A Robot for Every Worker:
Are We Ready for a People-First Automation Mindset?

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Authors:
Neil Ward-Dutton
Maureen Fleming
John O'Brien

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Executive Summary

As the adoption of robotic process automation (RPA) continues to spread across industries, there is increasing talk of a compelling vision — that of a robot for every worker. At first glance, there is clear potential value for workers and businesses in this. Who doesn't labor under administrative tasks they hate? And given that RPA capabilities are maturing quickly, RPA platforms can address an increasing range of use cases.

But is the goal of a robot for every worker realistic and achievable? And if so, what can we learn from the organizations that have already embraced it? To find out, IDC conducted a global survey of organizations, as well as a series of in-depth interviews with organizations that have instituted broad and successful programs of this nature.

Key Findings

The potential to expand value from the adoption of RPA is everywhere. Organizations that are experienced with RPA see significant benefits (for example, 79% of our respondents with RPA experience highlighted error reduction, and the same percentage highlighted improved process efficiency as key benefits). The vast majority of these organizations report that RPA is either meeting or exceeding expectations. Meanwhile, our study also found that organizations that have not yet adopted RPA report the kinds of work challenges that RPA is well placed to address.

The study also clearly highlights that workers see value in the concept of a robot for every worker and can point to multiple examples of situations that would be improved through automation. The majority of workers (nearly three-quarters) are open to having robot assistants help them with everyday work, and what's more, many are interested in getting involved in creating bots, either by themselves or as part of larger teams. Workers' needs sharply contrast with decision makers, however, who disagree with each other about whether there is a benefit to using robots across their workforce (42% agree vs. 58% that disagree).

The root cause of this mismatch in perspectives stems from a key tension between two factors:

- **Workers see first-hand the impact that robots can make on their daily activities.** When we analyze the challenges workers face, we see a classic long tail effect. Workers IDC surveyed saw value in automation helping them with tasks throughout their working day. However, it is clear that not everyone wants automation to help them in the same way, or with the same work. The automation opportunity varies throughout the organization.

- **Most decision makers are stuck in a process-first mindset.** Decision makers have been successful for decades focusing primarily on how to make business processes as efficient as possible and drive opportunity exploration and solution design and implementation from the center. This perspective, while effective, misses out on the long tail of productivity improvement opportunities that commonly exists, and which in aggregate can deliver big returns for organizations.
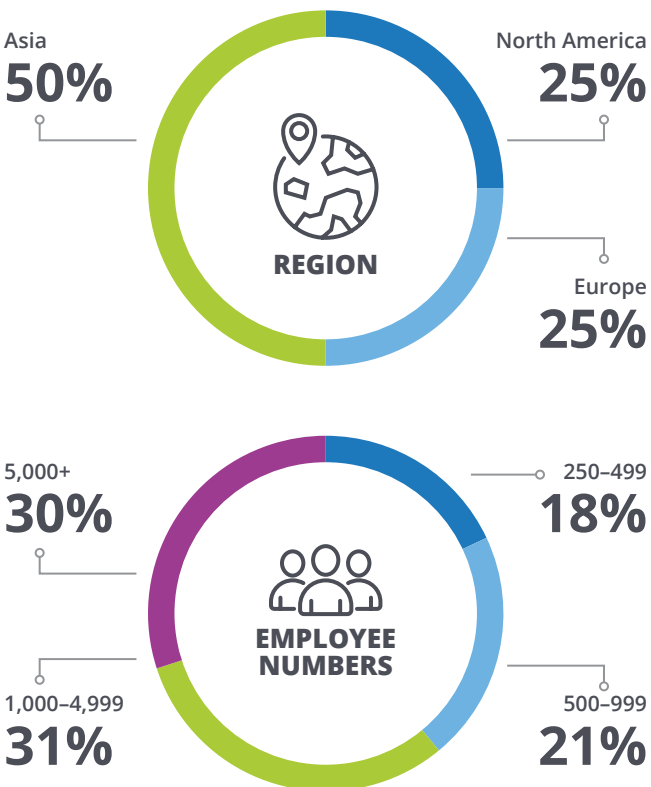
Our case studies demonstrate that successful organizations eventually embrace and extend their capabilities to create what we call a people-first mindset. This mindset involves enabling workers to help themselves and their teams become as effective and productive as possible, and is key to responding to the challenge of helping all workers benefit from automation. Automation Centers of Excellence (COEs) are crucial to this transition. They must extend their mandates from being purely focused on acting as control authorities to being enablers of, and advocates for, much wider automation communities across the business.

The largest gains go to those organizations that can run both approaches together: process-first to address problems of inefficient work at scale and people-first in parallel to harness the ideas and energy of individual workers and teams and address productivity issues. Finally, they leverage evolved automation COEs to create a feedback loop between the two that identifies productivity problem hotspots which are, in fact, better dealt with using a process-first approach.

About This Study

In 2020, IDC ran a global research survey in North America, Europe, and Asia of 431 respondents from 19 industries working in companies that had at least 250 employees (see Figure 1 for details of the respondents). 377 of the respondents were used in the analysis presented in this report.

FIGURE 1

IDC Global Study Respondents

Asia
50%

North America
25%

REGION

Europe
25%

5,000+
30%

250–499
18%

EMPLOYEE NUMBERS

1,000–4,999
31%

500–999
21%

Source: IDC Robot for Every Worker Survey 2020, N= 431

We asked decision makers and workers whether they were using RPA or other labor productivity enhancing technologies, and then segmented the respondents as follows:

1. Automation decision makers with RPA experience

2. Automation decision makers without RPA experience

3. Regular workers where RPA is adopted

4. Regular workers where RPA is not adopted

This spread was designed to give us a rounded view of RPA implementation and practice maturity in today's organizations and enable us to test our broader hypotheses:

- There is value in every worker having access to a software robot as an assistant.

- Decision-makers who have already adopted RPA see the value in providing software robot assistants to all employees.

IDC complemented its global survey with a set of in-depth case study interviews with enterprises that are investing with the core assumption that a robot for every worker is beneficial to the enterprise and that it is worth the investment. Our aim was to compare the survey results with findings direct from enterprises achieving success with their efforts to deliver RPA for every worker.
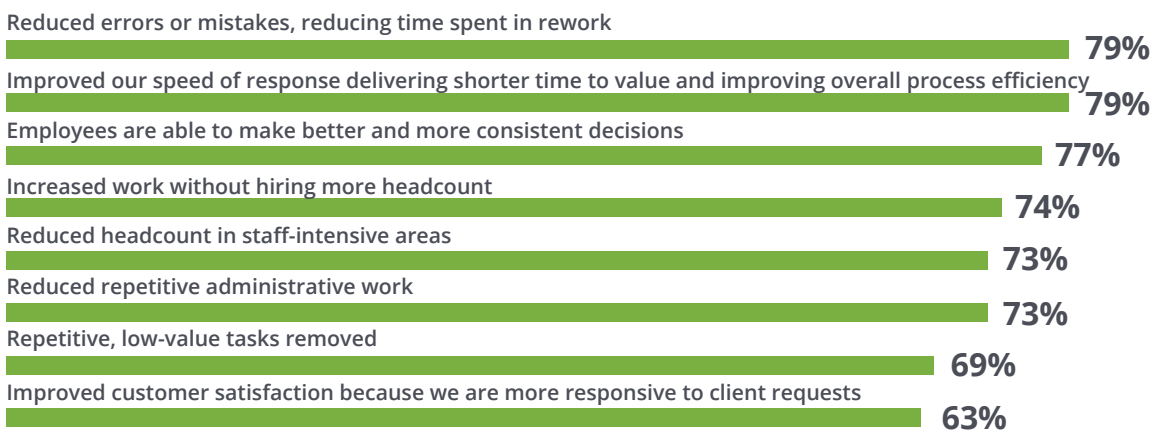
Taking the Pulse of RPA

Organizations are Successful with RPA, but Most are not yet Fully Mature

The results of our global survey show that decision makers involved with RPA see clear benefits. Figure 2 shows the RPA program improvements that respondents indicated delivered medium to high levels of benefit. As the figure shows, these are benefits commonly achieved with RPA adoption, revolving around reducing mistakes, speeding up processes, making employees more efficient, and achieving greater productivity. Any organization new to RPA should be able to realize these benefits.

FIGURE 2

RPA Programs Demonstrate Clear Benefits

Q: How has the use of RPA provided benefits to your organization?

