A Forrester Consulting
Thought Leadership Paper
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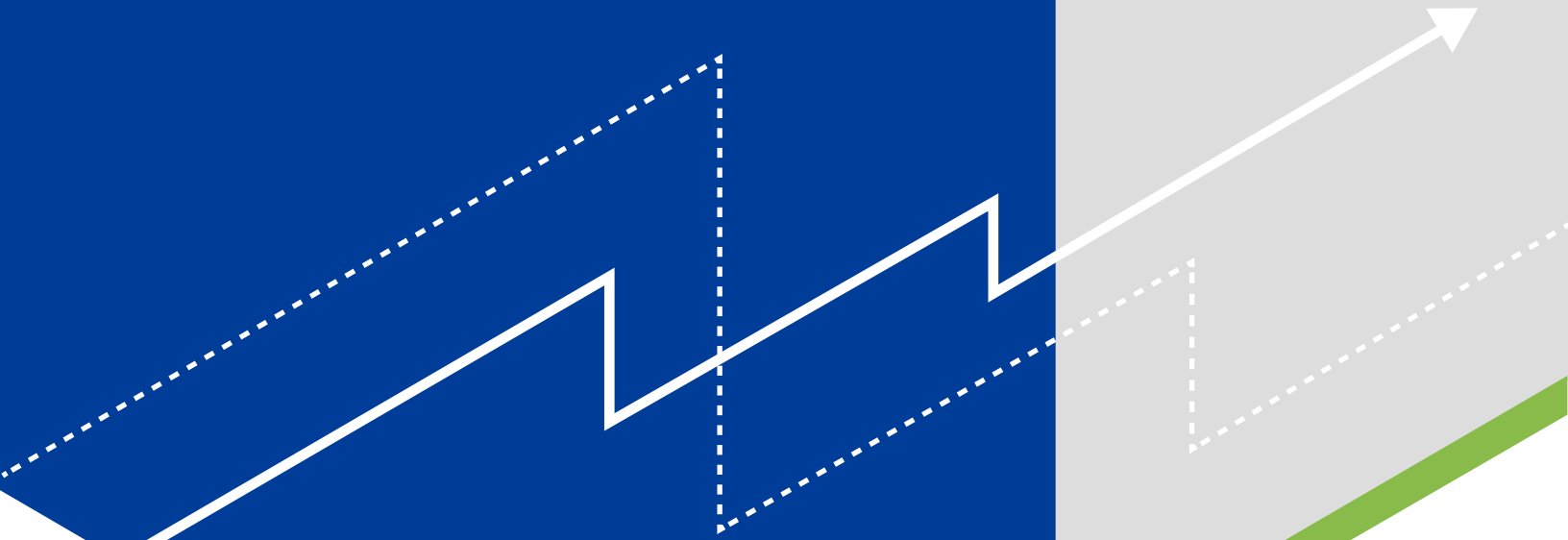
Barriers and Best Practices for Scaling RPA

Centralized Automation, Resiliency, And Low-Maintenance Bots Pave The Way To RPA Success



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RPA users see benefits to both customer experience and employee productivity.

Most firms do not know the total scale and costs associated with their RPA program.

Executive Summary

As companies increasingly implement robotic process automation (RPA) as part of their automation strategy, scaling RPA programs remains a major hurdle for most enterprises.

In November 2019, Tricentis commissioned Forrester Consulting to evaluate what RPA programs look like on the ground and to evaluate what challenges firms face related to scaling those programs. We found that the greatest challenges to successfully scaling RPA are ineffective bot resiliency, uncontrolled shadow IT, and poorly designed or programmed bots, which damage customer service, costs, and revenue.

KEY FINDINGS

- **Firms can't seem to master RPA resiliency — and that impacts costs.** Less than one in five firms are very effective at resilient automation, and firms that struggle with resiliency are also four times more likely to say they are very ineffective at controlling costs associated with RPA.
- **Bots often break, placing a heavy load on resources.** Forty-five percent of firms deal with bot breakage on a weekly basis or more often, and in the meantime, customer experience is impacted. Employees also have to take on additional manual tasks that would otherwise be automated.
- **Scripting permeates today's RPA implementations.** Virtually all respondents (99%) say their organizations' bot logic requires some scripting, with a weighted average of 42% of bot logic expressed within a script. Seventy-nine percent of firms report that their RPA programs require advanced programming skills.
- **Firms using scripting-based RPA solutions experience more pain from broken bots.** High-script firms were 1.3 times more likely to experience impacted customer service from broken bots, and 1.5 times more likely to have impacts to cost or revenue, e.g., from delayed transactions.
- **Firms struggle with shadow IT when it comes to RPA.** Only one in five firms have a centralized automation center of excellence (CoE), and firms struggle with uncontrolled adoption. Most firms do not know the total scale and costs associated with their RPA program.

