Automation and AI Trends 2024:

Seven trends defining how two transformative technologies will deliver value in the coming year.

Welcome to UiPath Automation and AI Trends 2024

What you need to know and do to capture even more value from these two transformative technologies.

This e-book lays out the biggest trends shaping the future of automation and AI. Our purpose is not just to keep you on top of what's happening—it's also to help you make the most of the opportunities out there.

As both a market share and a technology leader in the enterprise automation market[1]—with more than 10,000 customers and a global network of thousands of partners and millions of UiPath Community members—we believe we're in a unique position to hear what the market is saying. That's why, in addition to extensive analysis of third-party research, we've also drawn on our collective real-world understanding of the global automation and technology markets.

So, what's the word from the market? We have to say that we're excited by what we've been hearing. Because right now, our customers and prospects appear to be far more intent on striding forward to seize new AI-engendered opportunities than on looking backward to address post-pandemic issues like inflation, employment gaps, and supply chain disruptions. Yes, they see a lot of change and uncertainty coming at them—but they also see new chances to grow, adapt, and leverage disruption. And that's a good thing, indeed.

What's in store for '24?

This year, automation and AI bring out the best in each other to create new value for enterprises everywhere.

Big market uptake of high-value AI use cases. Truly transformed ways to operate and manage complex businesses. Big AI-powered advances in enterprise automation that deliver big value, fast. And robots that are ready to take on new roles both on the desktop and behind the scenes. Those are just some of the things the coming year will bring, as automation and AI really get down to work.

UiPath Automation and AI Trends 2024

1 **The C-suite seizes AI's value—with automation's help.** This is the year that enterprises make real progress in turning AI's promise into actual performance—with a big boost from enterprise automation.

2 **Select AI + automation use cases get hot, hot, hot.** Enterprises that want to capture AI value fast (and who doesn't?) turn to packaged solutions like IDP and communications mining to deliver near-in results.

3 **The transparent organization comes into focus—end-to-end.** AI-powered capabilities built around process mining and task mining create continuous visibility and improvement for organizations' inner workings. It's a whole new ballgame for operations.

4 **LLMs power virtual BFFs.** Large language models (LLMs) and Generative AI empower the next level of proactive, intuitive, and communicative virtual aides—reinventing how we work with machines and ushering in a new boom in global productivity.

5 **There's a new jolt of "auto" in automation.** Automation leads the way into the future of work by leveraging AI to take manual work out of robot maintenance, automation building, model training, and more.

6 **Safe AI becomes a focus of action—and innovation.** The C-suite takes serious steps to counter AI's risks, and scientists and AI providers respond with a slew of new safeguards.

7 **We begin the work of redefining work.** As our relationship with machines changes, we take the first steps in reimagining what human work is—and the skills we'll need to succeed in an AI-rich world.
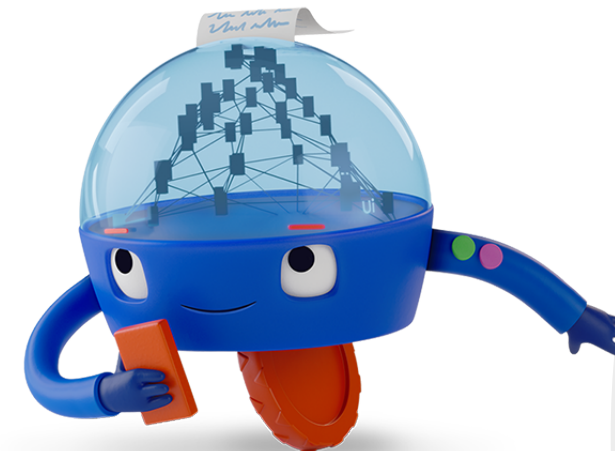
The C-suite seizes AI's value—with automation's help.

If 2023 was the year of AI hype and hope, 2024 is the year that AI happens.

Today, executives everywhere have been galvanized by AI's potential to help them grow and innovate, transform every facet of work, amp up productivity, and thrill their customers in new ways. In 2024, they'll be focused on turning AI's potential into real return.

But when more than three-quarters have yet to scale AI across their operations and drive meaningful results[2], there's still a big AI execution gap to fill.