Reduced errors or mistakes, reducing time spent in rework
79%

Improved our speed of response delivering shorter time to value and improving overall process efficiency
79%

Employees are able to make better and more consistent decisions
77%

Increased work without hiring more headcount
74%

Reduced headcount in staff-intensive areas
73%

Reduced repetitive administrative work
73%

Repetitive, low-value tasks removed
69%

Improved customer satisfaction because we are more responsive to client requests
63%

Source: IDC Robot for Every Worker Survey 2020, N=377

The RPA benefits expressed by our survey respondents demonstrate that RPA is rooted in classic business process improvement techniques, and this focus of improvement is becoming standard. In this analysis, we call this a process-first RPA implementation and practice mindset. Here, improvement opportunities are viewed through the question: "How can we improve this process by replacing or augmenting human workers with automation to improve efficiency, quality, and speed while lowering costs?"

However, there is another thread running through the RPA value proposition that is more closely associated with talent metrics. For example:

- Employees who feel valued and like their jobs are often much better at them (the equivalent of an employee net promoter score metric)

- The total cost of retaining employees is lower than replacing an employee (operating costs metric)

- In addition, during times of crisis such as the COVID-19 pandemic, employee onboarding and hiring contingent labor can be slow and painful (driving a blend of operating costs and lower levels of employee satisfaction).

Enterprises adopt RPA to respond to labor talent and capacity challenges more readily, and in more forward-thinking organizations, managers have moved beyond simply seeing RPA as an FTE take-out initiative.

The belief in employees as critical is summed up well by dentsu, a global media and digital marketing communications company. dentsu's business case for embracing all workers' jobs as open to exploration with automation is built around cost reduction, resource utilization (billable hours), and quality, but the organization is also looking at things like work-life balance, involvement in innovation, creativity, and skills development.

Our mission is to elevate human potential, not eliminate it.

Max Cheprasov
Chief Automation Officer, dentsu

Other RPA adopters with a robot for every worker program view employee engagement in automation programs as transformational. By giving their workers opportunities to become directly engaged with automation programs at some level, organizations empower workers to take a vested interest in improving their own productivity, and to be recognized for it. For them to be successful with automation, there must be a pervasive culture that embraces the benefits of automation.

Global professional services firm PwC realized quite quickly after it began its RPA journey that automating back-office processes wasn't by itself going to take the organization where it needed to get to, from an operating impact perspective, and turned to the front office and employees. Direct employee use of automation tooling to build their own automation became a strategic area of focus:

Adoption is the new engagement margin. And what we mean by that is if people don't adopt the automation technologies you provide, then you're not going to change the business. People have to make adoption of automation the fabric of their job.
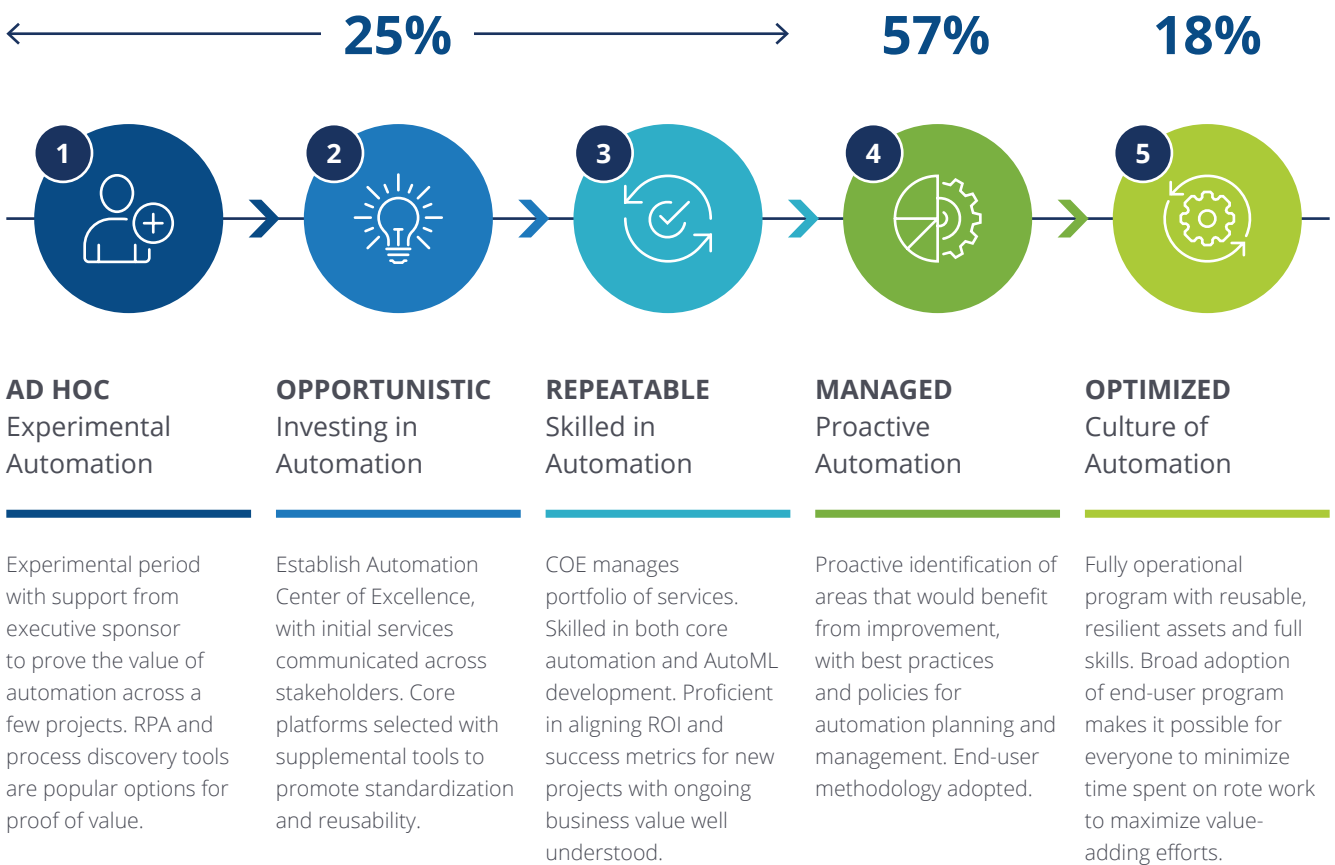
Suneet Dua
Partner, Chief Product Officer, PwC

This survey also clearly supports IDC's broader research showing that organizations worldwide are progressing on common pathways through a set of maturity stages in their automation practice. Figure 3 provides an illustration of IDC's Automation MaturityScape maturity model with five maturity stages. We can see that overall, maturity is still skewed towards the Managed stage.

FIGURE 3

Measuring Survey Respondents Against IDC's Automation Maturity Model

25% **57%** **18%**

1 **2** **3** **4** **5**

| AD HOC | OPPORTUNISTIC | REPEATABLE | MANAGED | OPTIMIZED |
Experimental Automation	Investing in Automation	Skilled in Automation	Proactive Automation	Culture of Automation
Experimental period with support from executive sponsor to prove the value of automation across a few projects. RPA and process discovery tools are popular options for proof of value.	Establish Automation Center of Excellence, with initial services communicated across stakeholders. Core platforms selected with supplemental tools to promote standardization and reusability.	COE manages portfolio of services. Skilled in both core automation and AutoML development. Proficient in aligning ROI and success metrics for new projects with ongoing business value well understood.	Proactive identification of areas that would benefit from improvement, with best practices and policies for automation planning and management. End-user methodology adopted.	Fully operational program with reusable, resilient assets and full skills. Broad adoption of end-user program makes it possible for everyone to minimize time spent on rote work to maximize value-adding efforts.

Source: IDC 2020

80% of the decision makers that have adopted RPA are providing workers with access to RPA tools that enable them to automate their work. Within this group, 22% rated their program as highly successful, and 71% achieved moderate success. By that measure, looking at both decision makers running an end-user program and those that are not, 18% of the decision maker respondents work in an organization operating at the highest level of maturity. Of the remainder, 57% are in the Managed stage, and the remaining 25% align with earlier stages of maturity.

Who Wants a Robot for Every Worker?

Having established that most RPA adopters involve at least some end users in their programs and are seeing some moderate success, let us return to our initial hypotheses. First, is there value in every worker having access to a software robot as an assistant? And second, do decision-makers that have already adopted RPA see the value in supplying software robot assistants to all employees?

