



The Economic Impact of UiPath Robotic Process Automation: \$55 Billion a Year by 2025

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Executive Summary

The economic benefits expected from the use of robotic process automation (RPA) software by UiPath customers will grow at a blistering pace, from \$7 billion worldwide in 2021 to \$55 billion in 2025. Aggregated from 2021 to 2025, benefits total to \$129 billion.

- ▶ Of the three benefit vectors—increased revenue, decreased expenses, and increased quality—the decreased expense category will be the largest, at 44% of the total. But revenue gains will be larger than expense cuts.
- ▶ The impact of the revenue gains means that job growth from the increased revenue will outpace job losses from expense reduction. IDC’s jobs forecast is provided in a range that varies from a little more than one job gained per one lost to a ratio of four gains to one lost.

- ▶ In the economic impact survey conducted for this assessment, the biggest impact on labor from the adoption of UiPath was slowed hiring due to increased productivity, which was cited by 41% of the 144 respondents. 13% cited employee terminations as an impact, while 30% indicated that business growth offset the need to adjust staffing.
- ▶ 32% of the respondents that adopted UiPath worked for an organization that upskilled workers by offering robotic process automation (RPA) technical training programs; 68% of those programs increased the pay of employees who were successfully upskilled.
- ▶ The ecosystem that supports UiPath implementations with additional hardware, networking, software, services, consulting, and distribution is five times as large as UiPath itself and expected to grow faster. Ecosystem aggregate revenue associated with UiPath is expected to grow from \$5 billion worldwide in 2020 to \$16.5 billion in 2025. Aggregated from 2021 to 2025, benefits total \$51 billion. Half the ecosystem revenue opportunity will come from IT and business services associated with UiPath implementations.
- ▶ IDC's model shows that more than 12 million workers worldwide interfaced in some way with RPA software in 2020, and IDC estimates that number will grow to 35 million by 2025. As more RPA training programs come online, salary growth of upskilled workers is likely to continue.
- ▶ The rapid growth represents the foremost challenge for RPA software vendors and users and, in turn, will put pressure on vendors to support both users and their partners.

IN THIS WHITE PAPER

This white paper forecasts the economic contribution of UiPath and its ecosystem of partners and customers to global economies, measured by business revenue, expense reduction, and jobs created.

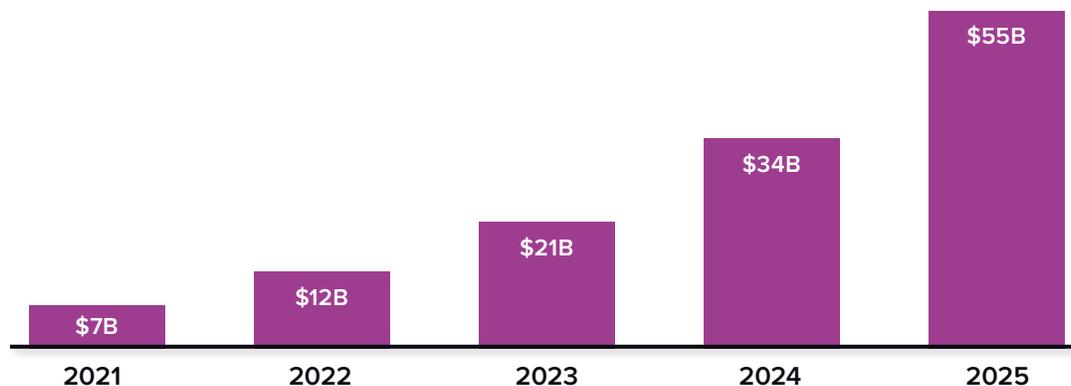
The forecast model includes aggregate estimates of the increases in revenue and cuts to expenses made possible by the adoption of UiPath's RPA software platform. The model includes estimates of the worldwide total number of candidates available to benefit from RPA and the size of the ecosystem supporting UiPath implementations.

The analysis is informed by ongoing IDC market forecasts for RPA software, third-party data on the labor force by region, past IDC research sizing the worldwide white-collar workforce, and the revenue and expense departmental footprints within enterprises. It is also informed by a survey of 518 enterprises deploying RPA, including 205 UiPath customers.

The Economic Impact of Robotic Process Automation

The economic benefits of adopting UiPath software for RPA will grow from \$7 billion in 2021 to \$55 billion by 2025, at a compound annual growth rate (CAGR) of 67% (see **Figure 1**). The cumulative impact is \$129 billion over the five years ending in 2025. While the \$129 billion seems like a large number, it is a little more than twice the spending on software, services, hardware, and networking to make RPA work. On top of that will be internal spending on IT staff, organizational disruption, legal and human resource expenses, and both higher salaries for upskilled employees and perhaps severance costs for employees let go.

FIGURE 1
The \$55 Billion Economic Impact of UiPath
 (Worldwide annual economic impact of UiPath RPA in \$)



Source: IDC In-depth Interviews, 2021

Note that the impacts depicted by the columns are the benefits from RPA investments tied to that year. But those benefits compound over time. A process improvement made in, say, 2021 that improves customer retention and hence revenue is still in place in subsequent years—with the level of improvement not falling back.

The biggest single component of that aggregate \$129 billion is expense reduction, which is not surprising. RPA is typically used to speed up processes and decisions and improve productivity, which lowers expenses per unit of output. Lowered expenses may mean cuts in labor, but these cuts are not as significant as other areas of savings. **Figure 2** shows the makeup of the 2025 economic benefit.