There's a lot of serious effort—and serious money—fueling AI execution efforts. For instance, by the end of 2024, the vast majority of companies (88%) will have allocated capital to building out their AI capabilities.[3]

And many are turning to automation to help them execute their AI plans—because the two together are a force multiplier for AI. McKinsey estimates that "combining generative AI with all other technologies, work automation could add 0.2 to 3.3 percentage points annually to productivity growth."[4]

And in a UiPath-commissioned survey by Bain & Company on AI and automation, 70% of executives deemed AI-driven automation either "very important" or "critical" for the future of their industries, while 45% said the integration of automation and AI would transform their industry. They believe AI and automation deliver value not just through higher productivity and efficiency (85%), but also by enabling new product and service offerings (58%), data monetization (52%), and heightened personalization (47%).[5]

Automation is proving to deliver fast time to all sorts of AI value. So, in 2024, as companies get laser-focused on realizing their AI ambitions, they'll turn to enterprise automation to help them get it done.

AI investment by 2025.[6]

$100B
U.S.

$200B
globally
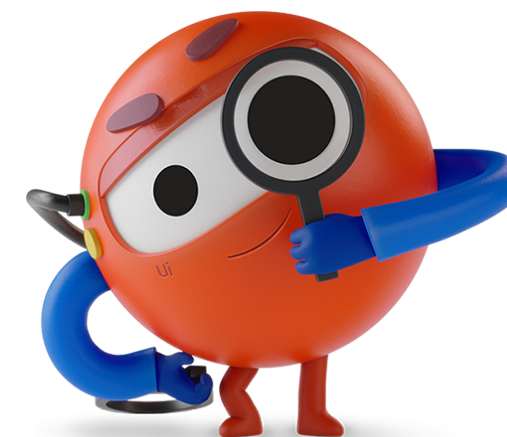
"It's not what our technology does, it's what our technology enables our customers to do."

Rob Enslin
Co-CEO, UiPath, speaking at FORWARD VI

Select AI + automation use cases get hot, hot, hot.

'Proven value producers' and 'ready-to-go' are the phrases that pay.

Executives are on the hunt to implement AI use cases that can quickly generate significant value from AI. Several AI + automation opportunities hit that sweet spot—so it's no surprise that demand for them will heat up in the coming year.

So what use cases are we talking about? A big one is intelligent document processing (IDP). In industries that are deluged by documents—think banking, healthcare, insurance, and legal—IDP delivers enticing improvements in speed, capacity, and costs. But it's applicable to many other industries and lines of business, and it can start delivering results quickly.

What else? Here's just a sampling:

- Communications mining can understand and act on enterprises' flood of emails, texts, and other unstructured data.

- Process and task mining provide valuable X-ray vision into complex operations enterprise-wide and can serve up the best automation opportunities.

- Automated testing can significantly reduce development time and uptime performance for high-quality enterprise-built apps and automations.

These use cases combine cutting-edge AI with automation, and, in some cases, are packaged into solutions accelerators that cut implementation effort. So even if organizations are still building out their internal AI capabilities, they have a fast track to AI value.

> "If you're looking to use AI, look at your software, look at your business processes. Because that's where the opportunities are."
>
> **Mike Gualtieri**
> VP and Principal Analyst, Forrester,
> appearing on UiPath Live: AI from A to Z.

IDP, 2023 to 2030

30.1%

Compound annual growth rate (CAGR)[7]

The transparent organization comes into focus—end-to-end.

Process and task mining are shining; digital twinning is winning.

Before X-rays and MRIs, physicians lacked the key information they needed to understand, diagnose, prescribe, and cure their patients.

Until recently, the same could be said for enterprise managers: no clear visibility into how work gets done end-to-end, no easy way to diagnose problems and bottlenecks, and even a harder lift to remediate them.

But today, process intelligence—a potent combination of AI-rich capabilities built around a core of advanced process, task, and communications mining—has enabled a great leap forward in ops management. Now, organizations have the tools they need to continuously monitor and assess processes end-to-end, across systems and silos. What's more, these "corporate MRIs" can also indentify the best, highest-ROI solutions to keep workflows moving efficiently.

The most cutting-edge organizations are taking it a step further by creating "digital twins" of their operations. This not only gives them dynamic, granular, real-time visibility into their inner workings—but also allows them to model the impact of proposed workflow improvement scenarios before taking any action.

Early results from leading-edge adopters suggest that, by making their organizations transparent, they can deliver visible improvements in efficiency, capacity, and throughput across their organizations. All good reasons why we predict we'll see an upsurge in new adoption in 2024 and beyond.

"CxOs agree that process intelligence, automation, and AI used together deliver optimized processes (86%) and improved workplace productivity (79%)."[9]

Process mining, 2021 to 2030

49%

CAGR[8]

LLMs power virtual BFFs.

