A Complete Guide to Ui|Path

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Automation leading to greater innovation

Daniel Dines
Co-founder and co-chief executive officer, UiPath

We humans are in a race to progress. We are at the point where we are able to close the circle of history – a circle of manual forced work – that started with the invention of agriculture, followed by the industrial revolution and the information age. What was common during each of these ages is that even though the nature of jobs changed dramatically, one thing remained constant: most of the work people actually did every day was repetitive and monotonous.

Along came automation, which became a major factor of humanity's progress. Automation has freed humans of manual, tedious tasks, allowing them to focus on work of higher value – increasing productivity manyfold.

As the economy largely moved from manufacturing to services, the need for automation shifted from industrial to business process automation. But, despite enormous gains in computing power at our fingertips, we witness a paradox. While today's work is largely digital, the repetitive, manual work has not disappeared – the form of it has simply shifted. For example, today's knowledge worker spends a vast amount of their time at work extracting, entering and processing data, and enduring the drudgery of continuously copying and pasting between a growing number of applications.

Instead of tools for thought, workers were given tools for busy work. Instead of removing work off their plate, they've been given dozens of new applications to occupy their days. We have to do better. We can do better. And now with automation, we are doing better.

But traditional approaches to business process automation have been time consuming and expensive, often requiring significant change of infrastructure and process, skilled engineers to code and test, and influential project managers to navigate numerous stakeholders. Thus, automation has been economically justifiable only for the highest volume, standardised, and static processes, limiting the scope and potential of automation.

A new approach was needed to handle the growing long tail of business processes to be automated.

Much like how self-driving cars emulate human drivers but still reuse the existing car and road infrastructure, we at **UiPath** have created a form of automation that emulates people performing a business activity on a computer. The software infrastructure, existing applications, and workflows are reused, thus reducing complexity and cost of implementation.

This new approach to automation is made possible by integrating and advancing a number of disparate technologies: AI (especially computer vision and machine learning), user interface automation, API integration, workflow automation, orchestration, and low-code development.

Emulation expands the scope of automatable use cases to those that were difficult to automate by other means, unlocking the opportunity for tremendous economic benefits. It allows us to build a horizontal enterprise automation platform that facilitates adoption of automation across various business groups: finance, operations, sales and marketing, HR, and legal and across different industries: financial services, healthcare, high tech, retail and the public sector.

Our platform helps different personas with connecting and collaborating, from process analysts to contact centre users and customer service professionals, from financial analysts to data scientists, and from operators to developers. We are expanding the use cases and the people who can address them. Through democratisation, we are expanding the market for professionals able to deliver automation.

Automation is now becoming an established layer in the enterprise stack, sitting on top of the application layer. Most of the routine use of underlying apps will be delegated to the automation platform enabling our customers to achieve the fully automated enterprise. In this way, automation is shifting from a tool to a way of operating and a way of innovating.

We started UiPath because we realised we could help humans reduce the time and stress that comes from menial, administrative business tasks. This work has made them robotic. With our technology, people have time to focus on the work they actually enjoy, the work they set out to do. We made robots so people didn't have to be robots.

As much as we've accomplished, we recognise that there is a tremendous amount of work – and opportunity – ahead of us. Enterprise automation will prove to be the fastest path to bring AI into your organisation, driving new sources of long-term competitive advantage.

Our mission will continue to be accelerating human achievement by empowering people to delegate work to robots. This is the promise of the fully automated enterprise. The future of work is human, it's creative, it's social, and it's dealing with the unexpected – together.

The vision for automation

Ted Kummert

Executive vice president
of product engineering, UiPath

Automation has now become a strategic platform for most enterprise companies. It frees humans of manual, tedious tasks, allowing them to focus on higher value work. According to a study by **UiPath**, 86 percent of executives surveyed believe automation will enable their employees to focus on more creative work — and spend less time on mundane, repetitive, time-consuming tasks.

As platform capabilities have expanded since the beginnings of robotic process automation (RPA), automation platforms are increasingly used to implement new business ideas, processes and capabilities as well. Automation delivers powerful, measurable return; is an investment in the well-being of employees; and is a strategic platform to help companies transform their processes.

UiPath Business Automation Platform has a broad platform vision that spans personal productivity and enterprise processes, helping make digital transformation a reality. The UiPath automation platform has three layers that work together to achieve this goal. Those layers are summarised as: discover, automate, and operate.

Discovering today

Discovery is vital to any automation process, and it is central to the journey since it focuses on first finding and prioritising an organisation's opportunities to automate. Our differentiating opportunity is to not only drive process transformation, but to accelerate automation programmes. Discovery is enabled via a deep understanding of enterprise business process, the work of an organisation, and by harnessing the knowledge of experts across the enterprise.

For process understanding, UiPath is a leader in process mining, a solution that uses activity data from business applications to give a business a detailed understanding – and a graphical representation – of complex business processes and learn what to automate to create the greatest business value.

For understanding the work of an organisation, **UiPath Task Mining** observes the work of people to understand where repetitive high value

tasks exist that can be automated. With features like assisted task mining, real variations and exceptions can be identified as well.

Another important aspect of discovery is engaging with those doing the work. Ask yourself, "what is our best source of automation ideas?" Your employees. They actually perform how work in reality gets done end-to-end, touching your customers, your systems and all of your databases, and are best positioned to share ideas on tasks and processes they find most frustrating. Ultimately, discovery will help radically drive efficiency throughout your business, creating a more responsive customer-experience, a better employee experience, and uncovering new channels to further innovation.