Workers Tell us There is Value in Robot Assistants, and Value in Getting Involved in Automation

Our survey polled a broad range of workers who are not yet involved in RPA programs, including coordinators, administrators, process workers, knowledge workers, and professionals/subject matter experts. We asked a variety of questions about work challenges; perceptions of the potential value and threat of automation; workers' interests in getting involved in automation of their own work by creating bots, by themselves or as part of larger teams; and factors that would help them feel comfortable with being involved in automation programs.

Overall, workers clearly see the value in having access to robot assistants to help them in their work, and furthermore, there is moderate (but qualified) worker appetite for getting directly involved in automation programs by creating bots, and clearly enough interest to identify a pilot group to build a successful program. Figure 4 provides an overview of the key insights from these respondents.
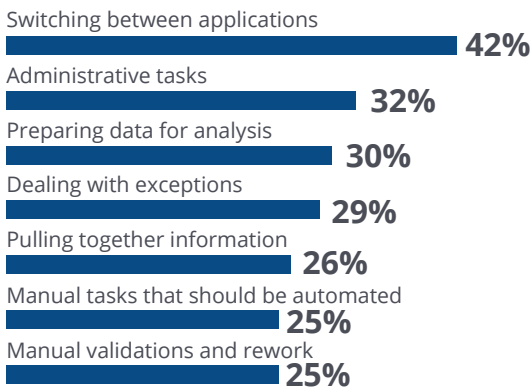
When asked about the challenges associated with everyday work, the most cited challenge was switching between applications to carry out a task (42%), followed by administrative tasks (32%), then data preparation (30%). When asked how they felt about automation replacing part of their work, 71% of worker respondents selected at least one of the options that included the word "happy" while 46% selected options that included the word "worried." There was only a 17% overlap of respondents who had mixed emotions and selected both happy and worried options.

When asked about their interest in getting directly involved in creating bots, we saw very positive signs from respondents. 25% of respondents were firm in their willingness to get involved, 38% indicated they may be interested, and 27% were clear that they would not like to get involved. Workers clearly told us that there are conditions attached to getting involved, though. For example, 29% of these respondents indicated that any system would need to be easy to use, and related to that, 20% do not want to go through a lot of technical training. 28% wanted assurances that their job would not be completely automated, and 22% were clear that being able to share ideas with others about what to automate would be a key factor.

FIGURE 4
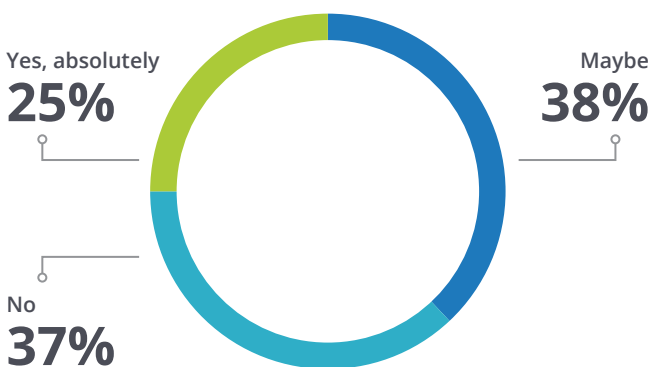
Workers Show There is Value in a Robot for Every Worker

Workers with medium to high challenges spending too much time on the following. (Workers not yet impacted by RPA initiatives)
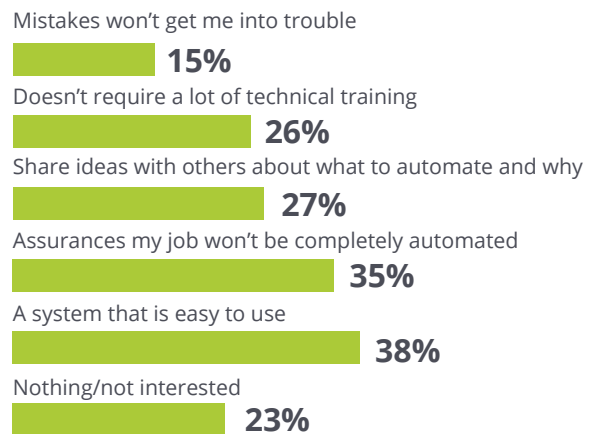
Switching between applications
42%

Administrative tasks
32%

Preparing data for analysis
30%

Dealing with exceptions
29%

Pulling together information
26%

Manual tasks that should be automated
25%

Manual validations and rework
25%

How would you feel about technology that can automate some of the routine tasks you work on?

Happy to spend more time on more interesting work
37%

Happy to get more work completed
34%

Worry that my job might become redundant
19%

Worry that I would have to spend time fixing problems created by automations
14%

Worry that my team might shrink over time, meaning I'd become lonely or isolated
13%
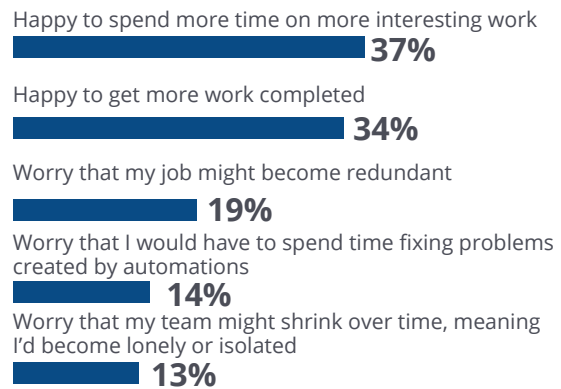
Would you be interested in being directly involved with creating robots that help you automate your own routine tasks?

Yes, absolutely **25%**

Maybe **38%**

No **37%**

What would help you to become more interested or confident in potentially creating robots?

Mistakes won't get me into trouble
15%

Doesn't require a lot of technical training
26%

Share ideas with others about what to automate and why
27%

Assurances my job won't be completely automated
35%

A system that is easy to use
38%

Nothing/not interested
23%

Source: IDC Robot for Every Worker Survey 2020, N=183

However, it is important to emphasize that in practice, workers getting involved in creating bots does not necessarily mean individual workers acting as citizen developers. When we asked workers with RPA experience whether they had already been actively involved in creating bots, 42% reported that they had either participated in hackathons or workshops, or had acted as part of broader teams to get bots developed. Only 11% told us that they had built bots by themselves that were in production.

Decision Makers' Mindsets Dictate How They See the Value of All Workers Using Robots

We asked decision makers with RPA experience several questions about their programs. When asked whether they believed RPA would eventually be applied to all workers in their organizations, 27% replied that RPA technology as it is today would eventually apply everywhere, and 15% replied that if augmented with AI, RPA would be applicable everywhere. By contrast, 58% indicated their belief that RPA — even if augmented with AI — will never apply everywhere. Of the decision makers we surveyed that have not yet adopted RPA, 35% believed or were leaning toward believing that RPA could be useful to all workers, 63% disagreed, and 2% were unsure.

Digging into this issue more deeply is informative. Decision makers that do not support end users being directly involved in automation work through bot creation are much more negative about the value of a robot for every worker, with 79% negative and 21% positive. Decision makers actively engaging users in automation programs through some mix of hackathons, workshops, and active development work are much more evenly split (47% positive and 53% negative).

FIGURE 5

Decision Makers Mindset Dictate Their View of a Robot For Every Worker

Will RPA eventually apply to all working areas in your organization?