Superpowered copilots achieve liftoff—helping people fly through their workdays.

In a recent survey, 65% of U.S. executives felt that advances in Generative AI and LLMs will significantly impact their organizations over the next three to five years. Unfortunately, 60% were at least a year from launching their first solutions.[10]

However, they don't have to wait that long to reap LLMs' benefits. Enterprise software providers are already putting them to work throughout their technologies.

One area that's hot right now: copilots. These virtual desktop assistants understand people's work contexts and tasks, and communicate in plain language. So—just like the best human assistants—they can quickly learn to auto-complete a wide range of activities and take proactive steps to make work flow faster and smoother.

For example, we're building UiPath Autopilot™ experiences into tools for developers, testers, process and task miners, and business users. For business users, UiPath Autopilot for Assistant will do things like:

▪ Copy and paste data and images into webforms, spreadsheets, and enterprise software systems (ERPs, CRMs, etc.) with minimal training

▪ Read and respond to emails, extract attachments, and generate reports

▪ Understand manual tasks and create automations to replace them

And that's just UiPath. The new copilot category is rife with Gen AI-based innovation that promises to make labor a whole lot less laborious for a whole lot of people. And without daunting adoption barriers.

OK, so maybe virtual assistants won't ever be someone's actual BFF. But in a world where up to 70% of knowledge workers are eligible for AI-powered assistance[11], they'll definitely be an A-list guest on a desktop near you.

For customer service reps, "the [generative AI-based conversational assistant] increases productivity by 14% on average, including a 35% improvement for novice and low-skilled workers."[13]

Estimated market size, global intelligent virtual assistants:

$62B

$5.2B

2022   2032

28%
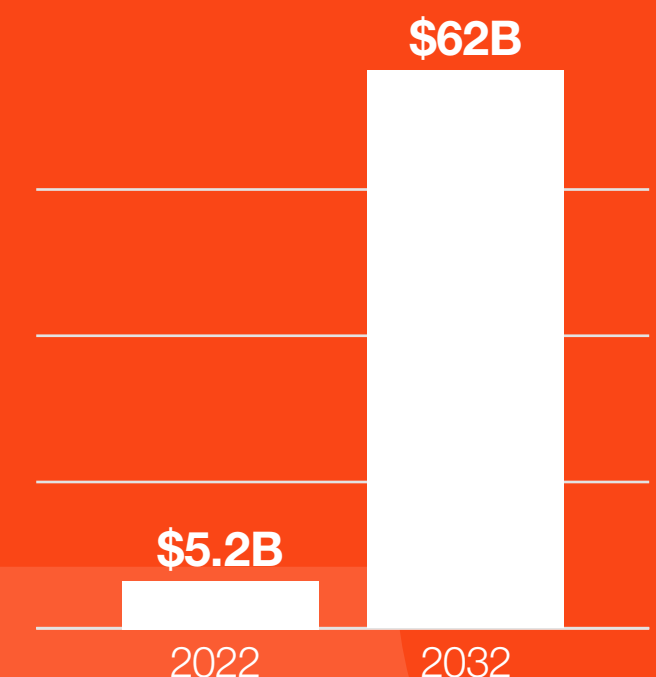
CAGR[12]

There's a new jolt of "auto" in automation.

AI enables a big leap forward in automating automation itself.

It's ironic, but automation has historically required a good bit of manual work to make it work. That will be changing significantly over the coming year, with a range of "hands-free" enhancements. Some news of note:

- **Want no-code? Just ask for it.** "Could you build me an automation that does this?" In the coming year, that's the question many developers and business users will ask their automation platforms. That's because the technology has now gained the ability to convert natural language into automations for workflows, test cases, process mining, individual tasks, and more.

- **Robots, heal thyself.** Resiliency gets raised to new heights in 2024, as robots gain AI-enhanced abilities to not only identify if they're having a problem executing an automation, but also to auto-correct it.

- **Model good behavior.** Thanks to Generative AI and new analytic techniques, much of the hard work of model training—for things like reading documents, parsing unstructured communications, and extracting, compiling, and entering data—has now been automated. That's drastically cut the time, expertise, and effort required to power intelligent automated flows.

These are a few of the ways that automation is becoming more automatic. Expect continued innovation—and strong uptake—in this area through 2024 and beyond.