FIGURE 2

The Components of the UiPath Economic Benefit, 2025

(Composition of accumulated UiPath RPA benefits by 2025)



n = 518, Source: IDC's RPA Economic Impact Survey, 2021

Some points to consider about the three components in Figure 2 are as follows:

- ▶ Revenue improvement is generally tied to faster processing times and higher-quality customer experiences that result in higher renewal rates, faster customer acquisition, or higher booking values.
- ▶ While increasing labor productivity is a major component of expense reduction, it is not the only one. Faster inventory turns, more efficient purchasing of cost of goods sold, less downtime or inventory losses, and even better IT security can also lower expenses.

- ▶ Increased quality that leads to higher brand equity is real, but quite diffuse with a long lead time to increase a company's valuation—hence its smaller impact.
- ▶ IDC expects a majority of the benefits to come from RPA implementations in sales and back-office business operations.

These benefits were quantified in the model using survey data on expected benefits by job function, macroeconomic data on GDP and gross output, and IDC estimates of labor force, not just by enterprise department but by job functions within department (see [Appendix](#)). The survey asked who was using or being impacted by RPA and the expected improvements in the three impact areas across five departments.

The high share of benefits accruing to sales and back-office operations makes some sense. Sales departments touch most of the revenue flow for enterprises, and operations departments account for most of the costs. Marketing, because it also touches customers, has a higher percentage of benefits than its share of expenses in most companies.

A description of the modeling exercise and the scope of the survey can be found in the Methodology section.



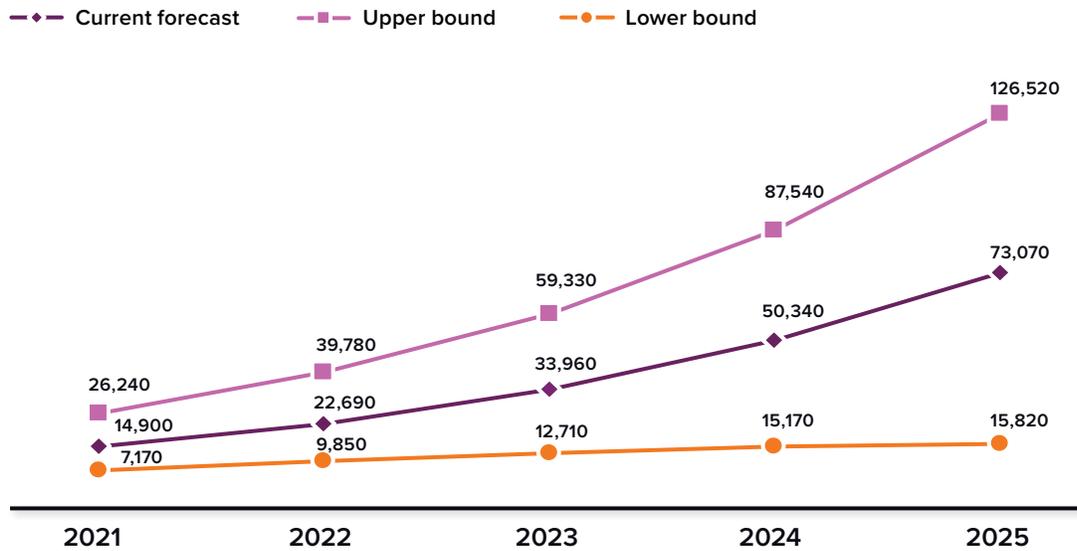
The Impact of Robotic Process Automation on Labor

An economic impact assessment of UiPath is incomplete without understanding the question of how the adoption of RPA impacts labor. IDC has developed a view of the impact of RPA on jobs using the information from the survey and its macroeconomic models to come up with at least a qualified forecast of net jobs creation from the use of UiPath.

The impact of adoption of UiPath on jobs is shown in **Figure 3** (next page), but it is presented as a probability and includes an upper and lower bound. Currently, IDC estimates that two jobs are gained for every job lost to RPA. But that ratio could well change over time based on how RPA advances. While RPA is technology that automates manual work, economic growth creates new jobs.

For enterprises achieving success with RPA, job growth is likely to be more modest than for enterprises that have not adopted RPA. It is also likely that jobs will be lost or that net-new employee hiring will advance more slowly in departments where RPA is deployed. Jobs gained are likely in new value-added areas and wherever enterprises need employees to support new initiatives that create revenue growth.

FIGURE 3
The Impact of UiPath on Jobs, 2021–2025
 (Potential number of net job gains from use of UiPath RPA)



Source: IDC In-depth Interviews, 2021

Yet despite job growth data, [recent press headlines](#) have been somewhat alarming. How much of a job killer is RPA?

To find out, IDC asked that question directly—and indirectly—in the survey. For instance, when IDC asked RPA users how they rated the importance to their organizations of various motivations for using RPA, cutting labor or delaying hiring was not as highly rated as other motivations.