Comparing no end-user access and those that offer access

- 42%
- 58%

- 53%
- 47%
- 79%
- 21%

End-user program

No end-user program

- Yes and leaning toward yes
- No and leaning toward no

- Yes and leaning toward
- No and leaning toward no
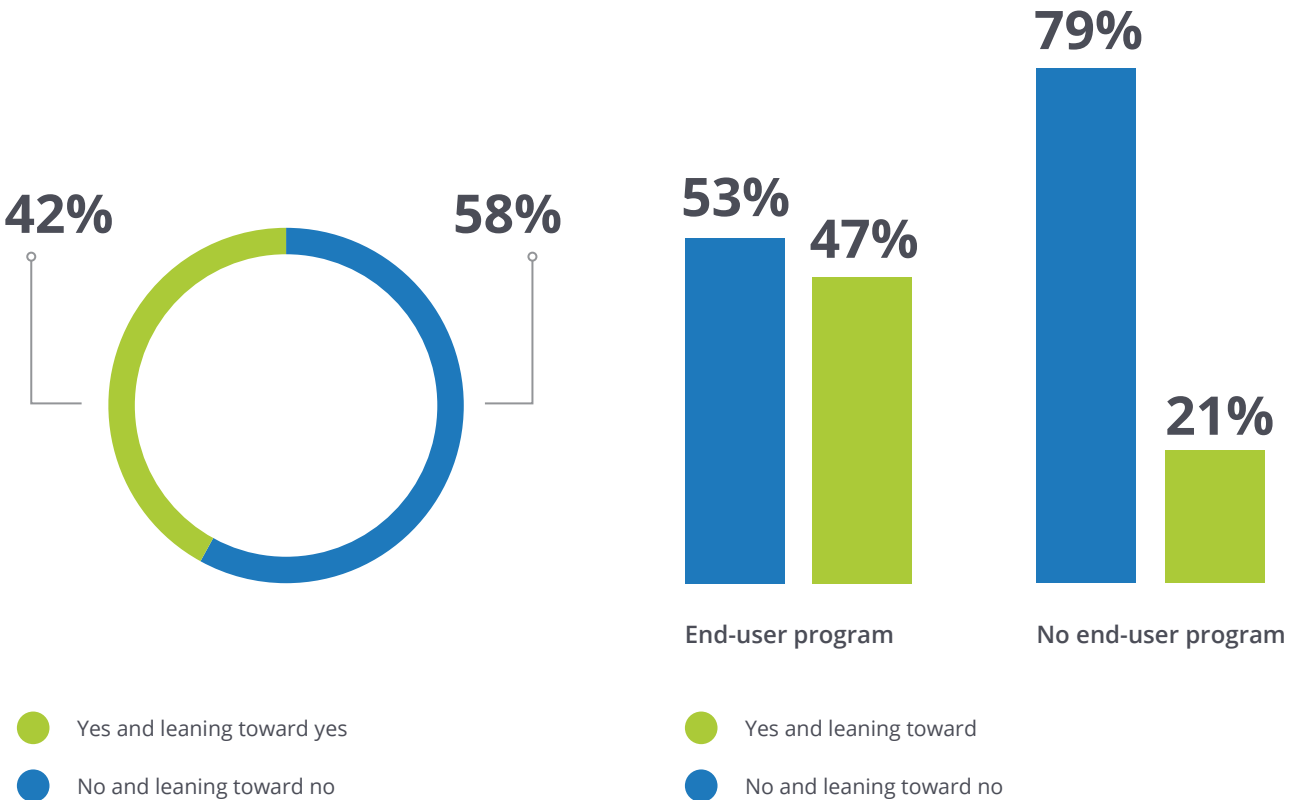
Source: IDC Robot for Every Worker Survey 2020, Decision-maker RPA adopters, N=95

Making the Case for a Robot for Every Worker: Addressing the Long Tail of Opportunity

If workers are quite clear, overall, in expressing the need for robot assistance with work, why are decision makers not in step with them? The answer lies in a fundamental misalignment between the mindset that most organizations typically bring with them as they develop RPA programs and the true nature of the automation opportunities.

A traditional RPA program, led with a process-first mindset, looks at improving business processes by automating activities to lower process costs and improve process efficiency, quality, and speed. When considering a specific process, it is relatively easy to identify and target the repetitive activities of administrative workers who spend most of their time in that one process with RPA. By contrast, again from a process-first mindset, the value of applying RPA to someone who works across a wide variety of activities and processes is much more difficult to identify.

With a process-first approach, business cases for RPA investment rely on a critical mass of workers performing similar tasks using similar applications and data sources that collectively aggregate to achieve measurable business value once the work is automated. The cost of automating work and managing automations in a process-first RPA program places a high burden on justifying the business case.
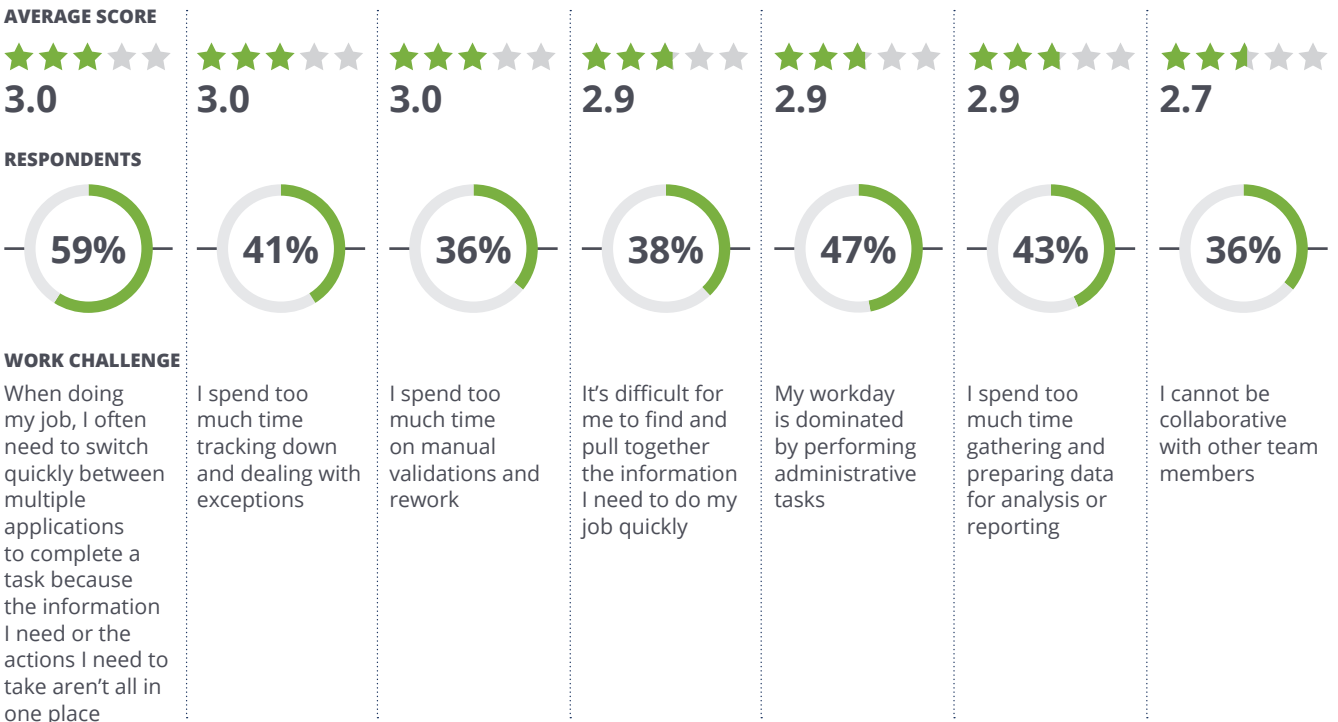
However, our survey is clear that the overall opportunity to deliver robot assistants to workers does not align with this kind of business case justification.

For example, we can see from Figure 4 that although some of the tasks posing challenges to workers are part of a clear business process (such as investigating and handling exceptions), some of the tasks named are common across domains (such as gathering information or preparing reports). Clearly, workers with interest in improving their productivity and ability to add value to their organizations are not exclusively heads down process workers.

Looking more deeply at survey responses reveals that the overall set of automation opportunities in organizations typically has a long tail. Figure 6 shows the results we obtained when we asked workers to rate the value they would gain from using automation to relieve challenges in their daily work. What is clear is that no particular challenge stands out above the others — respondents rated all the challenges roughly equally.

FIGURE 6

A Long Tail of Challenges to Address

AVERAGE SCORE: 3.0, 3.0, 3.0, 2.9, 2.9, 2.9, 2.7

RESPONDENTS: 59%, 41%, 36%, 38%, 47%, 43%, 36%

WORK CHALLENGE:
- When doing my job, I often need to switch quickly between multiple applications to complete a task because the information I need or the actions I need to take aren't all in one place
- I spend too much time tracking down and dealing with exceptions
- I spend too much time on manual validations and rework
- It's difficult for me to find and pull together the information I need to do my job quickly
- My workday is dominated by performing administrative tasks
- I spend too much time gathering and preparing data for analysis or reporting
- I cannot be collaborative with other team members

Source: IDC Robot for Every Worker Survey 2020, N=128

The most frequently cited challenge in Figure 6 — the need to switch between multiple applications to complete tasks — is cited by 59% of workers. But only 20% of those respondents told us that applying automation would yield high value for them. The averaged response was 3.0 (equating to moderate value). At the same time, however, survey respondents on average cited multiple tasks that could be improved through automation.

Systematically automating business tasks that are within the long tail of automation opportunity would deliver many hours saved across a workforce, freeing up capacity to allow workers to focus on efforts that deliver higher value. And an increasing portion of the workforce performs work that varies over a day, where they may be knowledge workers, coordinators, or subject matter experts called in to support a variety of activities.