"Reducing model training time is key to bringing faster time to value and ROI with AI. New techniques are accelerating model training time for IDP by up to 80%—from a week to a day for complex scenarios, or down to minutes for simpler forms."
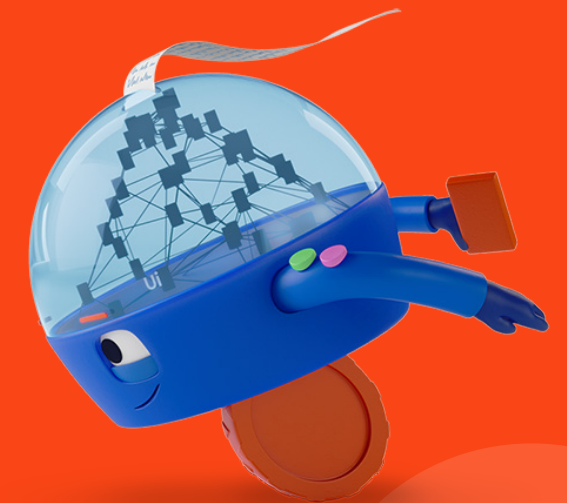
Graham Sheldon
Chief Product Officer, UiPath, speaking at FORWARD VI

Low– and no-code development reduces:[14]

↓**70%** Cost

↓**90%** Time

Safe AI becomes a focus of action—and innovation.

We all do the hard, careful work to improve AI's risk/benefit equation.

Enterprise leaders certainly recognize AI's potential value. But they also see its potential for misuse and miscalculation—and know they need strong guardrails and controls in place.

Unfortunately, progress in this area has lagged. In a KPMG study, only 5% of companies already had a mature AI governance policy in place, and only 19% were in the process of implementing one.[15]

But we predict that we'll see strong acceleration in adopting AI governance in the coming year—aided by innovations and offerings in areas like these:

- **AI governance included.** Companies won't have to do it completely on their own—enterprise software companies are building robust AI controls into their own offerings.

- **Looping in human in the loop.** As more companies recognize the critical importance of human review of machine output, look for technology providers to launch advances across their human-in-the-loop capabilities: simplified execution, more impactful exception flagging, and easier ways for people to review and send feedback, to name a few.

- **Unearthing hidden AI.** Complex enterprises already have many hidden decision rules and AI models being silently and continuously executed by machines—and not always optimally. (We know of one financial services firm that discovered thousands of outdated and conflicting rules and models responsible for tens of millions of dollars in lost revenue.) Could unearthing this subterranean AI network be a new use for process and task mining? We think so.

- **Consulting boom.** From the big global systems integrators to specialized firms, our partners tell us that AI governance is a hot topic of inquiry.

Good AI governance is critical for driving strong AI results. For many organizations, 2024 is the year they'll see it progress rapidly from aspiration to implementation—aided by innovation.
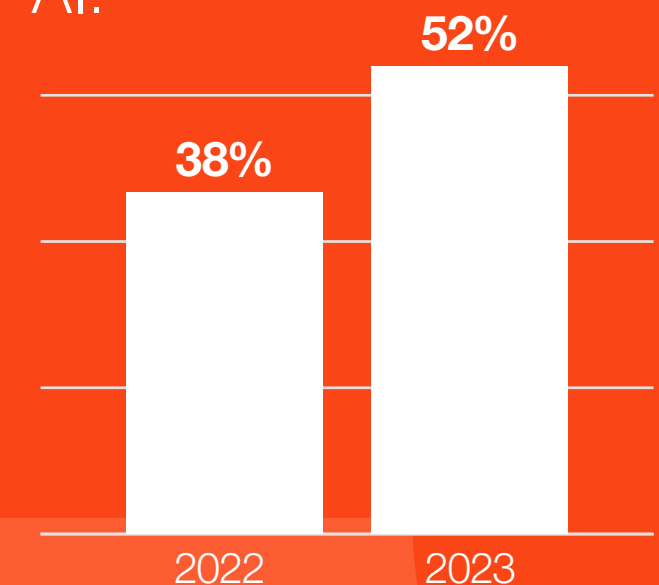
Rising fears of AI
"I'm more concerned than excited about AI."[16]

Year	Value
2022	38%
2023	52%

"Trust is the foundation…if we can't trust these systems, if we can't validate them, ultimately we can't use them."

Edward Challis
Head of AI Strategy and GM for Communications Mining, UiPath, at FORWARD VI

We begin the work of redefining work.

Applying our uniquely human capacity for imagination and ingenuity, we conceive new relationships with machines.