Automating now

Automation should empower both developers and business users to reach new capacity with their work — no matter their background and experience. Our core automation platform continues to expand, combining leading UI automation and API integration,

long running workflow, integrated document processing, seamless access to machine learning (ML) and artificial intelligence (AI) models and skills and many more capabilities. At UiPath, we see a continued convergence of capabilities from iPaaS, BPM and low code application platforms with RPA such that customers can do increasingly more with one platform. Our vision is to fully empower multiple developer personas from the professional to citizen developers.

According to **Mendix**, 71 percent of IT and 77 percent of business leaders know their IT teams' pipelines are laden with unbuilt projects. Citizen development allows non-IT employees and software engineers to build business applications with low- and no-code platforms. In turn, they can improve processes that free up time to focus on more business-critical activities. Because citizen developers are subject matter experts, they can discover and build the most important automation for their workflows. Citizen developers are interested in learning new activities in the workplace and shouldn't be hard to find: 86 percent of employees say they want more opportunities to learn new skills, and 83 percent wish their company gave them a way to upgrade current skills.

There is more to digital transformation than automating the processes that only live at the highest organisational level. To truly become an automation-first enterprise, and to automate effectively, personal, departmental, and individual automation is a priority — making citizen developers the key to doing so. Traditional enterprise technology upgrades have been led from the top down, making the process slow. But with citizen development, the automation journey can be spearheaded company-wide at many levels and at scale.

With the help of citizen developers, the automation layer begins with a semantic understanding of the key digital building blocks used in applications and processes like screens, data, documents, and communications. This layer also includes software robots — a digital workforce that can seamlessly collaborate with employees and

automate work by emulating humans through UIs and AI, while also reaching directly into APIs when possible. When the vision is operationalised, automation delivers the best combination of flexibility, speed, and scale.

Operating tomorrow

Running and optimising a mission-critical automation program at a high scale involves an operational enterprise-grade foundation. This foundation includes analytics, proactive testing, unified management and governance, and flexible deployment from on-premises to cloud. While analytics capabilities are important to understand the return of automation programs, proactive testing is crucial for reliability. Automated software testing is rapidly growing in importance as organisations battle talent attrition and seek to reduce technical debt. As an example, a large enterprise UiPath customer using the **UiPath Test Suite** helped it achieve five times faster test automation, 80 percent automation coverage, and 50 percent less maintenance.

Of course, the more automation becomes pervasive in a company's technology ecosystem, and as the platform capabilities grow, the more management and governance matter – not only for risk management, but also for driving cost control and accelerating time to value. Any vision for automation must contain IT policy and governance control like a rules-based policy for developers and users. This is crucial to automating business practices faster and ensures successful software deployment.

Taken all together, this is automation-fuelled transformation, delivering faster innovation, and business value throughout the enterprise. As with any technological advancement in the past, automation is naturally disruptive at first, but it also drives down costs and helps provide more robust, intuitive solutions to employees at every level of the business. Automation is only beginning to uncover untapped potential within businesses of every size and in every industry, and UiPath continues to lead with its vision for the automation era.

Automation outlook for 2023 and beyond

Maureen Fleming
Program VP, inteligent process automation, IDC

Economic uncertainty, the need for automation technologies to operate seamlessly together and the rapidly increasing adoption of citizen automation programmes are converging to alter how enterprises will plan for automation in 2023 and where they will focus their investments.

In a worldwide September 2022 survey conducted by IDC, 72% of respondents expect 2023 to be a recession year. This will herald a more conservative approach to IT spending. Forty percent of respondents believe IT budgets will be flat or increase

slightly, while 35% believe budgets will be reduced only in specific areas and 15% expect IT budgets to be reduced across the board.

Investments in automation grew in double digits over the past several years, and IDC expects growth to continue although the growth rate will be modestly softer than in previous years. With an economic downturn, priorities will focus more deeply on ways that automation concretely will improve financial performance by adding cash to the balance sheet and by driving out costs to operate more profitability.

Automation priorities in 2023

According to IDC's September 2022 Future Enterprise Resiliency and Spending Survey, the top three automation priorities in 2023 are:
- Lowering operating costs (42% of respondents)
- Greater efficiency (41%)
- Improving customer satisfaction (41%)

Note: This survey had 832 decision maker respondents worldwide consisting of which 74% were in IT and 26% in lines of business. Regionally, 31% of respondents were from North America, 44% from APAC and 24% from EMEA.

The top business areas that will be prioritized in 2023 are:
- Supply chain (46%)
- Customer care (40%)
- Finance (34%)

Top process priorities including automating manual repetitive processes, fixing supply chain problems, improving order-to-cash, improving customer experience, and reducing lead time. To fix these problems, multiple styles of automation are required. Respondents named workflow automation as a primary technology needed to improve processes. Application integration was also named as a critical technology along with robotic process automation, intelligent document processing and other types of automation.

Platforms broadening automation technologies to support seamless end-to-end automation

Traditionally, enterprises have had to select diverse automation technologies from different vendors to implement straight through automation. The ability to seamlessly connect these technologies together is a top challenge cited in IDC's survey and is also a top priority of automation vendors. Over the past few years, leading automation platform vendors have added diverse types of automation to offer broad automation capabilities, supporting backend automation through the use of APIs, front-end automation using RPA, workflow automation to advance work to completion supporting both automated and human-in-the-loop requirements and content automation that uses AI to convert

structured and unstructured content into a machine readable format.