Our in-depth case study interviews with automation leaders showed how organizations can flip this around. For example, Dutch airline group KLM began its end-user focused automation program by targeting improved employee experience. In one instance, a worker had repetitive strain injury and the automation helped relieve their stress while allowing them to work on more complicated activities.

To run a mature, cross-enterprise RPA program, the COE must assume that there is potential value in every worker having a robot assistant and put a method in place to make that possible. We think about this as extending the COE to incorporate a methodology built around developing and supporting a growing team of end-user champions and also aimed at focusing on special employee situations that require help provided by the RPA developers in the COE.

Learning from Leaders: Build a New Mindset and a Methodology for Success

In the earlier sections of this paper, we established that robot for every worker programs have major potential, but that unfortunately, the traditional process-first mindsets baked into RPA programs cannot by themselves enable organizations to fulfil the vision. In this section, we explore how eight leading organizations have transformed their approaches to RPA programs beyond that process-first mindset and enabled themselves to truly embrace the concept of a robot for every worker.

In our study, we carried out eight in-depth case study interviews of organizations with highly mature RPA programs across North America, Europe, and Asia. We worked to understand as much as possible about how each organization had reached its current level of maturity. With these interviews, we learned:

- How each organization began with RPA and achieved buy-in from the COE sponsors.
- What motivated them to build out their citizen developer program.
- The degree to which executives were involved in sponsoring initiatives.

- How they rolled out and scaled their RPA programs over time and developed their internal capabilities to support projects.
- How they measured success, and the outcomes they achieved.

Common Patterns of Practice

As you would expect, every case study story was different. After all, these organizations spanned a wide variety of industries, cultures, business models, and geographies. What was striking, though, was that there were many similarities, too. Figure 7 provides an overview of the patterns of practice we discovered from these case studies.

FIGURE 7

Patterns of Practice From the Most Mature Organizations
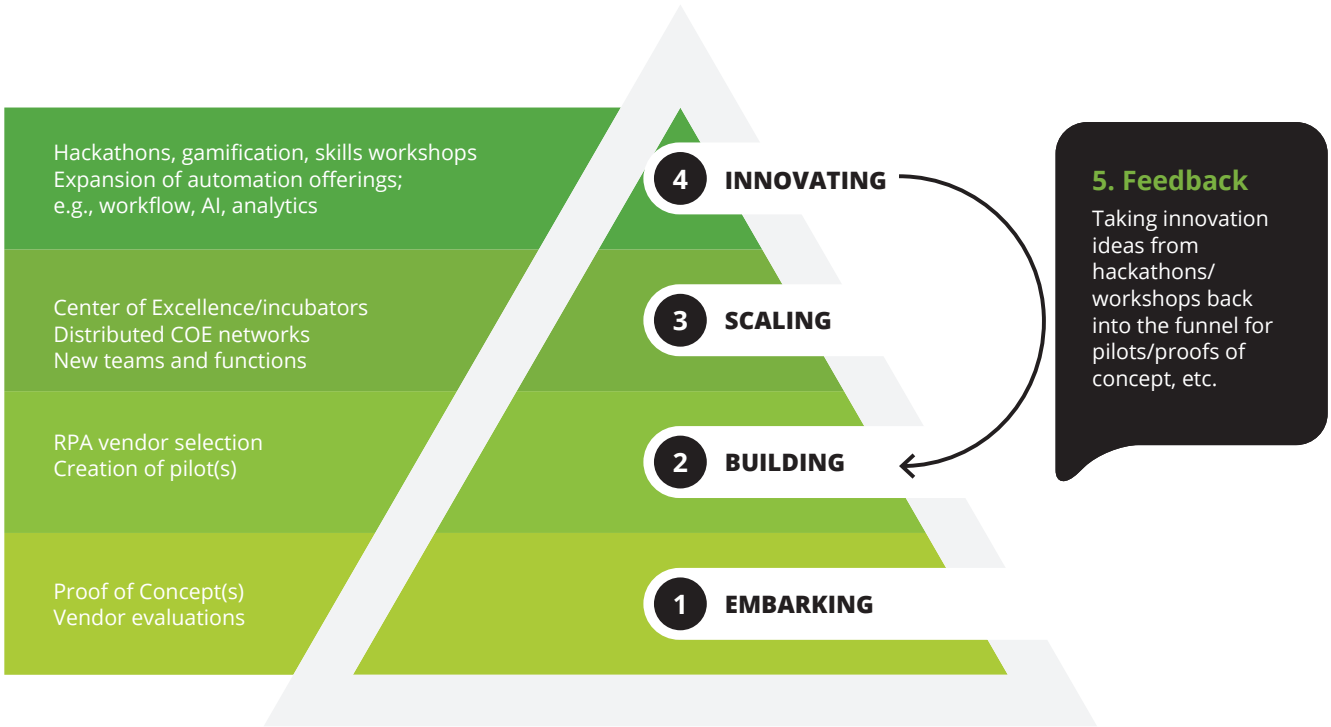
Source: ; IDC, 2020

Some of the common actions taken by our case study participants, particularly as they initially embarked on their RPA journeys, will be obvious to anyone familiar with good practice when introducing new technologies to businesses: creating proofs of concept, evaluating and selecting vendors, setting up pilot projects, and so on.

But as our case study organizations began scaling their programs, they were also highly consistent in a less obvious way. What came through time and again was that these organizations realized that their ambitions for returns from their RPA investments could only be satisfied by engaging work teams across the business units and teams directly, bringing them into the heart of the overall program and enabling them to contribute with impact.

Beyond Citizen Developers: Hackathons, Workshops, and Ongoing Engagement

The actions these organizations all took went further than simply working to identify and educate "citizen developers" (end-users that would play hands-on roles in RPA bot development teams). Some organizations, like Singtel and another Asian mobile operator, led with hackathons — short, energetic community events in which diverse groups of people team up to quickly experiment and prototype ideas of solutions that they feel will benefit the community. Others led with programs of more traditional, localized, and small-scale workshops to engage workers and elicit ideas for RPA-enabled work improvements. Yet others, such as KLM, developed training courses, with the assistance of vendors or partners, to help workers get started. All, though, were focused on how they could scale participation and engagement in every aspect of the RPA program — not just bot development.

> The incentive is to upskill yourself, and we help to reboot your skills. This is a 4-week guided e-learning, not a hackathon. We've also organized a virtual academy live to build a bot hosted by UiPath.

Asher Lake
KLM

Finally, all these leading RPA adopters realized that creating initial engagement with workers when imagining and designing prototypes was not enough. All realized that they needed to ensure that workers' initial contributions and participation were effectively and visibly acted upon, even when those workers were not subsequently involved in developing bots. Workers needed to see that their contributions were being taken seriously, to ensure that they would continue to value contributing over the long term.

> We ran a hackathon with UiPath over 2 days. Starting with 786 ideas, a team of 64 whittled these down to 32 ideas. 32 bots were implemented, saving 94 FTEs. Every Wednesday we run an 'RPA clinic' — users register in advance, and people bring their problems to talk together with each other and with experts.

Asian mobile operator

ConocoPhillips, one of the world's largest independent oil and gas exploration and production companies, first focused on unattended automation, developing a center of excellence within IT to support the development, adoption, and governance of RPA across the company. As this program matured, the company expanded it to include attended automation, and promoted citizen development across users from all areas of the business, with efforts to engage and educate workers on an automation-first mindset.

> Consider how your process would be designed if you were able to do it with automation in mind from the outset — how would you change your process, both the steps and the timing?

Aftab Ahmed, Program Manager, Emerging Digital Technology for Functions, ConocoPhillips

In the ConocoPhillips program, citizen developers are supported through peer networking, tools to share ideas and solutions, and a center of excellence that provides guidance and standards and can help complete more complex or leverageable automations, ensuring that workers always have support in their efforts.

To revisit our observation from earlier in this paper, as all these leading organizations progressed through the initial stages of RPA maturity, they started out with a process-first mindset, just like the organizations we surveyed. Here, the focus was on creating automation built to deal with repetitive high-volume tasks, such as data analysis and accounting. Attention then shifted to use cases where the full automation of tasks might not always be possible, but where instead bots could be used to augment human task execution. But crucially, the mindset was still process-first.

As these organizations began to drive engagement and participation much more widely, though, getting diverse and sometimes unexpected contributions led them to develop a people-first mindset, which is quite different from a process-first mindset. A people-first mindset for RPA is fundamentally about asking the question "how can we make our people as productive and effective as they can be?"