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RPA Is Paying Off, But Control Issues Are Surfacing

RPA is a key technology that can impact both customer and employee engagement, and as a result, firms are investing in RPA services at a rapidly growing rate. Forrester predicts that by 2023 the RPA market will grow to reach $12 billion, up from an expected $5 billion in 2019.[1] In surveying 271 US-based enterprise decision makers about their current RPA program, we found that:

- **Two-thirds of all RPA work is performed outside of centralized IT.** Firms reported that RPA implementation is shared across IT, lines of business, and outside contractors, but approximately two-thirds of all work is performed outside of centralized IT (see Figure 1). Lines of business are involved earlier in the process to develop the overall strategy and define requirements. Outside contractors are often engaged for development, while maintenance falls more heavily on technical resources sitting in the lines of business.
- **Advanced programming skills are usually required.** Although RPA often promises to make business users "citizen developers," most firms report that their RPA programs require advanced programming skills. On a scale of one (no technical skills are required) to five (advanced programming skills are needed), the average score is 4.1.
- **RPA improves customer experience as much as it increases employee productivity.** The top two improvements RPA users have realized are in employee productivity and customer experience. Almost four out of five firms have realized tangible results that impact both customers and employees (see Figure 2). We also scored respondents on their RPA program maturity, based on a 12-criterion evaluation, and discovered that leading firms' improvements were generally higher across the board, and they also experienced a greater reduction in employee error rates (68% vs. 58% on average).[2]

Figure 2

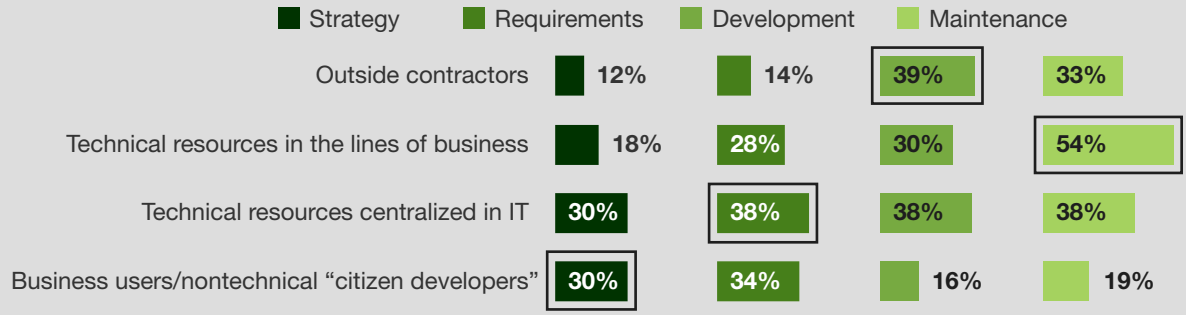
Benefits realized from RPA programs

79% of respondents saw improvements impacting both customers and employees

Base: 271 US enterprise decision makers with existing RPA systems
Source: A commissioned study conducted by Forrester Consulting on behalf of Tricentis, November 2019

Figure 1

"Who is responsible for the following elements of your organization's RPA program?"