Platform vendors are also beginning to supplement core technology-specific automation development capabilities with a technology agnostic orchestration layer that is used to advance work through a process regardless of the underlying technology. The combination of multiple types of automation and an orchestration environment design and execution environment will substantially solve the challenge and effort of combining diverse automation technologies to broaden automation's potential in an enterprise.

Measuring the business value of automation

Another top challenge cited by survey respondents is the difficulty they have building metrics that tie improvements to financial outcomes. Automation vendors are heavily focussed on this problem by using both process and task mining technologies to scope automation opportunities, moving to fact-based documentation, planning and design.

Process mining looks at a business process while task mining identifies how workers perform the actual work – or tasks – within a larger business process.

By collecting event logs from applications, process mining produces documentation about how a business process works in production, producing a statistical analysis of process efficiency. By recording workers performing the same tasks, task mining documents how manual work is performed, also producing a statistical analysis that produces a score about whether the task is a good candidate for automation.

Both provide metrics that can be used in an automation business case that describes how a process currently operates along with the metrics that can be achieved through improvement. Newer capabilities offered by some automation platform vendors take the as-is performance from process and task mining and continuously measure the performance as improvements are made. These can then be tied to financial

performance improvements.

As we move into a tighter economic climate, fully understanding the automation potential before any investment in automation is made provides high quality documentation and requirements along with a mechanism to prioritize investments. Automation platform vendors are increasingly offering process and task mining capabilities as part of their platform either directly or through partnerships. They are also beginning to link execution performance with the planning-based metrics and tying those to concrete KPI improvements as well as tying automation initiatives to financial performance.

Improvements in developer ease of use support citizen automation efforts while improving automation governance

With many types of automation platforms, development does not require professional developers with computer science backgrounds. But the success in training business users to build their own automations has traditionally under-performed expectations. IDC's survey supports this, cited as a top challenge by nearly one-third of the respondents. Up until recently, the sweet spot of automation

was the use of developer specialists trained to use low-code automation environments operating out of IT.

This exposes a problem as enterprises adopt programmes that train and support business users to do their own development. In IDC's survey, 35% of enterprises already offer a citizen developer programme. Within two years, 68% of enterprises in EMEA, 60% of enterprises in AP and 59% in North America will offer citizen developer programs. When the primary automation platform is too difficult to use successfully by business users, enterprise looks for a secondary simpler platform for their business users. That

creates problems with governance, support, duplication of effort, succession planning, etc.

This rapid proliferation of new developers trained in automation development created new urgency on the part of automation platform vendors to simplify and improve capabilities to enable successful use by trained business users. Toward the end of 2022, significant improvements were made that will continue into 2023.

With business users successfully working together to solve their own automation problems coupled with automation centres of excellence focussing on strategic automation, we will see a magnification of the benefits of automation in 2023, with the potential to impact financial performance in the 2023-2024 timeframe.

As automation platforms successfully support citizen developers, enterprises have an opportunity to improve the level of collaboration between developers in line of business and in IT while offering a unified governance model supporting multiple developer personas. This will further accelerate the proliferation of automation and resulting benefits.

As we move into 2023 and greater financial uncertainty, automation technologies should be central to

Top priorities including automating manual repetitive processes, fixing supply chain problems, improving order-to-cash, improving customer experience, and reducing lead time.

improving operating performance in different ways covered in this article. Leading automation platform vendors are focussed on multiple efforts to offer platforms that are extensible, simpler to use and much better at planning, quantifying benefits ahead of an automation and measuring performance on an ongoing basis that ties with financial performance. They also recognize the important role business users can play in automation in citizen developer roles.

Teams should talk to their automation platform vendors to learn more about new features and planned improvements for 2023.

The evolution of platform programmatic automation

Adrian Bridgwater
Technology editor, ERP Today

As human beings, we naturally seek each other out and build societies around the notion of community and togetherness. But despite our grounding in societal structure and proclivity for human contact, we also seek out machines and automation.

While some might trace the origins of automation back to pre-biblical times and point to our ability to build water-channelling 'technologies', most of us agree that automation first happened during the industrial revolution in the mid-1700s. This era saw the harnessing of steam power and mechanisation, which of course paved the way for the internal combustion engine, electrification and so on.

In the current digital age, we think of automation in terms of software and the use of robotic process automation (RPA). But even RPA has roots that pre-date its modern form and function, so where did it come from and how are its roots related to its recent rapid ascendancy and development?

Scraping for basics

Screen scraping technology has and had existed as a form of data capture and ingestion before the rise of RPA. Sometimes referred to as data scraping at the presentation layer, we would normally now be more comfortable talking about screen scraping a graphical user interface, but the two terms mean mostly the same thing.

Now becoming a subsumed technology in the age of application performance interfaces (APIs) and their ability to create fluid channels for data interchange, screen scraping has historically been used to get information from one (often incompatible) system to another.

Still thought of as a precursor technology to modern RPA, screen scraping has left a certain amount of its DNA in modern automation platforms, but today's tools provide a far more granular means of ingesting information using optical character recognition (OCR) for greater accuracy and contextual meaning.

Ever smarter workflows

We must pass a respectful nod to the related practice of workflow automation at this point. With origins dating back a century to early 'time and motion' studies applied to workplace roles and processes, the concept of workflow automation shares a history with RPA because both functions are designed to speed up manual data entry and process management.