People-First RPA: Five Stages to Develop a New Mindset

So, what lessons can we learn from these leading organizations' journeys, and what can you take away as actions in developing and implementing a people-first RPA mindset? Figure 8 gives an overview.

FIGURE 8

Shifting to a People-First Mindset
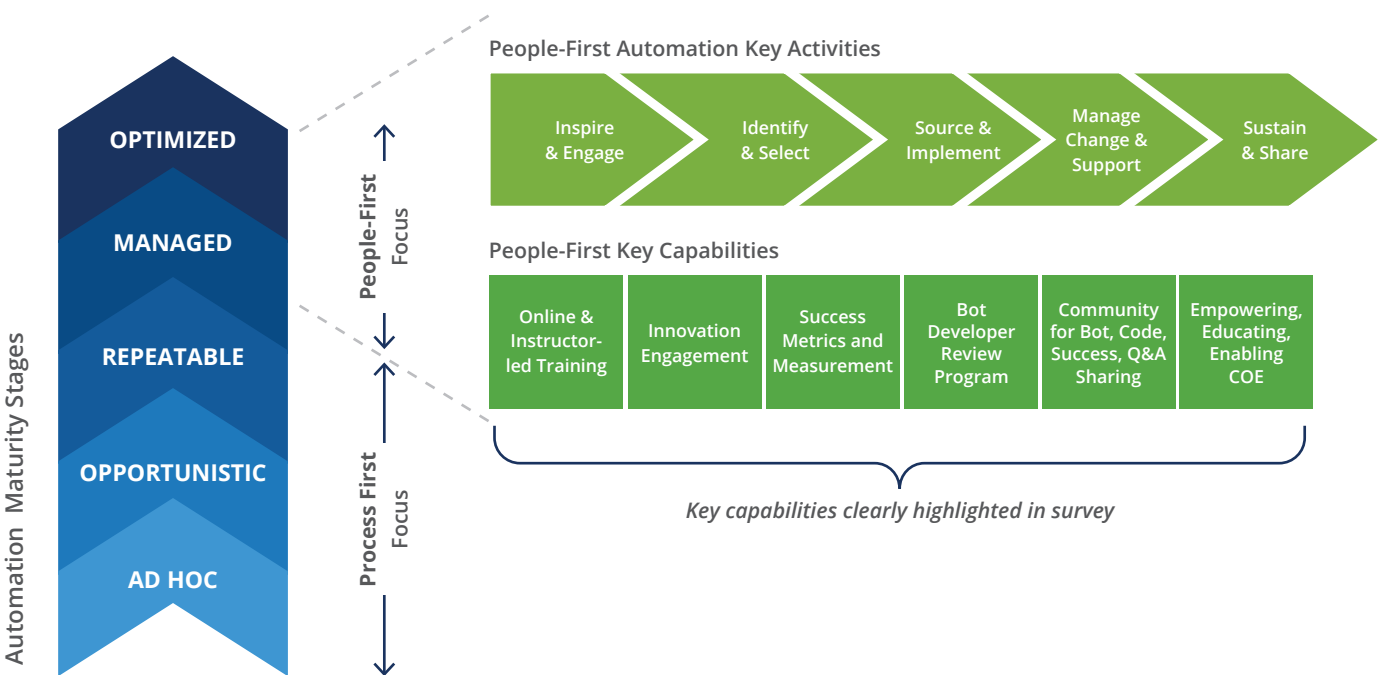
Source: ; IDC, 2020

Analyzing our eight in-depth case studies led us to identify five key stages that organizations work through as they make this people-first shift. Any organization keen to maximize their RPA maturity and embrace the concept of a robot for every worker should use these five stages to create a roadmap:

- **Inspire and engage.** Use innovation tools like hackathons and small-scale workshops to get teams of regular workers fired up about the potential of automation to help them be as productive and effective as they can be.

- **Identify and select.** Create and resource a clear and objective process that helps you filter and prioritize use cases that come from hackathons and workshops. Identify individuals that have the interest and capability to get more directly involved in bot creation as citizen developers.

- **Source and implement.** Work with a range of resources and sources — including core RPA technical talent, vendor and partner experts, and citizen developers — to implement key use cases. Look for ways to help teams reuse ideas, templates, and components, and give credit to those people whose contributions are used.

⦿ **Manage change and support.** Do not be tempted to focus purely on helping teams carry out initial bot implementation. Put systems in place to make sure that teams are supported to meet their business goals with RPA over the long term, from both a technical and business change perspective.

⦿ **Sustain and share.** Find ways to help sustain momentum and inspiration throughout the organization — share stories and successes.
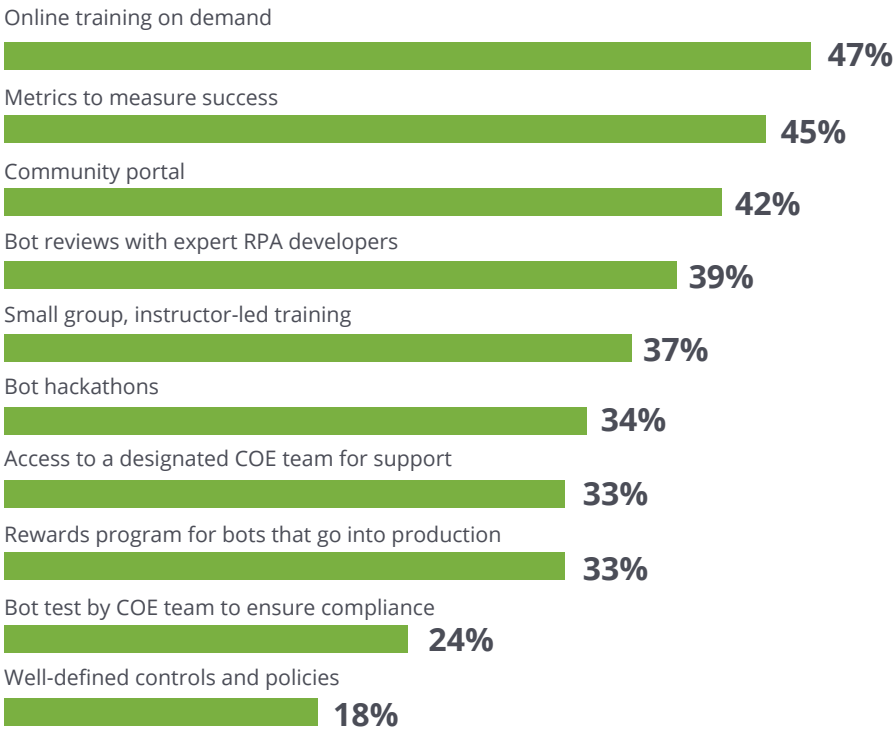
People-First RPA: Key Capabilities

In addition to the five stages that organizations pass through to foster a people-first mindset, our case study research also gave us clear insight into key capabilities that organizations need to progress through these stages (also shown in Figure 6). Importantly, these capabilities were also clearly signposted in our survey. When we asked decision makers experienced in RPA about the capabilities they needed to help them drive participation in their programs, there was a strong correlation between their responses and what we learned from our case study interviews.

Figure 9 shows the common elements of programs that support end-user programs that help them become successful in RPA development.

FIGURE 9

Q. Which capabilities are available to help your staff/teams build their own bots?

Online training on demand
47%

Metrics to measure success
45%

Community portal
42%

Bot reviews with expert RPA developers
39%

Small group, instructor-led training
37%

Bot hackathons
34%

Access to a designated COE team for support
33%

Rewards program for bots that go into production
33%

Bot test by COE team to ensure compliance
24%

Well-defined controls and policies
18%

Source: IDC Robot for Every Worker Survey 2020, N=76

The key people-first RPA program capabilities include:

- **Online and instructor-led training** for teams getting involved in prototyping, design, development, and management of bots. Online training on demand was the most common feature of an end-user program, with 47% of survey respondents offering this. 37% ran small-group, instructor-led training. Training cannot be restricted to technical staff but must be made available to all, and should not be restricted to user training, but also development training.

- **Clear management of success metrics and measurement.** Appropriate success metrics and associated measurement approaches depend on business context. 45% of survey respondents included success metrics in their end-user programs. For some use cases, measuring employee satisfaction and churn might be the best metrics. For others, the best metrics might be more orientated around customer engagement feedback, or even data accuracy. The crucial thing is that metrics need to be driven by business outcomes, and measurements need to be shared widely to learn from successes and failures.