Base: 271 US enterprise decision makers with existing RPA systems
Source: A commissioned study conducted by Forrester Consulting on behalf of Tricentis, November 2019

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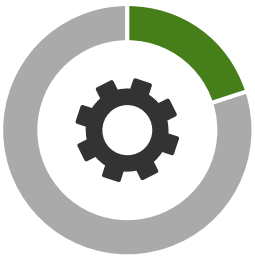
Major Barriers Exist To Fully Realizing RPA Benefits

FIRMS LACK CENTRALIZATION WHERE IT MATTERS, LEADING TO INEFFICIENCIES

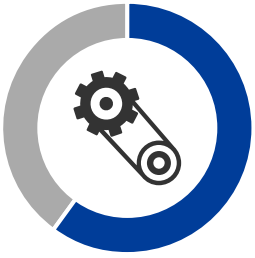
While RPA is revolutionizing how businesses support their employees and engage with customers, it's not without its challenges. When it comes to implementation approaches, we found that distributed programs are particularly problematic. Based on our survey results, we found that:

- **Automation CoEs are rare, which is a common source of pain.** Only one in five organizations has a centralized automation CoE. This finding is not entirely surprising, as CoEs are often targets of budget cuts.[3] Yet, close to two-thirds of respondents found this lack of a centralized resource to be very challenging (see Figure 3).
- **Distributed RPA programs lead to costly uncontrolled adoption.** More than half of respondents indicated that they struggled to prevent shadow IT, where the total RPA scale and costs associated are unknown at the organizational level (see Figure 4). More than two-thirds struggle with controlling RPA costs — and these two issues are linked. Without a centralized view of RPA, it's impossible to identify efficiencies.
- **Misalignment exists on RPA responsibility.** With 63% of respondents agreeing they have silos of uncoordinated automation, it is not surprising that business and IT stakeholders are misaligned (see Figure 4). Business users are likely underestimating the level of effort required by IT, as technical respondents are 1.8 times more likely to say that IT leadership plays a role in strategy and requirements development than business respondents. Similar "geek gaps" exist in development and maintenance (see Figure 4).

Figure 3



Only **20%** have a centralized automation COE

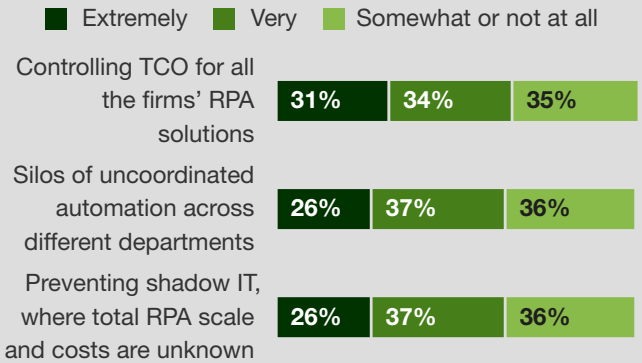


60% find the lack of an automation COE very challenging

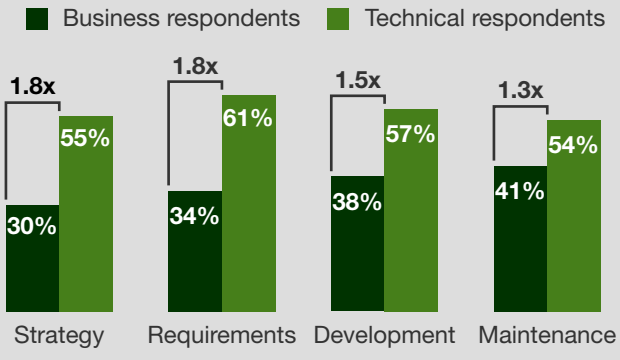
Base: 271 US enterprise decision makers with existing RPA systems
Source: A commissioned study conducted by Forrester Consulting on behalf of Tricentis, November 2019

Figure 4

"To what extent does your organization experience the following challenges related to RPA?"



"Is IT leadership responsible for the following elements of your organization's RPA program?"



Base: 271 US enterprise decision makers with existing RPA systems
Source: A commissioned study conducted by Forrester Consulting on behalf of Tricentis, November 2019

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BOTS BREAK, STALLING PROCESSES AND OVERLOADING EMPLOYEES

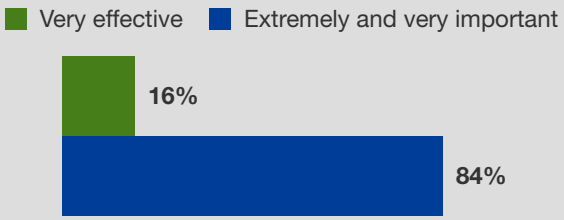
Current approaches to building bots look like a patchwork of workflows and applications sitting on brittle legacy systems, in other words, not taking the right approach to RPA can in turn create brittle bots. When we looked at bot breakage, we found:

- **Firms value RPA resiliency, but can't seem to master it.** While 84% of respondents say that resilient automation is very or extremely important for achieving business objectives, only 16% of firms are very effective at it. Furthermore, about half of RPA programs lack significant resiliency (see Figure 5). Firms that struggle with resiliency are also four times more likely to say they are very ineffective at controlling costs associated with RPA.
- **Bots have multiple reliability challenges.** The leading cause of bot breakage is infrastructure-related issues, like software reliability issues or crashes, but a third of respondents or more indicated that application UI and data changes are other culprits, along with selecting the wrong tasks to automate (see Figure 6). Forrester recommends following the "rule of five" to identify appropriate tasks: fewer than five decisions, five apps accessed, and 500 clicks are safe territory for RPA success.[4]
- **Fixing broken bots is a drain on resources.** Forty-five percent of firms deal with bot breakage weekly or more often, and fixing broken bots takes about one day. Meanwhile, firms indicated that broken bots impact customer service and employee experience as well as lower employee productivity. The most common method for addressing the workflow that would otherwise be handled by RPA is to route that work to an internal resource queue — so while bots are broken, impacted employees are overloaded (see Figure 6).

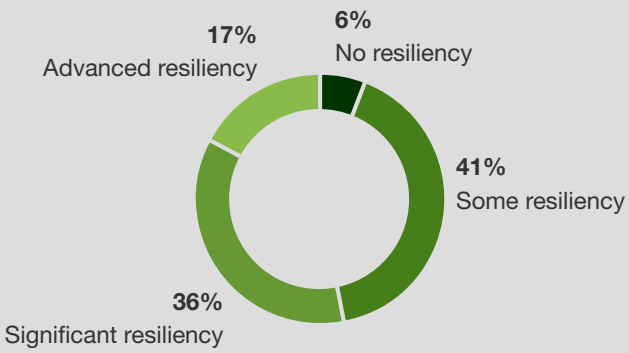
Firms that struggle with resiliency are 4x times more likely to be very ineffective at controlling RPA program costs.

Figure 5

Organizations that are very effective at resilient automation and organizations that rate resilient automation extremely or very important to achieving its business objectives



"Which of the following statements best describes how resilient bots are at your organization?"



Base: 271 US enterprise decision makers with existing RPA systems
Source: A commissioned study conducted by Forrester Consulting on behalf of Tricentis, November 2019

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Figure 6

"Which of the following are causes of bot breakage at your organization?"*

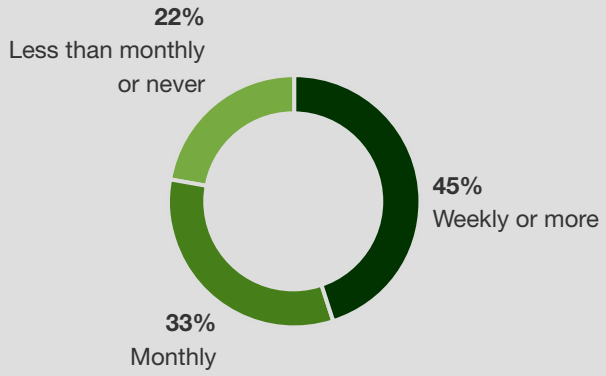
54% Infrastructure-related issues

49% Application UI changes that impact bot processes

41% Data changes that impact bot processes

36% Tasks are too complex/too many decisions involved

"How often are operations negatively affected by a broken bot at your organization?"*



"What are typical repercussions of broken bots at your organization?"

58% Impacted customer service

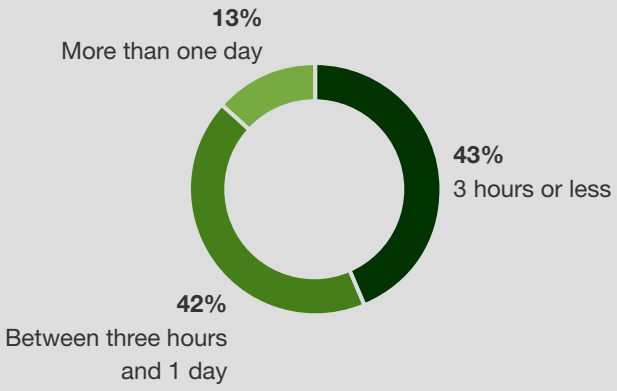
51% Lower employee productivity

51% Impacted employee experience

48% Impacted costs and/or revenue

44% Increased employee error rates

"How long, on average, does it typically take to respond to and fix a broken bot at your organization?"*