This brief history of automation must

obviously include machine learning (ML) and artificial intelligence (AI) as base elements.

After a brief starring role in the movies during the 1970s and 1980s, AI spent a period of quieter development until its post-millennial popularisation and wider development in the era of cloud computing. Now an integral part of RPA systems enabling both task and process mining and learning, AI's role in programmatic automation can not be overstated i.e. it understands and enables us to infer, direct and manage.

From the sum of these developments and through a defined and refined approach to creating a new standard in automation, we ultimately came to RPA somewhere around the turn of the century.

When we talk about RPA today, we have moved the discussion to business-centric platform programmatic automation. Often making use of drag-and-drop simplicity, we can now harness automation for real world use cases to speed and manage workflows in a more intelligent way.

The intersection of RPA and AI
Although we talk about AI being a constituent part of RPA, we gain a significant and real acceleration factor if we consider modern RPA working alongside AI. This is because RPA is really good at streamlining repeatable, definable and measurable rules-based business processes, but exceptions and outliers will inevitably occur.

When we can apply AI to RPA to understand more about the context of every element of data inside a workflow, then we can perform more complex decision-making and work smarter.

Applying automation enables an organisation to adopt a new approach to streamlining its processes, which in turn enables it to start moving towards scaling those parts of its business that are most profitable and most innovative. This is the emergence of positive business change brought about by automation in and of itself. Or, to put it another way, it is automation-fuelled transformation.

As automation now shifts from being a tool inside the IT stack to becoming a standard for the way an organisation thinks about operating and innovating, we are witnessing the widespread adoption of prescribed programmatic automation across diverse industries. With financial and insurance industry application use cases often cited as among the most prevalent, RPA has massive penetration in retail, services industries, healthcare, manufacturing, transport, utilities and more.

Our RPA future
Looking to the future, we can see RPA becoming an ever more prevalent element of technology stacks at every level. Key areas for development include innovations that harness and integrate an increasing amount of machine vision technology to capture and interpret real-world images from human faces to places and objects.

As we further develop machine learning and grasp a new era of cognitive computing, the bots that we train and deploy for engagement inside RPA systems will extend above their ability to automate simple repetitive processes; they will ultimately shoulder more complex tasks and learn additional abilities without humans being involved through intervention or programming, even in the case of exceptions.

Embracing RPA at the platform programmatic automation level means moving the technology itself upstream, out of IT silos and into the tactical and strategic planning processes that every department strives to execute. Because customer outcomes have shifted from being tactical to transformational, RPA will take a frontline role at a commercial level to bolster existing digital initiatives.

A key part of this progression is testing automations to ensure they continue to perform reliably and accurately on an ongoing basis. Once again, at a platform level we can now benefit from automated testing to rapidly and thoroughly test automations and the applications they serve. This testing can be applied pre-deployment and in live production to ensure quality, stability, resilience and performance.

The immediate road ahead for many businesses is a willing embrace of cloud-native technologies. That new imperative for IT platform evolution must now also feature an automation-first approach to building digitally-centred products and services that make both employee and customer experiences and lives better.

It's time for a new automation approach

Craig Le Clair

Principal analyst,
Forrester Research

Companies now realise that competitors that excel at automation will outperform them. At the same time, they realise that intelligent automation (IA) and hyperautomation, while an accessible way to jump-start automation, is only part of the answer. Its strength is tactical efficiency that falls short of the transformational potential of AI. In short, to get ahead, enterprises need something new, a different perspective. This article first explains the forces behind this emerging attitude, and secondly describes an emerging automation example that aligns with this view.

A key distinction for the next automation period is how the technology works with people. IA extracted simple and repetitive tasks that were almost robotic from humans. Future process transformation requires we extract more cognitive human functions like sensing, decision-making, and conversation from humans and put those into the robot or machine. Put simply, automation takes on more human-like characteristics. A second distinction is this: IA makes things we already do more efficient, but the more human-centred approach gives us entirely new ways of doing things.

The change will be gradual and, in some cases, barely noticeable. Crude chatbot sessions of the previous era are replaced by machines that carry a more complete conversation. AI begins to make real decisions such as granting a loan or advising a judge on the right bail amount for an offender. Digital smarts become embedded in the physical world to allow autonomous delivery to our homes, robot janitors to disinfect offices, and robotic security officers. Compared to IA, it's the difference between lightning and a lightning bug, to steal a line from Mark Twain.

So how do we get there and what's missing today? To start, leaders must weave together automations in a thoughtful, scalable, and managed way. Organisations will use today's loosely coupled automation technologies such as RPA, DPA, low-code tools, and AI building blocks, to build more connected end-to-end automations.

Forrester calls the framework needed to do this the "automation fabric". Interoperability among today's siloed automation stacks, is a

key tenant. Today's data integration tools, AIOs and related infrastructure automation, and the world of physical robotics, for example, do not work together. They grow in isolation and will become a barrier to automation success. Tomorrow's real-time data and modern edge applications makes interoperability critical and inevitable. The fabric is also an institutional philosophy that governs and promotes success through proper people development and caution.

Autonomous workplace assistants

In the new world of work, we must master collaboration among humans, digital workers, and robots. AWAs embrace Forrester's automation fabric principals to do this. They are built with interoperability, agility, and autonomy in mind. Forrester defines AWAs this way:

Cognitive or physical automation that can make decisions, acts without approval and performs a service based on its environment, context, user input and learning in support of workplace goals. They can be scheduled, triggered by an event, or directed by a human.