  There are differences in how teams approach metrics. For example, PwC keeps track of every automation put into production, but does not expect workers to make a business case for an automation or individually measure the impact of each of these automations. The team measures on effectiveness, such as the number of bot executions, the number of users engaged, and the activities and KPIs captured. The broad goal is measured in terms of business hours saved. ConocoPhillips, on the other hand, embeds the justification in the automation.

> we build logic into the bot that writes out the time into a database, and then we apply costing numbers to that so we can calculate what the theoretical opportunity cost is that's been saved every time that that automation runs.

Aftab Ahmed, Program Manager, Emerging Digital Technology, ConocoPhillips

- **A bot developer review program** to enable non-technical teams and individuals building bots to get confidence that their bots are good quality, to learn by doing with a safety net, and to help them improve delivery quality over time. 39% of the survey respondents with end-user programs offered bot reviews.

- **A community** for bots, pre-built components, success metrics, and Q&A sharing. A community portal was offered by 42% of survey respondents. Crucial here is the nature of the resource provided. For teams to really progress toward self-sufficiency and help each other, a software publication platform (such as an internal bot store) is not enough by itself. Teams and individuals involved in building bots and delivering RPA-enabled business change must have a place they can go to share questions, answers, and success stories, as well as bots, templates, and technical components.

- **An experienced innovation engagement team** that can build and run hackathons and workshops to drive worker engagement and insight. 37% of RPA decision makers included hackathons in their programs. There is one further critical component that organizations must develop and leverage in specific ways if they want to shift approaches to embrace a people-first mindset. That component is the RPA or automation COE.

> If it's a 10-step process and the end user says, it takes me this amount of time across each of those 10 steps,

In the early stages of RPA maturity, most organizations create COEs — often, once they have one or two projects completed, and start to explore further business demand — to create and enforce controls over bot delivery, vendor and platform usage, and operating models. Effective COEs help to scale initiatives that involve technology-driven business change of all kinds. RPA is often managed from a central COE.

However, whereas COEs typically start out as control authorities, for an organization to make the switch to a people-first RPA mindset, the role of its COE must morph and extend. The COE must continue to play a role in governing aspects of bot delivery and technical architecture and enforcing standards, but it must also take on responsibility to help empower, educate, and enable diverse teams of RPA experts and non-experts through all these stages. In short, COEs have a vital role to play as a delivery vehicle for all the key capabilities we highlight above, working in concert with the business teams driving demand for automation.

Truly Mature RPA Practice Combines Process-First and People-First Approaches

In this paper, we have highlighted the value of extending a process-first RPA mindset with a people-first mindset, and shared the journey involved and the key capabilities you need to build to make that journey. However, there is one more twist in this story: the mindset change from a process-first approach to a people-first approach is not a simple transformation from one approach to the other.

Although a people-first approach to RPA by itself delivers some important advantages over a pure process-first approach — including more use case coverage, greater program scaling, better overall value returned and more effective management of business change — another level of advantage is available to organizations that can bring both approaches together to create a continuous feedback loop (see Figure 10).

FIGURE 10

A Continuous Feedback Loop for Full RPA Maturity
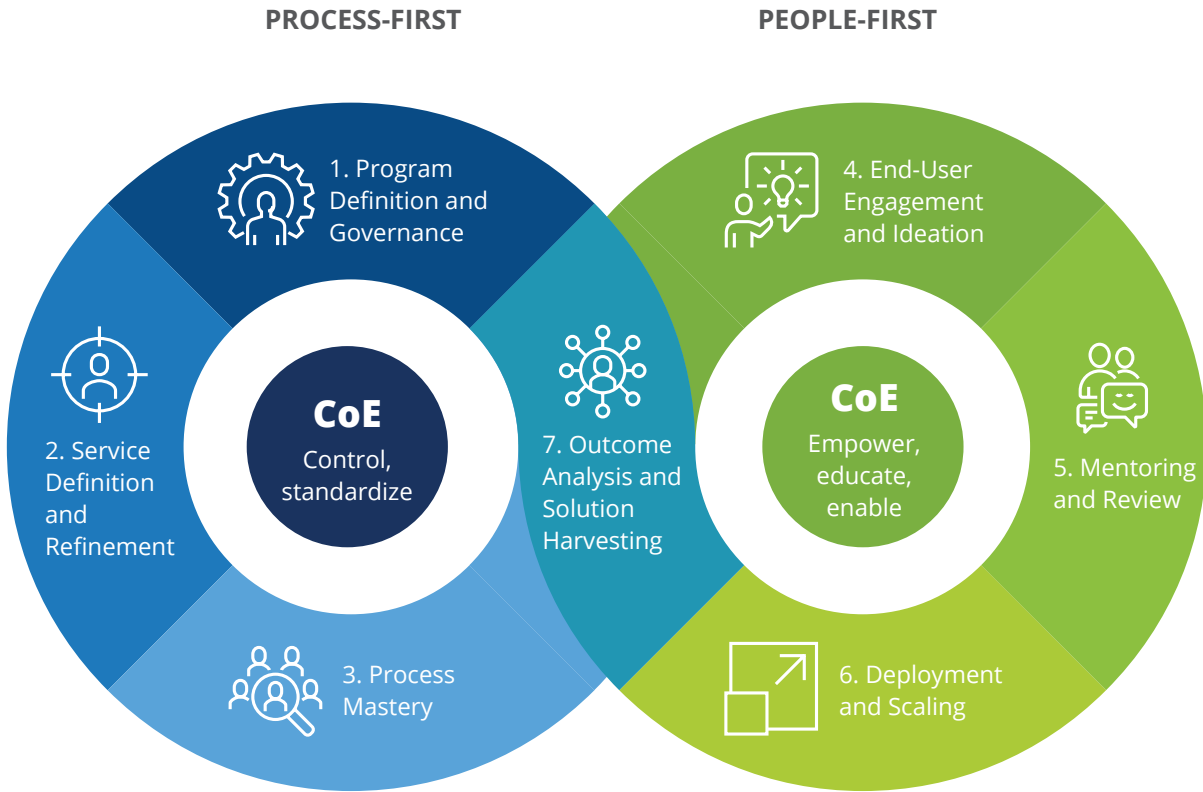
Source: ; IDC, 2020

In the feedback loop shown in figure 10, the first three stages plot out a traditional process-first approach. However, as COEs begin to master top down RPA project execution, stage 4 (end-user engagement and ideation) starts. When people-first engagement and ideation kicks in, teams and individuals get the opportunity to work together to uncover, formalize, and then address their own pain points, and those solutions are implemented, in collaboration with the COE and other specialists, in stages 5 and 6. Crucially, though, there is another stage.

In stage 7, the process of end users working to identify, quantify, prioritize, and implement use cases for automation — however lightweight that process might be — can also provide crucial insights for business leaders identifying larger, more transformational opportunities (so reigniting process-first efforts, again with stage 1). Organizations engaging diverse sets of teams and individuals in automation opportunity identification often find clusters of opportunities that are either similar to each other, or that share features. Analyzing the outputs of this work "in the large" means that COEs can act as a conduit for linking people-first exercises and process-first exercises, finding transformational opportunities from common work and challenge patterns that would have never been discovered with a purely process-first approach.

Getting to Every Worker: Recommendations for RPA Adopters

Build a program that balances control, oversight, and strict metrics with mentoring, support, online training, and hackathons

Assume that all workers will benefit from a robot assistant. It may ultimately be that not all workers will benefit from a robot assistant, but assuming this upfront does not provide the opportunity to see what workers can do with the right tools and help.