"In case of bot breakage, how does your organization ensure business continuity?"*

43% We route work to an internal resource queue

28% We route work to a third-party shared service center

23% We have complete backup/high availability capacity

5% We don't – we stop the process associated with the broken bot and try to fix it as quickly as possible

Base: 260 US enterprise decision makers with existing RPA systems
*Base: 271 US enterprise decision makers with existing RPA systems
Source: A commissioned study conducted by Forrester Consulting on behalf of Tricentis, November 2019

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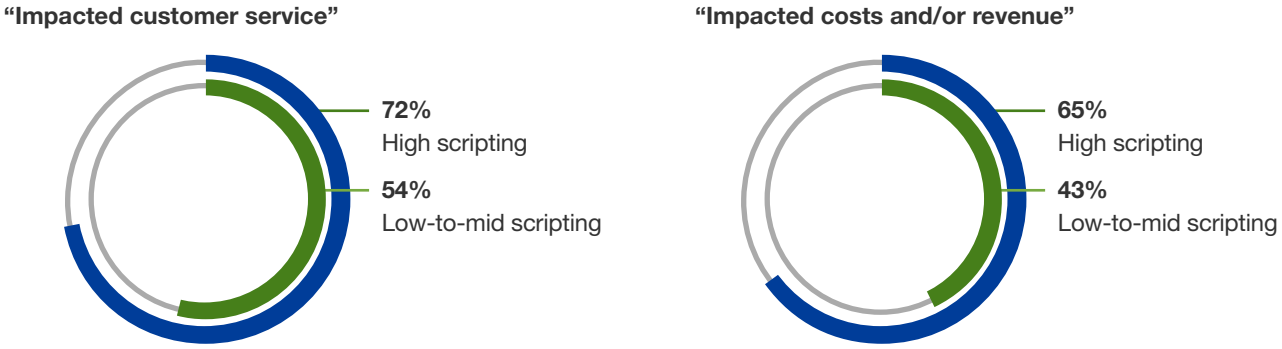
› **Scripting permeates today's RPA implementations.** Although RPA vendors promote the notion of "democratizing" automation for business users, the reality is that the vast majority of RPA implementations involve scripting. Virtually all (99%) respondents say their organizations' bot logic requires some scripting, with a weighted average of 42% of bot logic expressed in scripting. As noted earlier, most firms report that their RPA programs require advanced programming skills, which leaves RPA out of reach for citizen developers.

› **High scripting is associated with greater pain from broken bots.** When we zeroed in on organizations that require the highest degree of scripting (more than 60% of bot logic expressed in some scripting or programming language), we found it correlated with higher likelihood or repercussions from broken bots. High-script firms were 1.3 times more likely to experience impacted customer service from broken bots, and 1.5 times more likely to have impacts to cost or revenue — for example, from delayed transactions (see Figure 7).

Figure 7

Typical repercussions of broken bots at your organization



Base: 271 US enterprise decision makers with existing RPA systems
Source: A commissioned study conducted by Forrester Consulting on behalf of Tricentis, November 2019

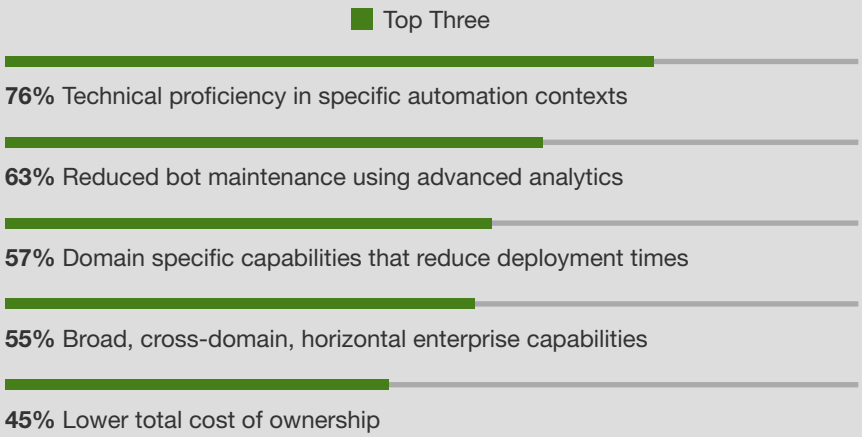
Vendor Selection, CoEs, And Key RPA Program Features Close The Bot Maintenance Gap