AWAs are programmed using machine learning and capable of acting independently to achieve certain goals. Monitoring, detection and decisioning are built in. When an AWA receives some form of sensory input from its environment, it then performs some actions that change its environment in some way to reduce human workload. They use AI to retain context, always with the end goal in mind. They use conversational intelligence to ask questions when stuck, and become enriched with interaction.

AWAs differ from two other forms of workplace assistants. Task-oriented digital workers, the focus of RPA platforms, complete short tasks, are simple to deploy with verifiable productivity returns, but do not learn, have no context, and follow predetermined patterns. An example would be a simple unattended RPA bot performing address updates in a contact centre. There are millions of task-oriented digital workers or bots operating today.

Collaborative assistants is the second category. They help complete tasks but use ML and process software to provide guidance and recommendations, and always depend on having a human in the loop. Agent assist automations, for example, are already a key component of advanced contact centres, that work alongside human agents. Collaborative assistants are also used in document extraction use cases, where a human is in the loop to check on the accuracy of extracted fields. There are many more 'collaborative' assistants than AWAs today, for one important reason. The human in the loop lowers the AI risk. Algorithms and data need not be perfect.

AWAs take assistance to the next level. They still perform tasks on behalf of a human but do so without the human's help. They are goal driven, proactive, autonomous and operate in a 'closed loop' process pattern. Already, insurance companies use AWAs to help non-captive agents submit commercial insurance proposals. Truck manufacturers have AWAs that use predictive analytics on maintenance data, access parts inventory warranty status to autonomously, schedule trucks for repair. Providers in health care use AWAs to combine doctor's transcription and report creation with EMR. Financial firms have AWAs collect data for 'know your customer' reviews.

Today AI has found its way into almost every enterprise software platform, yet in most cases it's buried as a feature or capability and not applied to a business problem or outcome. Providers tend to lead with AI platform features which everyone seems to have, as if an AI component alone solves a business problem. Leading with a result-oriented automation such as an AWA is far better. Expect enterprise application vendors, RPA and DPA suites, and global service companies to take note. In summary, recognise these shifts in automation ambitions and likely changes in supporting software markets.

Intelligent automation

Unlimited opportunities for customers who get it right

Paul Esherwood
Editor at ERP Today

The conversation around automation is evolving: from a speculative technology used to improve isolated bottlenecks, to an enterprise imperative that sits at the heart of modern operating models.

The original flavour of automation tools – most commonly called robotic process automation (RPA) – was deployed to perform narrow tasks quicker and more accurately than a human could. Its use was often found in back office functions where significant manual effort was required to load data into forms or to tackle repetitive processes like invoice matching. RPA solutions offered some value, but the limited scope of the technology only delivered finite benefits that were restricted to a particular task or process.

Today, the remit for automation goes far beyond this type of narrow optimisation and provides enterprise leaders with an opportunity to radically alter the way data, processes and humans interact. As Sam Balaji, global consulting leader at **Deloitte**, tells ERP Today: "The client conversations these days are often about how traditional RPA is now enhanced with AI and ML to offer a more robust technology platform, such as the solutions that **UiPath** offers, to accelerate value and benefits realisation. And with Deloitte, the benefits of intelligent automation can now be applied to the most strategic customer-facing business processes at clients. The result is fast business outcomes giving clients renewed agility to address real-world challenges and opportunities at any scale."

Enterprise leaders are now embracing automation to solve their hardest problems, as Balaji notes, and are leveraging the power of RPA, machine learning and artificial intelligence to infuse hyperautomation tools across the enterprise. The true power of automation is finally being realised and customers across the globe are racing to ensure they are at the forefront of the automation revolution.

Speaking to Adam Burden, technology lead at **Accenture**, it seems that customers are turning to intelligent automation with a new set of priorities.

"While automation itself is nothing new, we've seen automation transition from only being about efficiency and cost cutting, to using automation to unlock business value, better decision-making, and create entirely new growth opportunities." Burden tells ERP Today, "Automation powered by AI can help get new products and services to market faster, deliver a better experience for customers and employees and even enable entry into previously unprofitable business areas."

Straight line to value
One of the biggest challenges with any technology investment is to demonstrate value. While a five-year ERP modernisation programme may set the foundations for broader transformation, it can be challenging to draw a straight line to the benefits and business outcomes. Automation presents a completely different proposi-

> **The benefits of intelligent automation can now be applied to the most strategic customer-facing business processes**
>
> **Sam Balaji**
> Global consulting leader at Deloitte

tion to most IT projects because the time to value and the ability to identify the benefit is much clearer cut. At a time when horizons are measured in weeks rather than years, being able to identify an opportunity and implement the tech to execute it has never been more important.

Steve Starace, senior vice president at **CGI**, remarks on growing customer expectations, saying: "The timeframe for which clients are looking for a return has shrunk. Whether that return is cost efficiencies or whether that return is bringing things to market more quickly. At CGI, we have developed **CGI Accel360**, a fully-managed service for hyperautomation that enables clients to gain all the benefits from automation technology without managing the platform. It delivers automation-as-a-service with industry-specific use cases built in and ac-

celerators to demonstrate the value. Once the client can start to connect the dots, other use cases develop and we are able to clearly demonstrate the return on investment."