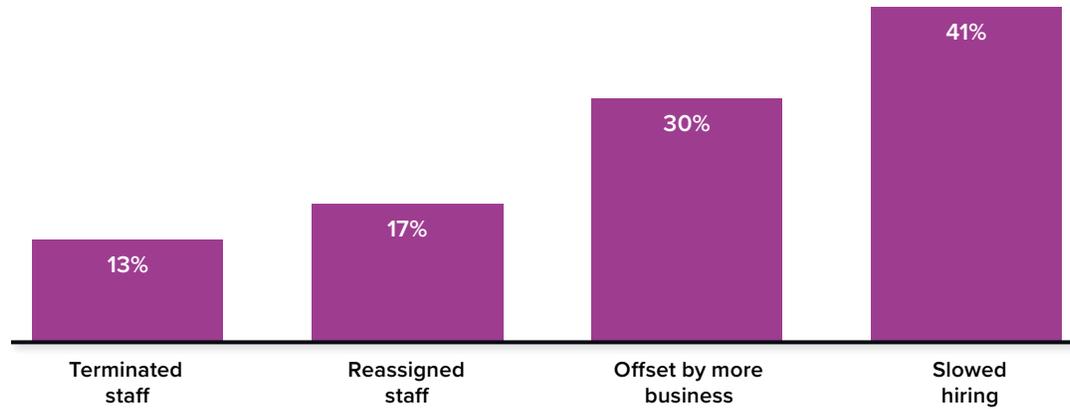
In another question, IDC asked which of the three major benefits of RPA—improving revenue, cutting expense, or improving quality—was the most important. Gaining revenue was ranked “most important” by 50% of respondents, while “reducing expenses” won the ranking for “least important” by almost the same percentage of respondents.

So, yes, the use of software robots will eliminate some positions. But not, in IDC’s analysis, as many as they create. For instance, while three-quarters of UiPath respondents said the deployment of RPA reduced the need for labor, only 13% said the use of RPA resulted in actual job cuts. And more than twice as many said the use of RPA increased business enough to avoid job cuts. That said, 41% of the respondents said they were able to slow hiring because of gains in productivity from the adoption of RPA (see **Figure 4**, next page).

FIGURE 4

The Impact of UiPath Adoption on Labor

(% of respondents)



n = 144, Source: IDC's RPA Economic Impact Survey, 2021

In fact, in a series of statements about the impact of RPA on labor, 30% of UiPath respondents gave the following statement a 9 or 10 out of 10 when asked to rate their agreement on a scale of 1–10:

The net gain from RPA in improving revenue and profits is greater than the reduction of labor costs.

No other statement was rated as high.

However, even with this field research and the advantage of the economic impact model and IDC's background forecasts, extending a financial benefit that includes both revenue gains and expense cuts as well as job gains and losses is not straightforward. For example:

- ▶ Technology, such as AI paired with RPA, may change the calculus on the impact on jobs as the years roll by.
- ▶ As more professional services firms develop RPA practices, enterprises may outsource more to improve labor efficiency. By contrast, it is also increasingly likely that with greater labor efficiency, it may be more cost effective to bring outsourced processes back into the enterprise, especially with the added benefit of greater control over the newly insourced process.
- ▶ On the other hand, compounding revenue gains and migration into new markets with the help of RPA might spur a jump in hiring.



Robotic Process Automation Upskilling

For the jobs that are created, RPA can improve employee skill levels and job satisfaction.

Of the UiPath survey respondents:

- ▶ **50% of new labor added** came from new hires, and 50% from “upskilled” workers.
- ▶ **57% of “upskilled” workers** had higher roles in their enterprises than before.
- ▶ **68% of “upskilled” workers** had higher salaries than before.
 - Of the 32% of respondents working for an organization that adopted UiPath and upskilled workers by offering an RPA technical training program, 28% said their organization increased pay by more than 20%, 40% said their organization increased pay from 10% to 20%, and 28% said their organization did not increase pay. The remaining 4% of respondents did not focus on upskilling in their RPA training program.
- ▶ **22% and 25% of survey respondents**, respectively, rated their agreement with the following statements as 9 or 10 on a scale of 1–10:
 - RPA improves employee satisfaction by eliminating boring tasks.
 - RPA improves employee satisfaction by giving employees more control and flexibility over how they fulfill their job roles.

We should point out that in this pandemic to post-pandemic period, there are other pressures on enterprises that may change the employment picture. The job growth pictured here from the use of RPA may be countered (or augmented) by these other pressures.



The Delivery System: The UiPath Ecosystem

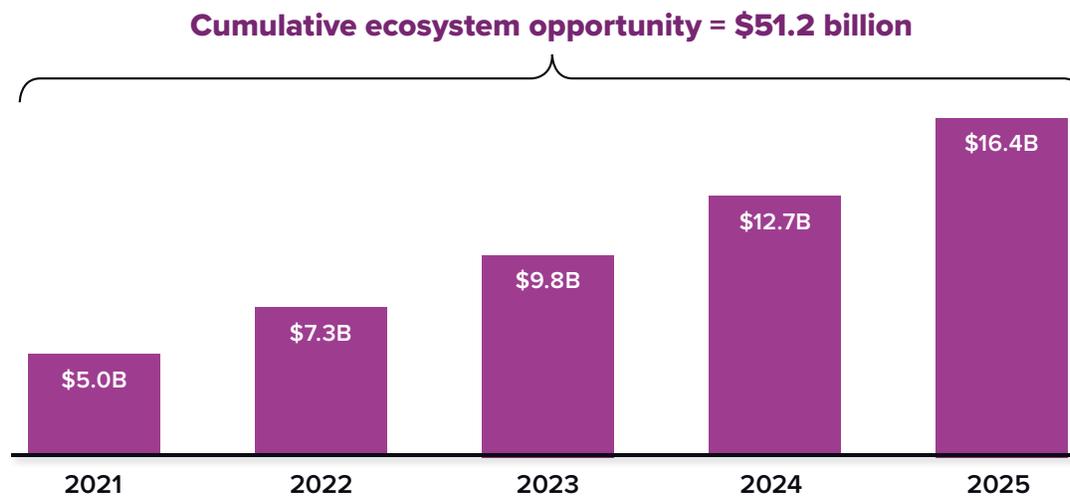
The benefits that come to UiPath customers are delivered not just by UiPath but by an ecosystem of partners that add additional products and services to foster skills development and to support the deployment of RPA in customer organizations. Additions to support RPA can be as basic as network connections or cloud storage or as complex as strategic business consulting, human resource organizational assessments, or support for setting up RPA centers of excellence.