When we looked at what organizations are doing to mitigate the challenges of RPA, a few key themes emerged:

- **Leading firms minimize scripting.** When it comes to the percentage of bot logic expressed in some scripting or programming language, leading firms are decidedly lower than emerging firms (11.4% weighted average compared to 45.9% weighted average).
- **Software test automation success is linked to effective bot maintenance and cost control.** Firms that are effective at software test automation are also 1.4 times more likely to be effective at controlling RPA costs. They are 1.3 times more likely to be effective at maintaining RPA bots (e.g., cost and response time for keeping bots running).
- **Firms prioritize vendors that will reduce maintenance and deployment times.** When asked about the selection process for RPA providers, respondents ranked technical proficiency in specific automation contexts, reduced bot maintenance, and domain specific capabilities as their top three capabilities (see Figure 8). These features are largely responsible for reducing maintenance and deployment times.
- **Presence of a CoE is correlated with RPA program efficiency.** Firms with CoEs have made further progress with task automation — they have automated 3.5 times more tasks compared to firms without CoEs (89 tasks compared to 25). They are 1.3 times more likely to have increased employee productivity as a result of their RPA program.

Figure 8

"When considering RPA providers, how important are the following vendor capabilities or features to you? (Rank up to three)"



Base: 271 US enterprise decision makers with existing RPA systems
Source: A commissioned study conducted by Forrester Consulting on behalf of Tricentis, November 2019

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Key Recommendations

RPA is changing the workplace and how firms engage with their customers. Treat RPA as only one part of your automation strategy and get ahead of well-documented problems found in this research by addressing RPA concerns with centralized guidance. Be sure to:

Develop a proactive approach for bot resiliency. Application changes and system issues are leading causes of bot breakage, affecting revenue and customer experience and adding to staff maintenance costs. Work cross-functionally to communicate pending app upgrades and work with infrastructure and operations professionals to implement the latest failure analysis and self-healing technology.

Include customer experience (CX) and revenue in your hunt for operational efficiency. Cost reduction through the integration of legacy apps on a processor's desktop is the typical RPA use case. This is all good, but RPA can also generate new revenue and improve CX. Both debt collection and reduced cycle time for an order-to-cash process are fertile areas for revenue. CX can have more dramatic results.

Build an assessment model to guide RPA process selection. RPA plugs gaps in legacy systems, but it will sometimes end up delaying needed system modernization. Some processes will benefit more from new digital approaches, not from a patchwork of RPA robots doing the same old process with slightly less labor. Apps with a less than stable history are not good candidates for automation.

Start centrally but plan to federate responsibility to the business. Formalize the operating model early in the RPA journey. It's acceptable to tune operations in a small centralized team, but plan to spread out outlined functions to individual business units. Develop a joint understanding between business and technology teams before automation projects get out of control. This will drive a quicker set of results and avoid a host of potential RPA issues.

Build the operating model around automation — not a specific RPA tool. Forrester has identified 13 AI technology building blocks that can add intelligence to the digital workforce of the future.[5] In addition, you may end up with a couple of RPA tools that specialize in a process domain such as finance, contact center, test and automation, or IT service management. Building operating models tightly around a single RPA vendor is a poor long-term play. Instead, follow a broader strategy that focuses on automation beyond — but including — RPA.

Keep change management initiatives front and center. Internal users and immediate managers, despite stated desires, have a great fear of change as well as heightened anxiety about robotic solutions replacing them. Leading companies will allocate required resources that make change the norm, not a feared outcome.