Moreover, prioritising investments that deliver rapid time to value is only an increasing imperative for customers, as Simon Constance, a partner at **EY**, one of UiPath's biggest customers globally, also notes.

"Tools like automation very often rise to the top of the priority list because customers can't wait three or five years for a technology investment to mature," he says. "Many customers are in a constant state of flux and transformation where they are continually innovating and bringing new channels to market. That type of change drives your priorities and means timelines are much shorter for technology to deliver value. Automation tools can reduce

costs, create efficiencies and deliver value in very short timeframes and that is what customers need right now."

Customer confidence
Customers as diverse as **Uber**, **Xerox**, **Asahi** and EY are using UiPath's automation platform to dramatically transform how processes are executed and work flows across the organisation. Hyperautomation is landing in manufacturing companies, retailers and professional services companies alike to streamline and optimise end-to-end operations. Through small proof of concept projects to global rollouts, automation tools are being used to transform our long-held notion of work and free up human capacity to focus on higher value tasks.

The technology itself has also matured considerably and can now provide a secure and robust solution,

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Automation powered by AI can help get new products and services to market faster and deliver a better experience for customers

Adam Burden
Technology lead at Accenture

We like to think big and we share UiPath's vision for how automation can be used to solve our joint clients' most challenging problems

Steve Starace
Senior vice president at CGI

even in complex and regulated industries such as insurance and financial services. Old concerns centered on trust have been quashed and many of the world's foremost brands are embracing automation for increasingly sophisticated deployments.

A great example of robust scalability has taken place within EY itself. As Constance tells us, EY has embedded automation at the heart of its audit business to drive significant cost savings and process improvements.

"If you ever wondered if process mining and automation scales take a look at how EY has leveraged one of the world's largest deployments of unattended automations," he says. "We are innovating on a huge scale in a very robust, regulated environment and demonstrating first-hand to our customers what's possible."

That type of partnership, which drives co-innovation and delivers scalable proof points for customers, is creating a vibrant ecosystem around the UiPath portfolio. Its global partners are building deep capabilities and coupling their industry experience with UiPath's evolving capabilities to build the next generation of solutions for customers. CGI is one such partner that has extended its relationship with UiPath to form a strategic partnership. Starace tells ERP Today that the partnership goes deeper than simply selling products into customers – it's based on co-innovation and is delivering significant value for customers.

"First of all, there's a really good cultural fit between UiPath and CGI and we have the same objectives in mind. We like to think big and we share UiPath's vision for how automation can be used to solve our joint clients' most challenging problems. We came together to build a go-to-market strategy that coupled our deep domain expertise with the market-leading automation platform, and those two things together really have created a one plus one equals three scenario for clients."

Maturity, myths, and human-centric approach

While the concept of an autonomous enterprise that is optimised at every level with intelligent automation, freeing humans completely of burdensome tasks, sounds like a panacea, the reality is not so straightforward. Customers will be at different stages of their transformation journeys and not all enterprises will be sufficiently mature to embrace automation.

Girish Pai, global head of intelligent automation at **Cognizant**, tells us: "Enterprise-wide adoption is a challenge. You are transforming how an organisation operates, how people work, and what the workplace will look like. It requires integrating across an often complex ecosystem of processes and technology while ensuring a seamless experience."

Here, Burden also adds: "While the promise of intelligent automation is vast, for many companies broad adoption is considerably easier said than done. It needs to be a holistic effort so that intelligent automation and the work of IT supports the overall goals of the business strategy. We see a trend where businesses are moving from point solutions to broader automation that is aligned with the business strategy, leveraging AI capabilities to drive business value and improve customer, employee and business partner experiences. A key challenge for automation continues to be the adoption level, for which automation should be supported by a comprehensive change management programme. It requires changes in the mindset of an organisation, and you need to take your people along with you on the journey. This requires putting the right reskilling and upskilling programmes in place so that the employees understand, support, and feel the automation journey is done with them and not to them."

Recognising the challenges of integrating automation technology at every level of an organisation, Balaji points to Deloitte's responsibility to showcase the possibilities and benefits of an integrated automation strategy. "Technology implementation is often very federated in an organisation," he says. "It's up to us at Deloitte to showcase the art of the possible in terms of an integrated approach to the various technologies deployed and to ensure a cohesive approach to solving business problems. As with most technologies, one of the challenges for automation programmes can be having the right internal resources to build the infrastructure and manage

We are innovating on a huge scale in a very robust, regulated environment and demonstrating first-hand to our customers what's possible

Simon Constance
Partner at EY

the programme. In this case, we have managed-services offerings powered by UiPath and other technologies to allow businesses to launch an automation programme that mitigates risks and resource hurdles. Security concerns are also common as the industry moves to cloud, and because automation is intended to require little human touch. At Deloitte, we like to emphasise 'humans with machines', as automation removes the burden of repetitive tasks but doesn't replace human oversight or input. UiPath is well known for its security configurations and our UiPath specialists know how to configure solutions that meet the needs of our clients."

This human-centred approach to automation is crucial to the effectiveness of any automation project, Burden agrees, but he also points to the outdated automation myths we need to dispel. "We encourage clients to look at automation with a people-first mindset," he says. "The best automation solutions work alongside people, leveraging human strengths and are supported by investments in skills, experience, organisation, and culture. We genuinely feel that the best solutions in this space work alongside people to 'automate the ordinary and unleash the extraordinary'. We observe that many companies deploy technology in pockets of their organisations, without a vision for scaling the innovation enterprise-wide or sharing learnings across projects. Teams can also run into difficulties scaling if they don't vet opportunities wisely or narrow their

focus too quickly. Besides scaling, a common myth to automation adoption is that a shortage of talent exists or that customers prefer to work with real people."