Figure 11 compares highly successful end-user programs with those that barely met or did not meet expectations and the most significant program features that are different between the two segments. This shows that programs are more successful when the focus is on becoming successful:
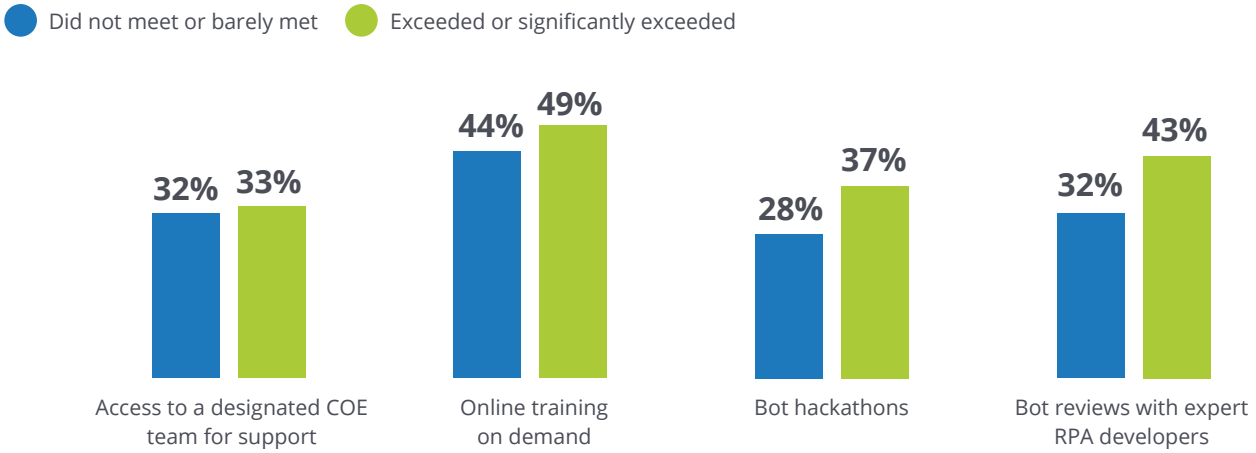
- A review with an experienced RPA developer was the most significant difference we found between the practices of the highly successful RPA COEs, compared with the less successful. Conversely, COEs that are primarily focused on controls and compliance reviews, which was shown earlier in Figure 7, came from the less successful teams.

- Bot hackathons also were used more frequently with the highly successful teams than with the less successful.

This makes sense when asking end users to learn something unfamiliar. Compliance and controls are important but those should be communicated and enforced by embedding automated testing into them. Because mentoring and hackathons are more resource intensive than other aspects of an end-user program, it makes sense to think carefully about how to scale enough capacity to satisfy this function. Building a program in waves, where the pilot group is skilled up enough to serve as a mentor for low- to mid-level difficulty automations in subsequent waves should be considered.

Where business units see significant demand for RPA, they may also want to take proficient end-user developers and assign them to the COE short-term to learn how to conduct hackathons that can be applied across the business unit.

FIGURE 11

Comparison of Most Differentiating Features Between Highly Successful COEs and Less Successful Ones

● Did not meet or barely met   ● Exceeded or significantly exceeded

32% **33%**   **44%** **49%**   **28%** **37%**   **32%** **43%**

Access to a designated COE team for support   Online training on demand   Bot hackathons   Bot reviews with expert RPA developers

Source: ; IDC Robot for Every Worker Survey 2020

Be intentional about identifying and nurturing end users who will form the backbone of the end-user program

An end-user focused developer program is important, but it is only part of what you need for a program that is centered around a broad automation culture. At PwC, for example, at least 18,000 users actively use some element of the shared platform that is part of PwC's end-user self-automation program, but only a fraction of this total (1,000–2,000 employees) have built and submitted automations. Most users are involved in a less hands-on way.

> We saw the emergence of different personas: (1) True citizen developer who is tech savvy, (2) the citizen user who understands the tech and provides ideas and can code a basic bot, (3) level up who is aware but not engaged, (4) digitally unaware.

Kevin Kroen, Partner, Intelligent Automation and Digital Upskilling Leader, PwC

The classification of personas highlighted by PwC here is a useful starting point for teams to understand who can run on their own as a citizen developer, and who is willing but does not have the full set of skills needed to automate a more complicated process. With this classification in mind, you can structure your program to provide the most suitable opportunities and support to everyone.

Neither a technical background nor age is the best way to identify end users willing to learn how to use RPA to improve their jobs. We suggest an approach to identifying candidates for a pilot program that uses some type of survey to find workers who are:

- Happy about the prospect of automating their work
- Absolutely willing to build bots
- Interested in collaborating on automation and sharing results with others

In our survey, 20% of our worker respondents matched these criteria, and note that respondents are in roles that do not require a technical background. In our interviews for this study and in our role as analysts, we've found there is a good pool of workers who are both interested in upskilling themselves to see where this takes them in their career. And they do become successful in RPA development, even if only for themselves.

In the field, we see variations in criteria for deciding who should be involved. For example, at ConocoPhillips, the COE hand-picked the first 100 trainees with help from a range of business groups. When the large Asian communications provider Singtel Group began to plan for a citizen developer program, it first had to evaluate the benefits compared with the overhead costs of training citizen developers to determine whether the five days of automation training required was worth it. Singtel decided to create a hackathon to qualify the program as an investment.

> **"**
>
> Demand for the hackathon was huge. We had 64 people in the pilot who automated 9,000 hours of work between them. The employee who won the hackathon had been there 46 years. The robot solved a problem that drove her nuts every week of her career, and she was thrilled. Singtel is now a believer in a robot for every Singtel employee.
>
> **"**

Chiron Lum
Singtel

Lum pointed out that there were many workers in their 50s and 60s who applied for the hackathon and recommended that age should not be a factor in selecting suitable candidates.

Monitor advances in RPA and related technologies for innovation that makes automation development faster, simpler, and cheaper

RPA platforms are moving into the next generation. One important evolution is leading to greater automation of RPA development. Emerging

techniques that are gaining popularity today include process discovery and recording technology to capture, translate, and import task definitions directly into a development studio where interpreting and implementing recorded actions is automated.

The application of embedded interactivity also offers a means to build small, rapidly callable automations that fluidly complete work in a combination of automated and manual steps. And increasingly, robots will run in the background, working on behalf of each worker. Over the next few years, our thinking about software robots will change. Teams working in organizations with a culture of automation will instead think about a robot as their assistant, keeping track of work, prioritizing tasks, helping automate those tasks, communicating with other workers' robot assistants, and helping with decision making.

Because RPA is innovation driven, it is important to monitor advances to identify key opportunities to simplify development, broaden out what can be automated, and drive down the cost of development. These advances will improve the economics and impact of a robot for every worker.

About the Analysts

Maureen Fleming, Program VP, Worldwide Intelligent Process Automation Market Research and Advisory Service

Maureen Fleming is Program Vice President for IDC's Intelligent Process Automation research. In this role, she focuses on a portfolio of technologies used by enterprises to speed up, drive cost out of, and support a customer-centric approach to business operations. She especially focuses on the convergence of AI, machine learning, and automation and how that combination changes the economics and benefits of process improvement.

With more than 20 years of industry and analyst experience, Maureen has worked at both software startups as well as established enterprise software companies. She began her analyst career at Gartner, where she researched technologies that allowed enterprises to create and adopt information assets, particularly real-time information and the associated enabling technologies.

Maureen began her career in technology as a programmer for the University of Michigan, where she has a General Studies degree with concentrations in computer science, economics, and journalism.

Neil Ward Dutton, VP, AI and Intelligent Process Automation European Practices

Neil Ward-Dutton is vice president, AI and Intelligent Process Automation European Practices at IDC. Prior to joining IDC, Neil was Founder and Research Director of MWD Advisors, a technology advisory firm focusing on digital technologies and their impacts on business. Neil is recognized as one of Europe's most experienced and high-profile technology industry analysts, and has regularly appeared on TV and in print media over his 20-year industry analyst career, as well as authoring over 10 books on IT and business strategy.

Neil initially studied and trained as a software engineer and holds a BSc in Computer Software Technology from the University of Bath. He is also a Fellow of the RSA (Royal Society for Arts, Manufactures and Commerce).

John O'Brien, Research Director, European Intelligent Application Services

John O'Brien is a research director responsible for IDC's European Intelligent Application Services research program. His research focuses on the disruptive challenges and opportunities for application services providers as they pivot to The New, underpinned by exploiting digital technologies, such as artificial intelligence (AI), automation, analytics, and intelligent platforms, to deliver enhanced customer outcomes.

Based in London, John sits in IDC Europe's Accelerated App Delivery (AccAD) practice, where he contributes to a broader research team assessing the paradigm shifts in application delivery, via DevOps, microservices, cloud-based delivery, and low-code/no-code apps, which are rapidly evolving to support enterprises on their journey to become digital-native enterprises. He also collaborates closely with IDC Europe's Artificial Intelligence and Services, Channels, and Alliances programs.

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IDC UK

5th Floor, Ealing Cross,
85 Uxbridge Road
London
W5 5TH, United Kingdom
44.208.987.7100
Twitter: @IDC
idc-community.com
www.idc.com

Global Headquarters:

5 Speen Street Framingham, MA
01701 USA
P.508.872.8200
F.508.935.4015
www.idc.com

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