type of company are you?**
Getting the most out of RPA

**1**
Streamlined group companies

**2**
Inorganically grown companies

**3**
Accelerated ventures

**3**
Conglomerates

× Increased efficiency through automation of interfaces to external systems, e.g. to customers and suppliers

× Economies of scale enabled through global rollout of locally developed RPA solutions

× Automation of large volumes

× RPA to bridge interfaces between systems of different group companies, e.g. for the exchange of supplier or inventory data between business functions

× Rapid rollout in group companies due to similar systems and industries

× Only minor adjustments for scaling throughout the entire group

× Implementation of RPA solutions for the most severe pain points (e.g. repetitive tasks involving the highest FTE capacity) usually executed in four to eight weeks

× Flexible adaptation to changing business and system requirements

× Allowing employees to focus on the venture's growth path

× Robots for flexible interfacing between systems

× RPA to enable the leveraging of synergies between different business lines (e.g. analysis of customer data from different business lines to identify cross-selling opportunities)

# Implementing RPA – The Roland Berger approach

**RPA is an extremely powerful** tool. However, realizing its full potential presents companies with a number of challenges. Here, it is essential to employ a structured approach, ensuring that the right technology is chosen for the right processes.

Roland Berger uses a comprehensive methodology that helps organizations implement RPA solutions in complex business environments. The approach is driven by our belief that robotics is more than just an efficiency tool in business functions: It can unleash value by directly enhancing value creation and freeing up time that employees can then spend on value creation.

## STEP 1: Map the value chain

The first step is to hold detailed workshops with representatives of key functions and other stakeholders to derive a "heat map" for possible use cases, tasks and processes along all major steps in the value chain. This will reveal where the greatest potential for RPA lies.

## STEP 2: Assess the potential for efficiency and value creation

Next, the company should assess the potential for efficiency and value creation for the use cases iden-tified, looking at the dimensions "automation potential" and "implementation complexity". The focus should be on end-to-end process streams and include both internal and external interfaces.

## STEP 3: Draw up a value-creation plan

Step 3 is to create a detailed business case, including capital expenditure (CAPEX), operating expenditure (OPEX) and expected return on investment (ROI). The particular use cases to be pursued should now be selected and prioritized.

## STEP 4: Appoint RPA ambassadors

A key success factor in implementing RPA is to involve the organization early on and ensure commitment from employees. One way to achieve this is to appoint "RPA ambassadors" within the organization who can serve as a focal point for RPA-related topics, such as supporting implementation, maintaining technology and adapting technology. RPA ambassadors are also the people for employees to contact if they have any further ideas about where RPA could be used in the firm.

# Build your RPA in six steps

**1** Analyze your value chain

**2** Assess your potential

**3** Build your RPA business case

**4** Appoint your RPA ambassadors

**5** Choose your implementation partners

**6** Go live

**Our approach is driven by the belief that robotics is more than just an efficiency tool in business functions: It can unleash value by directly enhancing value creation and freeing up time that employees can then spend on value creation.**

## STEP 5: Select an RPA integrator and software provider

The fifth step is to select the best RPA integrators and software providers. Roland Berger uses the following assessment criteria: relevance for the use case (for example, does the proposed solution meet the requirements?); local experience (where are the team/ previous customers located?); pricing strategy (what are the total implementation costs and are the cost components transparent?); and qualification (does the provider have a proven track record?).

## STEP 6: Run pilots or roll out across the firm

Finally, the company should either implement a pilot robot – to demonstrate what RPA can do and to "light a digital spark" within the company – or immediately initiate a full-scale rollout across the firm. In both situations Roland Berger can assist by steering regular meetings between all parties, ensuring complex projects are successfully implemented and leveraging best practices for future RPA projects within the company.

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