In fact, IDC sizes this ecosystem at five times the size of UiPath in 2020 and nearly seven times in 2025. The cumulative ecosystem opportunity from 2021 to 2025 will be \$51.2 billion (see Figure 5).

FIGURE 5

The UiPath Ecosystem Opportunity (\$B)

(UiPath ecosystem opportunity in \$)



Source: IDC In-depth Interviews, 2021

These add-on products will include:

- ▶ Add-on software, such as human resources and customer service applications; infrastructure software like security software and operating systems; and application development tools
- ▶ Add-on hardware, from upgraded client devices to some portion of enterprise servers and storage, and networking for cloud access, customer communications, and websites
- ▶ IT services, from systems integration and custom application development to training and end-user support
- ▶ Business services to support organizational changes, functional training, and client interfacing strategies
- ▶ Resale margins from resale of UiPath services as well as other ecosystem members

Figure 6 (next page) shows how these add-on products and services roll up into major categories.

FIGURE 6**UiPath Ecosystem Revenue Opportunity by Category**

(Impact of RPA on professional services business opportunity in % agreeing 9-10 out of 10)



Source: IDC In-depth Interviews, 2021

Note that the revenue shown in **Figure 6** will also create jobs in the economy, most of which will be skilled jobs, and more than half with IT skills specifically. IDC estimates that UiPath and its ecosystem employed more than 15,000 workers in 2020 and will employ more than 40,000 by the end of 2025.



Robotic Process Automation and Professional Services

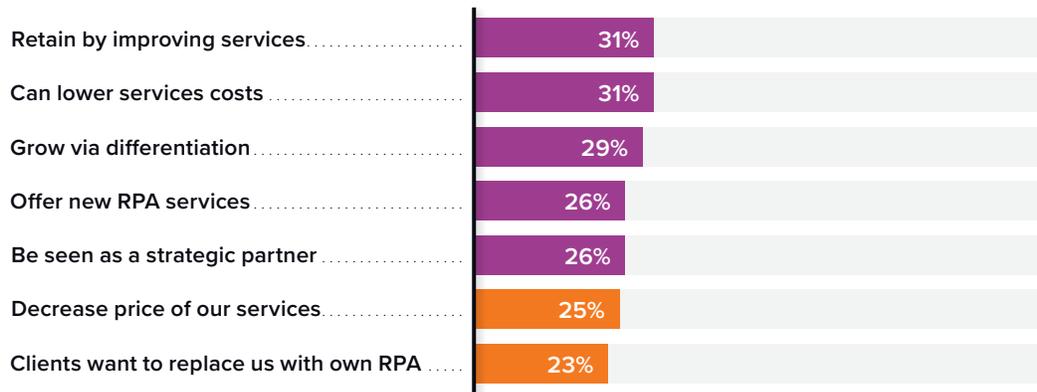
By design, the IDC survey respondent pool included more than 130 professional services firms, from providers of IT services (e.g., data processing, systems integration, and application development) to providers of services for business functions (e.g., legal, accounting, marketing, advertising, human resources, engineering, and scientific research), or a combination of various IT and business services. These companies offer “products” based on employee labor, knowledge, and skills and play a uniquely dual role as both consumers and suppliers of RPA.

Across these firms polled, on average:

- ▶ **38% of their time** was dedicated to support RPA services for their clients (versus internally in support of their own businesses).
- ▶ **39% had a specific RPA practice**, and another 14% expect to have one within one year.

IDC asked professional services respondents that indicated spending a quarter or more of their time on RPA services for clients to rate their agreement with a series of statements around RPA's impact on their business opportunity (see **Figure 7**).

FIGURE 7
RPA and Its Impact on Professional Services Business Opportunity
 (% of respondent agreeing 9 or 10 out of 10)



n = 95

Base = respondents who indicated that 25%+ of their time was spent in support of RPA services for clients

Note: Scores are based on a scale of 1–10, where 1 = strongly disagree and 10 = strongly agree; figure shows scores of 9 and 10 only.

Source: IDC's *RPA Economic Impact Survey*, 2021

While existing clients may be savvy enough to expect their professional services provider to pass on RPA-driven cost savings in the form of price decreases, only a low percentage of respondents agreed strongly with the idea that clients would substitute their services with RPA.