How will intelligent automation evolve in the short term?
RPA's evolution from simple use case technology into enterprise-wide automation enabler has presented customers with unprecedented opportunities. The technology itself poses many questions for enterprise leaders to evaluate and it is important to consider that not every business or every process will be sufficiently mature to adopt full-scale hyperautomation. Ensuring that people are at the centre of the automation conversation may sound counterintuitive but an approach

shape the conversation as well. As businesses pivot and morph to new business models to meet market demands, we are always exploring new use cases and working to bring joint UiPath solutions to market, particularly to the finance and human capital spaces in the short term.

Summarising Accenture's thoughts on the market, Burden tells us that: "Automation will continue to evolve from a cost takeout play to an enabler of enterprise strategy at a rapid pace over the short term." He goes on to say: "Businesses will continue to push further into end-end process automation inspired by the success they have seen within IT and in call centres. Because of the ongoing talent shortage, we expect to see more attention on discovery of processes ripe for automation and the use of

RPA's evolution from simple use case technology into enterprise-wide automation enabler has presented customers with unprecedented opportunities

that does not consider how digital automations and humans coexist is flawed and unlikely to deliver the outcome a business hopes for. That said, there are very few types of organisation that would not benefit from automation and the current macroeconomics are likely to drive an increased premium on efficiencies and agility.

Balaji from Deloitte concludes his analysis of the opportunity by telling ERP Today: "With current market conditions, several unknowns and a potential recession, automation will become a key driver of cost reduction for businesses. Automation can drive efficiency as well as deliver rapid business insights, from which businesses can make critical decisions. Understanding the ecosystem of options and how to incorporate AI, business process management, and other technologies will certainly

solutions that work alongside people, enabling them to perform higher order functions than they would otherwise be able to. "

For the companies which adopt the correct approach, the potential of automation is seemingly boundless. Wrapping up the conversation, Pai from Cognizant highlights this opportunity: "We see this space continuing to accelerate and the need to anchor to outcomes being only more critical," he says. "The focus is shifting from just efficiencies to experiences. Being innovative is more than a mindset, but also about challenging ourselves to think differently, asking not just why, but how, and thinking about how we can improve and elevate the customer journey. Automation will be a part of how we work. This is a space with unlimited opportunities and will be a game changer for companies who get it right."

This is a space with unlimited opportunities and will be a game changer for companies who get it right

Girish Pai
Global head of intelligent automation at Cognizant

A new sunrise, Asahi Europe & International pours clearer brew

Brewing golden ale is an elemental activity. As such, it requires superior ingredients, special environmental conditions and perfected processes. Running a business to support such exacting conditions requires an equal level of flawless systematic operational excellence.

As a business built on a reputation for consistent product quality, **Asahi** Europe & International (AEI) recognised the challenges faced when using non-integrated systems, legacy application and continuously increasing manual and repeating task lists. This meant that the majority of people's time at Asahi was being spent on repetitive tasks performed on multiple platforms at high transaction volume.

Consequently, people were distracted and prevented from spending time on skilled and strategic activities. Unsurprisingly, these lack of efficiencies were also having an impact on the top-line. AEI decided to establish an internal automation and innovation digital factory, or automation factory, to address these issues and deliver a coherent operation.

System slops and spillage

Running a core cloud estate and IT stack on **Microsoft Azure**, AEI decided to adopt **UiPath** as an automation solution and build an intelligent automation platform in AEI to bridge the digital gaps in business processes.

With some previous experience and research studies, UiPath was found to be more suitable due to its ease of development and deployment.

Also, the strategic alignment and overall approach designed together with **EY** and UiPath enabled AEI to innovate and disrupt existing process flows. AEI also found that developing on the UiPath platform helped fuel its speed to market in terms of its innovations and process digitisations.

A recent internal audit has confirmed both UiPath and overall execution of the programme is meeting the audit and compliance standards. Analysis confirmed the solution is secure and compliant and that the digital factory's status can be defined as 'best in class'. AEI has now put in place an iterative process to drive continuous improvement via digitisation and ensure future initiatives follow the same profile.

One team, one objective

AEI was very clear that technology should be an enabler to drive the business forward, not a substitute for broken or cumbersome processes. The selection of UiPath along with EY to help deliver the digitisation agenda, was based not just on technical credentials, but also on both organisation's ability to collaborate with AEI's existing team.

The aim was to select both a technology provider and a strategic business transformation partner that would work in sync with AEI's internal stakeholders and drive a 'one team, one objective' approach. Such was the success of this effort that both EY and AEI IA CoE colleagues jointly worked to support each other and bet on each other's strengths in shaping the initiatives with internal stakeholders for execution and deployment.

Several innovation workshops on the 'art of the possible' were run, successfully engaging business stakeholders and bringing together the ecosystem of partners to 'create meaninful connection', an objective aligned to the company strategy. These ideation workshops have generated ideas for a centrally managed pipeline to convert them in to potential business cases/solutions by collaborating with business stakeholders and transformation team.

In full flow, AEI's digital programme aspired to shape a culture of innovation and digitisation across the organisation. A key benefit of the Automation Factory is its ability to track, measure and quantify benefits created inside each individual business case. It can also capture learnings post implementation to help embed an iterative mindset of continuous improvement.