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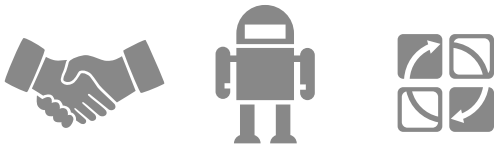
Appendix A: Methodology

In this study, Forrester surveyed 271 US-based enterprise decision makers with existing RPA programs to evaluate the hurdles that firms face in scaling RPA. Survey participants included decision makers in both business and IT roles. Questions provided to the participants asked about the scale of RPA programs, bot breakage, and resiliency. Respondents were offered a small incentive as a thank you for time spent on the survey. The study began in October 2019 and was completed in November 2019.

Appendix B: Demographics/Data

RESPONDENT POSITION/DEPARTMENT

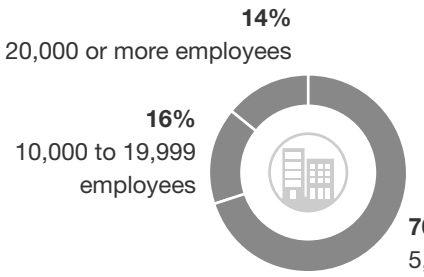


43% Business

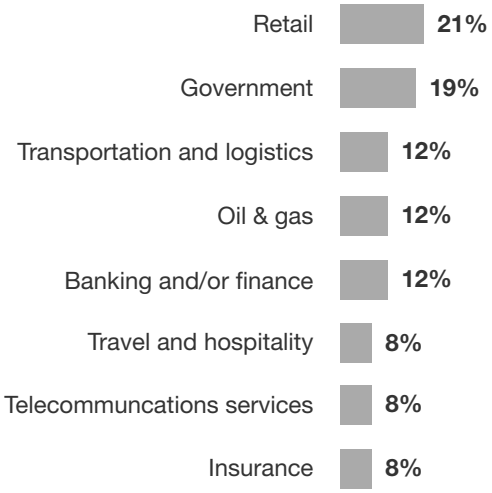
29% Technical doers

28% Technical planners

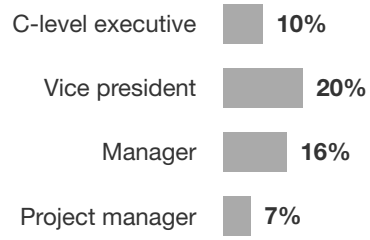
COMPANY SIZE



INDUSTRY



RESPONDENT LEVEL



Base: 271 US enterprise decision makers with existing RPA systems
Source: A commissioned study conducted by Forrester Consulting on behalf of Tricentis, November 2019

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Appendix C: Related Forrester Research

"Gauge Your RPA Maturity," Forrester Research, Inc., February 21, 2019.

"Use The Rule Of Five To Find The Right RPA Process," Forrester Research, Inc., September 12, 2018.

"The RPA Services Market Will Grow To Reach $12 Billion By 2023," Forrester Research, Inc., July 10, 2019.

Appendix D: Endnotes

[1] Source: "The RPA Services Market Will Grow To Reach $12 Billion By 2023," Forrester Research, Inc., July 10, 2019.

[2] We scored firms as emerging, scaling, or leading in their RPA programs by scoring them on their self-reported effectiveness for the following criteria:

1.) Resilient automation

2.) Bot maintenance

3.) RPA skill development

4.) RPA cost control

5.) Identifying appropriate processes to automate

6.) Centralizing automation efforts to a single CoE

7.) Connecting RPA task automation with more advanced automation

8.) Designing human-bot interactions so employees can enhance and tailor their own personal bots

9.) Change management related to RPA

10.) Software test automation

11.) Functional test automation

12.) Business process management

[3] Source: "Inquiry Spotlight: Forrester's RPA Inquiries Reveal Activity But Low Maturity," Forrester Research, Inc., December 20, 2017.

[4] Source: "Use The Rule Of Five To Find The Right RPA Process," Forrester Research, Inc., September 12, 2018.

[5] Artificial intelligence is not new. It emerged as a computer science discipline in the 1950s and has been a persistent theme in science fiction. What is new now is that billions of dollars are flowing into AI startups and software development efforts by both the internet giants and enterprise software vendors alike. It promises to be the technology. To understand the pragmatic building blocks you can use today to add AI to your applications, see the Forrester reports "Artificial Intelligence: What's Possible For Enterprises In 2017," published November 1, 2016, and "TechRadar™: Artificial Intelligence Technologies, Q1 2017," published January 18, 2017.