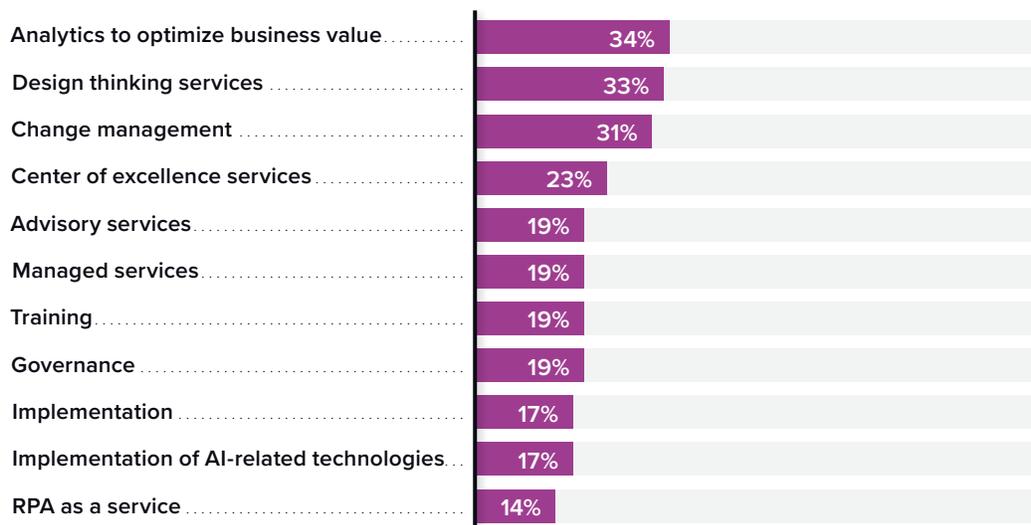
Professional services firms more often believe RPA will:

- ▶ Help them retain customers
- ▶ Attract new business by using RPA to differentiate from competitors
- ▶ Offer new, higher-value services that were not possible without RPA
- ▶ Become a strategic partner for clients' RPA adoption

There are challenges, of course, in transitioning to RPA-enabled service delivery models. Professional services respondents indicated their top 3 challenges are, in order, investing in data and technology capabilities to support RPA, training clients on using RPA, and aligning clients' IT and business organizations. However, once armed with RPA, professional services firms see a broad range of potential new services they can offer to clients (see **Figure 8**).

FIGURE 8
Services by RPA-Equipped Firms

(% new, higher-value services offered to RPA clients)



n = 95
 Base = respondents who indicated their organizations can offer new, higher-value services that were not possible without RPA
 Source: IDC's RPA Economic Impact Survey, 2021

RPA opens doors for professional services firms to offer more business-oriented services that provide strategic value to clients.

Such as deeper insight into operational KPIs, innovation around new RPA use cases and ways of working, and the complex impact that RPA adoption has on organizations—all of which ultimately enable customers to be more successful with RPA and drive more adoption of the technology across their businesses.



Robotic Process Automation Software Market Trends

RPA software grew rapidly from 2016 to 2020 to \$1.7 billion worldwide, at a CAGR of 70%. IDC's RPA software forecast will see fast growth continuing. **Figure 9** shows that by 2025, RPA will grow at a 39% CAGR to \$9.0 billion worldwide.

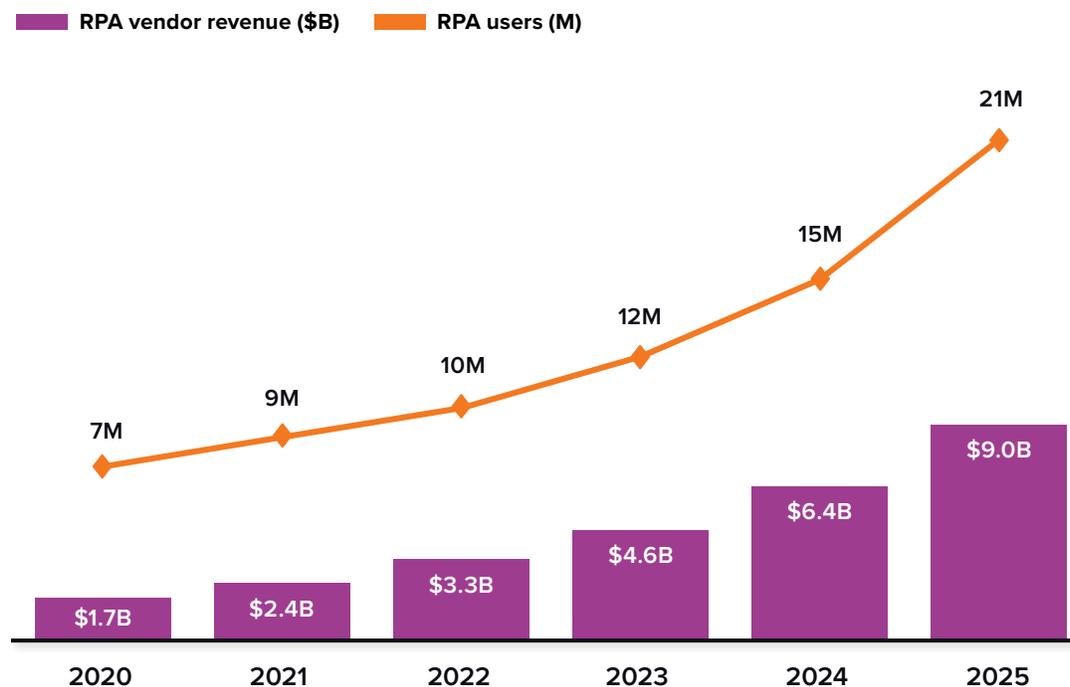
Part of the fast growth over the forecast period is from the number of vendors entering the market, but technology trends factor in even more heavily as more workers benefit from RPA. The recent introduction of robot assistants will make it possible to shift from a fully manual task to a semiautomated one where work is exchanged between workers and their robot assistants, which will grow the number of employees impacted by the use of RPA.