We're now living in a world where LLMs can do at least some of the work of 80% of workers[17], and by 2030, up to 30% of current work could be automated.[18] What does all this mean for what we do at work, and how we do it? What types of skills and what types of people will we need to succeed? How can we best work with machines and with each other?

In 2024, we'll take the first steps to address these questions. Three areas we predict will be areas of intense focus for thought leaders, human resource executives, policymakers, and education professionals include:

- **Learning from professions that are further along the adoption path.** There are numerous jobs where AI assistance has already been integrated, from programmers to radiologists to customer service reps and beyond. We can apply this experience to design jobs, structure best ways to collaborate, and define the most important skills for other high-AI-impact jobs.

- **Thinking through the real labor implications of a virtual workforce.** Already, there are some places where employers need to alert unions and/or the government if they plan to add a virtual worker. In 2024, we'll see significant focus on crafting policies and approaches that reflect the needs and views of employees, employers, unions, governments, and the public at large.

- **Redefining the best skillsets—and reimagining how we build them.** In the future, will we be looking for prompt engineers instead of programmers? People with high qualitative skills or high quantitative ones? In 2024, we'll begin the work of redefining core capabilities and reskilling workers to take on new roles and responsibilities. We'll also see new ideas on designing an education system that can prepare "Generation AI" for its new world.

Of 900+ job types in the U.S.,

96%

contain some tasks that could be assisted by technology.[19]
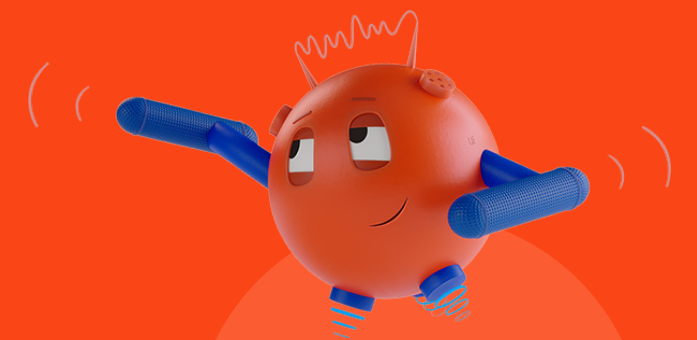
"Our education system should create people that can engage in meaningful conversations, can understand empathy, can understand creativity, have imagination. AI is not going to help in this task. We have to be the master of AI."

Daniel Dines
Founder and Co-CEO, UiPath,
speaking at FORWARD VI

Conclusion

When science pioneers took the first steps toward launching what is now the Internet, it is unlikely that they knew what they had wrought. They could not have conceived the vast changes it would foment in the way the world and its people operate and communicate, work and play, buy and transact, learn and grow. Of the industries and new jobs that would arise, and the new opportunities it would create. Of the good that it could do…or the harm it could inflict.

In many ways, we are today at a similar point with AI and automation. The potential changes are so immense, so mind-blowing, that we can only catch glimpses of what might be and what is possible. While we can see some of the specific things that will play out over the near term, the rest of our AI-rich future must be revealed over time.

As we have looked ahead to the coming year, our trends have therefore focused on the things we feel to be concrete and knowable. We selected them based both on third-party research and analysis and—crucially—the information and perspectives we are privy to because of our unique position as a market leader in automation. And we wanted to make them practical and useful to organizations seeking to seize AI opportunities in an effective, responsible, and strategic way.

Thank you for reading this—and we wish you all the best in what promises to be a very dynamic and opportunity-filled 2024.

Ui | Path The Foundation of Innovation™

Citations

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Get in touch with us for more information and learn how automation and AI can help you capture the biggest opportunities in 2024.

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WhitlockIS

whitlockis.com

info@whitlockis.com

919-941-1900

UiPath (NYSE: PATH) is on a mission to uplevel knowledge work so more people can work more creatively, collaboratively, and strategically.

The AI-powered UiPath Business Automation Platform combines the leading robotic process automation (RPA) solution with a full suite of capabilities to understand, automate, and operate end-to-end processes, offering unprecedented time to value.

The UiPath Platform combines Generative AI and Specialized AI with the agility and speed of enterprise automation, machine learning, and natural language processing. This allows UiPath customers to leverage AI throughout their operations—from complex enterprise processes down to individual tasks. That's AI at work…that *works*.

For organizations that need to evolve to survive and thrive through increasingly changing times, UiPath is The Foundation of Innovation™.

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