In 2020, roughly 7 million end users were impacted by RPA. In 2025, that will grow to 21 million end users.

FIGURE 9

Forecast Growth of RPA Users and Spending on RPA Software, 2020–2025

(Worldwide RPA users and vendor revenue in \$)



Source: IDC In-depth Interviews, 2021

Widespread use of AI to broaden tasks available for automation will also broaden usage. Through AI and supporting technologies, RPA will increasingly shift from scripting-based approaches to auto-generation of task automation. That means end users will more easily be able to build their own personal productivity improvements.

Since RPA is such a new technology, this means it is not even to the “knee of the curve” of adoption, and this growth could keep up this pace for years.

RPA has not been without challenges. Management expectations for a future workforce augmented by RPA are often mismatched with its existing skills and culture. Suppliers and customers both will focus on searching for talent, dealing with corporate reorganizations, instituting training programs across all sorts of job functions, and dealing with the myriad applications and processes that already support the workforce. There may also be resistance within organizations if employees see RPA as a threat.

It also may not be that the biggest financial gains will come in departments that are already entrenched in processes that have served them well over the years. RPA is evolving to assist all workers to help them do their jobs and, over the next five years, could reasonably evolve to become broadly used across the enterprise.

To gain the full benefit of RPA, planning and skills acquisition are required. Beyond the early proof-of-concept stage, jumping into multiple, uncoordinated use cases without appropriately defining the business goals for RPA or considering the impacts on various stakeholders is often at the root of downstream challenges with data quality, process workflows, IT governance, and employee change management. And the ROI can be hampered because enterprises fail to create a shared service orientation, with too little leverage and not enough reusability.

KEY CHALLENGES

- ▶ The rapid growth represents the foremost challenge for RPA vendors and users and, in turn, will put pressure on vendors to support both users and their partners.
- ▶ Part of the challenge is the ongoing cultural change represented by the adoption of automation to replace manual, repetitive work. Over the next five years, newer capabilities will create new addressable automation opportunities. This can be culturally disruptive and can pose problems managing what is essentially a workforce of people and machines, who will also increasingly collaborate to accomplish work.

Methodology

To answer the question of RPA's and UiPath's economic impact, IDC conducted both a modeling exercise and a survey of RPA users at 518 medium-sized and large enterprises across five countries with the intent of understanding:

- ▶ **The footprint of RPA in enterprises:** Where is it deployed and to what extent by department?
- ▶ **The impact of RPA on the workforce:** Does it create jobs or eliminate them or both?
- ▶ **The overall economic impact of RPA and, specifically, growth provided by UiPath:** UiPath accounted for 32% of the revenue generated by RPA software in 2020, according to IDC's Worldwide Software Tracker. This is greater than any other vendor and represented growth 30% faster than the market itself.

The metrics IDC used to measure economic impact consisted of:

- ▶ Increase in revenue from the use of RPA
- ▶ Reduction in expenses from the use of RPA
- ▶ Increase in the quality of the customers' experience from the use of RPA that affects company valuation (The dollar impacts of these economic impacts were then used to estimate jobs created and lost.)

IDC has used its extensive research and forecast base along with surveys to calculate and forecast the impact various vendors have on local economies.

There are other flavors of these studies, but this document includes the following two variations of impact:

- ▶ **Economic impact from the use of the vendor's technology:** For example, business revenue or expense reductions created by vendor products interacting with various business functions.
- ▶ **Vendor ecosystem sizing:** How big, in terms of revenue and/or employment, the ecosystem supporting the vendor's products is?



Economic Impact of UiPath Robotic Process Automation Modeling Inputs

This exercise had multiple components and information sources, including:

- ▶ Public information about UiPath revenue, which was also used as input to develop a revenue forecast for UiPath.
- ▶ IDC Software Tracker forecasts for RPA and related software out to 2025. These forecasts were used as inputs to the Economic Impact Model as well as for UiPath revenue out to 2025.
- ▶ U.S. Bureau of Labor Statistics (BLS) job forecasts across 800 occupations and U.S. Bureau of Economic Analysis gross output forecasts by industry.
- ▶ Economist Intelligence Unit (EIU) forecasts of labor force by country and region, GDP (by sector), and disposable income per worker.
- ▶ Previous unpublished IDC research on white-collar workers with structured tasks by country (which was used to validate the extrapolation of RPA candidates to regions).

The BLS and EIU data were used to determine which workers in emerging and developed regions would be candidates for RPA, which workers had access to computer technology, and which workers, might, in fact use it. IDC IT spending data compared with GDP and populations helped narrow down workforce candidates to those with technology, and IDC RPA forecasts by region compared with overall application software were used to estimate and forecast total RPA usage and was validated by survey results.

The RPA footprint in the model used past IDC models to develop an idea of the footprint of job functions within organizations in terms of share of revenue driven and of expenses incurred. The use of RPA by job functions and the revenue/expense/improvements by functions were taken from the survey and inserted into the model. **Table 1** (next page) shows the job functions addressed.

TABLE 1
Job Functions Surveyed

Sales	Marketing	Operations	Admin	Development
Direct sales	Campaign management	Front line production	Finance	R&D labs
Indirect sales	Content creation	Quality assurance	Personnel	Product design
Sales forecasting	Product marketing	Customer support	Management	Product testing
Telesales	Brand marketing	Facility management	IT	Product management
Other	Other	Other	Other	Other

Source: IDC In-depth Interviews, 2021



The UiPath Ecosystem Model

This component of the model takes UiPath revenue by region and applies multipliers for it based on IDC market studies. These are confirmed by survey questions.

IDC market studies show relationships between hardware and software, between IT and business services and software, between various types of software to each other, between network costs to software, and the percentage of ecosystem products and services that are resold. To eliminate double counting on resold items, IDC only utilized gross margin, which adds to vendor revenue on resold product to get to end-user spending. Gross margin percentage comes from IDC partner surveys.



The UiPath Survey

This was an internet-based survey of RPA users identified by IDC with a quota of 25% UiPath respondents. The sample was obtained from the following countries: Germany (100), India (109), Japan (100), the United Kingdom (108), and the United States (101). The industry and size-class mixes were representative of software spending, except that there was a quota of 25% of respondents in IT or professional services, and enterprises with at least 500 employees. The survey was conducted in first-quarter 2021.

Conclusion

This assessment shows a worldwide economic benefit of \$55 billion in 2025 from the use of UiPath for RPA. Cumulatively, over the five years ending 2025, the economic impact will reach \$129 billion.

For enterprises adopting RPA, benefits included reduced expenses (44% of respondents), revenue growth (41%), and improvements in quality (15%).

The adoption of RPA does impact labor, but in our survey, only 13% of respondents adopting UiPath terminated employees following adoption of RPA. Gains in labor productivity were demonstrated from the adoption of RPA because 41% of the respondents adopting UiPath slowed hiring, 30% of the respondents offset job losses due to business growth, and 17% reassigned staff.

As the economy grows, our conservative forecast for this assessment indicates that, for one job lost through the use of RPA, one job is gained. Optimistically, one job loss gains four additional jobs. We also found that 57% of workers who were upskilled had higher-level roles in their enterprise than before.

While only 32% of respondents worked in an organization that adopted UiPath and implemented programs to teach line-of-business workers how to build RPA capabilities, 40% of those workers upskilled saw their pay increase from 10% to 20%, while 28% saw their pay increase by more than 20%.

The UiPath ecosystem represents a substantial portion of the economic impact. By 2025, the ecosystem will reach \$16 billion in annual revenue. In the five-year period ending 2025, the cumulative ecosystem opportunity will reach \$51 billion. The biggest area of opportunity across the ecosystem is business services, accounting for 30% of the opportunity, followed by add-on software (28%), IT services (21%), hardware and networking (12%), and resale gross margin (9%).

IDC research shows that investing in RPA and deploying it in an employee-centric manner can easily cover the cost of the technology. And even with the economic benefits outweighing the cost of software, there are still unquantified costs in reorganization, internal training, hiring, and pay increases. There is a lot to juggle, but strong benefits accrue for those who become good at adopting RPA.

Appendix

Table 2 shows the economic impact of UiPath RPA worldwide and in developed and emerging countries.

TABLE 2
The Economic Impact of UiPath RPA Details

	2021	2022	2023	2024	2025
Worldwide					
Total annual economic benefit (\$B)	\$7	\$12	\$21	\$34	\$55
Revenue enhancement	\$3	\$5	\$8	\$14	\$22
Expense reduction	\$3	\$6	\$9	\$15	\$24
Quality benefits	\$1	\$2	\$3	\$5	\$8
Ecosystem opportunity					
Revenue (\$B)	\$5	\$7	\$10	\$13	\$16
Revenue ratio to UiPath	5.7	6.3	6.5	6.7	6.9
Impact on jobs in the client base					
Net gain upper bound	26,240	39,780	59,330	87,540	126,520
Ratio of jobs created to jobs lost	4.1	4.1	4.1	4.1	4.2
Net gain probable	14,900	22,690	33,960	50,340	73,070
Ratio of jobs created to jobs lost	2.0	2.0	2.0	2.1	2.1
Net gain lower bound	7,170	9,850	12,710	15,170	15,820
Ratio of jobs created to jobs lost	1.4	1.3	1.3	1.2	1.2

Source: IDC In-depth Interviews, 2021

[continued next page...](#)

	2021	2022	2023	2024	2025
Developed countries*					
Total annual economic benefit (\$B)	\$5	\$13	\$21	\$35	\$58
Revenue enhancement	\$2.0	\$3.5	\$5.7	\$9.3	\$14.7
Expense reduction	\$2.2	\$3.7	\$6.1	\$9.9	\$15.5
Quality benefits	\$0.6	\$1.1	\$1.8	\$2.9	\$4.6
Ecosystem opportunity					
Revenue (\$B)	\$4	\$5	\$7	\$10	\$12
Revenue ratio to UiPath	5.4	5.9	6.2	6.3	6.6
Impact on jobs in the client base					
Net gain upper bound	9,730	14,780	21,490	30,860	42,680
Ratio of jobs created to jobs lost	3.8	3.9	3.9	3.9	3.9
Net gain probable	5,600	8,540	12,460	17,960	24,930
Ratio of jobs created to jobs lost	2.0	2.0	2.0	2.0	2.0
Net gain lower bound	2,530	3,440	4,220	4,630	4,070
Ratio of jobs created to jobs lost	1.3	1.3	1.2	1.2	1.1
Emerging countries**					
Total annual economic benefit (\$B)	\$2	\$4	\$7	\$12	\$20
Revenue enhancement	\$1	\$2	\$3	\$5	\$8
Expense reduction	\$1	\$2	\$3	\$5	\$9
Quality benefits	\$0	\$1	\$1	\$2	\$3
Ecosystem opportunity					
Revenue (\$B)	\$1	\$2	\$3	\$3	\$4
Revenue ratio to UiPath	7.1	7.6	7.8	7.8	8.0
Impact on jobs in the client base					
Net gain upper bound	16,510	25,000	37,840	56,680	83,840
Ratio of jobs created to jobs lost	4.2	4.2	4.3	4.3	4.3
Net gain probable	9,300	14,150	21,500	32,380	48,140
Ratio of jobs created to jobs lost	2.1	2.1	2.1	2.1	2.1
Net gain lower bound	4,640	6,410	8,490	10,540	11,750
Ratio of jobs created to jobs lost	1.4	1.4	1.3	1.3	1.2

* Indicates the United States, Canada, Europe, and Japan

** Indicates all other regions

Source: IDC In-depth Interviews, 2021



The Potential Reach of Robotic Process Automation

RPA software is used to eliminate or reduce repetitive tasks performed by workers, typically working in an office setting but not always. RPA software platforms include core task automation software and also use AI, APIs, and an increasing range of technologies to broaden out the number of repetitive tasks available to be automated. Today, these tasks can range from scanning and sorting emails to interfacing with customers using software bots to track customer orders, automate credit card cancellations, perform data entry of expenses, and process expense claims.

Think about it. Across a global workforce of 3.4 billion workers, there must be many billions of repetitive tasks that could be automated.

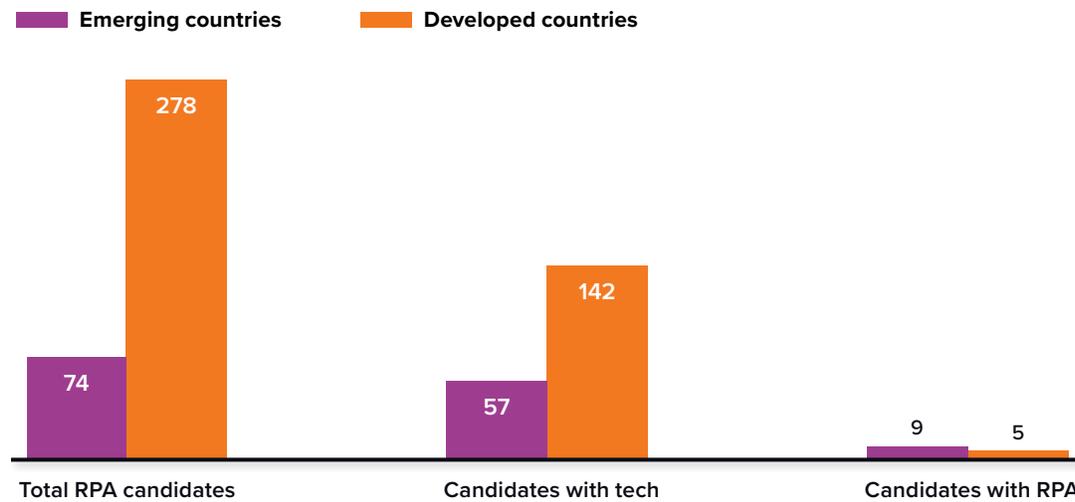
IDC sizes the total number of candidates at more than 350 million workers worldwide, as shown in **Figure 10** (next page), which also compares workers in developed and emerging countries. These are primarily office workers and some production workers. Nearly 200 million of the 350 million workers have the technology required to support RPA. Of that, only 9 million currently are impacted or supported by RPA.

IDC's candidate models are based on government statistics on the size and occupational makeup of the global labor force as well as past IDC work sizing the global white-collar workforce and the subset working in structured tasks, along with IDC's data on IT penetration by country.

This was an internal exercise in support of a custom project that sized the total white-collar workforce by country and the subset working on structured tasks. The study was first conducted in 2007 and has been updated every several years.

This model shows current penetration of 15.8% of workers impacted by RPA in developed countries with available technology and 4.2% penetration in emerging countries.

FIGURE 10
The Many Millions of RPA Candidates and the Few Yet Using It
 (Worldwide RPA candidate number in millions)



Note: Developed countries include the United States, Canada, Europe, and Japan. Emerging countries include all other regions.
 Source: IDC In-depth Interviews, 2021

As shown previously, the biggest impediment to adoption is basic access to technology, especially in emerging markets. There are, after all, many enterprises, mostly small, that have no servers or PCs for workers. There are smartphones galore, but small enough mobile software or cloud services suitable for interacting between RPA and phones is not yet available even in developed countries.

Today, only 9% of RPA software is delivered as a cloud service, and IDC forecasts that, by 2025, that will still be less than 45%.

About the Analysts



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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.

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As Senior Vice President of IDC, John Gantz has responsibility for IDC's worldwide demand-side research, global market models, and research quality control and standards. He is also a member of IDC's management committee, chief architect of IDC's Worldwide Digital Marketplace Model (formerly the Worldwide Internet Commerce Market Model, TM,) IT Economic Impact Model, and PC Software Piracy research. He is one of IDC's chief spokespersons on broad technology and market issues at major forums in the United States and around the world.

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