Initially, AEI's selected business use cases that were assessed for their ability to realise maximum value. The objective here was simple - to drive awareness of automation advantage internally. AEI looked beyond tradi-

AEI's digital programme aspired to shape a culture of innovation and digitisation across the organisation. A key benefit of the Automation Factory is its ability to track, measure and quantity benefits created inside each individual business case

tional metrics such as cost reduction and avoidance, efficiency, compliance and the improvement of both customer and employee experience; the team also continuously tracked the increased operational capacity released back into the business as a result of digitisation with finance and business case owners.

It's the weekend, let's automate

Projects were selected in batches and a release plan to minimise disruption was created in close collaboration with impacted stakeholders across AEI, EY and UiPath. This was a success as no major disruption linked to the digitisation was reported during the 15-month programme. Any upgrades to the platform or security patches were carefully planned over weekends to avoid gaps in the business processes.

There has now been a shift in overall mindset change within AEI towards innovation, digitisation and automation. People have been more open and curious, asking questions like, 'What can we automate next?'. Users of automations have positively noted the new ability to get better quality data in real-time, which has led people to be more critical and challenging of pre-existing practices and processes.

Staff have positively noted the new ability to get better quality data in real-time, which has led people to be more critical and challenging of pre-existing practices and processes

The working mechanics of the arrangement between AEI, EY and UiPath is a template for the future. The full set up includes services to cover ideation or art of the possible, design, build and test, run and maintenance processes. The AEI team says for any automation or digital factory model to be effective it must align with overall business goals – and this has been done both collaboratively and successfully.

Digital by default

Looking immediately forward, AEI has had to work out how its business will positively capitalise upon the new additional capacity released due to the use of UiPath's automation platform. AEI CoE continues to work to ensure its digital solution approach would become a default, 'digital first'.

The automation factory has now developed an iterative cycle of learning. EY brought in a wealth of expertise and AEI head of innovation, automation and analytics, Bhuvan Panwar, has commented that with EY they had the momentum from day one, as AEI didn't have to focus on tech skills but focus on defining the exam question or problem statement and internal change management.

Digitisation would look to create empowerment and capacity for AEI colleagues to take more ownership and drive faster decision-making across processes and functions. Primarily, this is possible thanks to the support and backing of the company's own leadership. AEI leadership believes that to truly unlock the value of digitisation, it needs to empower colleagues at all levels to make decisions and to create meaningful connections.

Perhaps it's no surprise to learn that Asahi (朝日, 旭, or あさひ) means morning sunrise sunlight in Japanese, and AEI is certainly welcoming a new dawn in digitisation with their strategic partners.

Process automation is a people-first concept

Joshua Greenbaum

Principal, Enterprise Applications Consulting

Extracting greater functionality and productivity out of existing enterprise software landscapes has always been an important goal for IT and line of business users alike. As business priorities change and new opportunities or threats arise, there's an almost natural reflex on the part of most companies to look to their enterprise software for help.

One of the fastest and most cost-effective ways to achieve these business objectives is to update and automate existing processes that are inefficient, incomplete, or poorly designed. Importantly, attaining the most impactful result requires focussing not just on small, department-wide improvements. The most valuable business outcomes usually require the automation of important end-to-end processes that have historically been hampered by the silos of technology that are endemic to enterprises large and small. These silos have locked ERP, HCM, CRM, supply chain and other important functions into disconnected process islands, and the resulting accumulation of inefficiency and technical debt has made the automation of key enterprise processes more difficult, time-consuming, and ineffective than it should be.

The opportunity to use the different forms of automation to improve productivity and leverage existing enterprise software solutions has propelled a who's who of vendors to saturate the market with an array of solutions. Automation tools can be found under the rubrics of robotic process automation (RPA), workflow automation, hyperautomation, intelligent automation and process mining – the latter being an important tool for discovering where process improvements of all kinds can be best applied.

The problem with choosing the right approach is exacerbated by the fact that all flavours of automation can be used separately to achieve significant results: a single **UiPath** customer is seeing savings of €80m over a two-year period using the vendor's intelligent automation tools, while other vendors including **ServiceNow** and **SAP Signavio** can make equally impressive claims. Separating the mining from the process and the workflow can make sense for some customers, but usually the smartest money is invested in a platform that can identify the opportunities for automation and also test and execute them.

While the outcomes from most automation exercises start with a common set of goals – create or improve highly productive end-to-end processes, span functional silos, and deliver innovative user experiences – the options highlight a problem for prospective customers: how can an enterprise looking for a particular business outcome choose between an approach based on workflow automation as opposed to one based on process automation or process mining? Or is that even the right question to ask?

It turns out the common denominator for success is rarely the tool or its approach, all of which are relatively adept at meeting the challenge. What's imperative, and is arguably the hardest part of the journey to success, is careful attention to the change management side of the journey. In other words, achieving the enterprise-wide automation results starts as a people problem, independent of the tool and its approach. Without a doubt the tool is important and these and many other solutions have an excellent track record. But

that choice can only succeed if the people problems are sorted out first.

The people-first approach
The first common denominator for success is having permission to initiate the project in the first place. Siloed software creates fiefdoms – ERP teams don't necessarily work closely with the teams running CRM, HR, finance or the like – and these federated groups closely guard their data models, customised functionality and processes from each other.
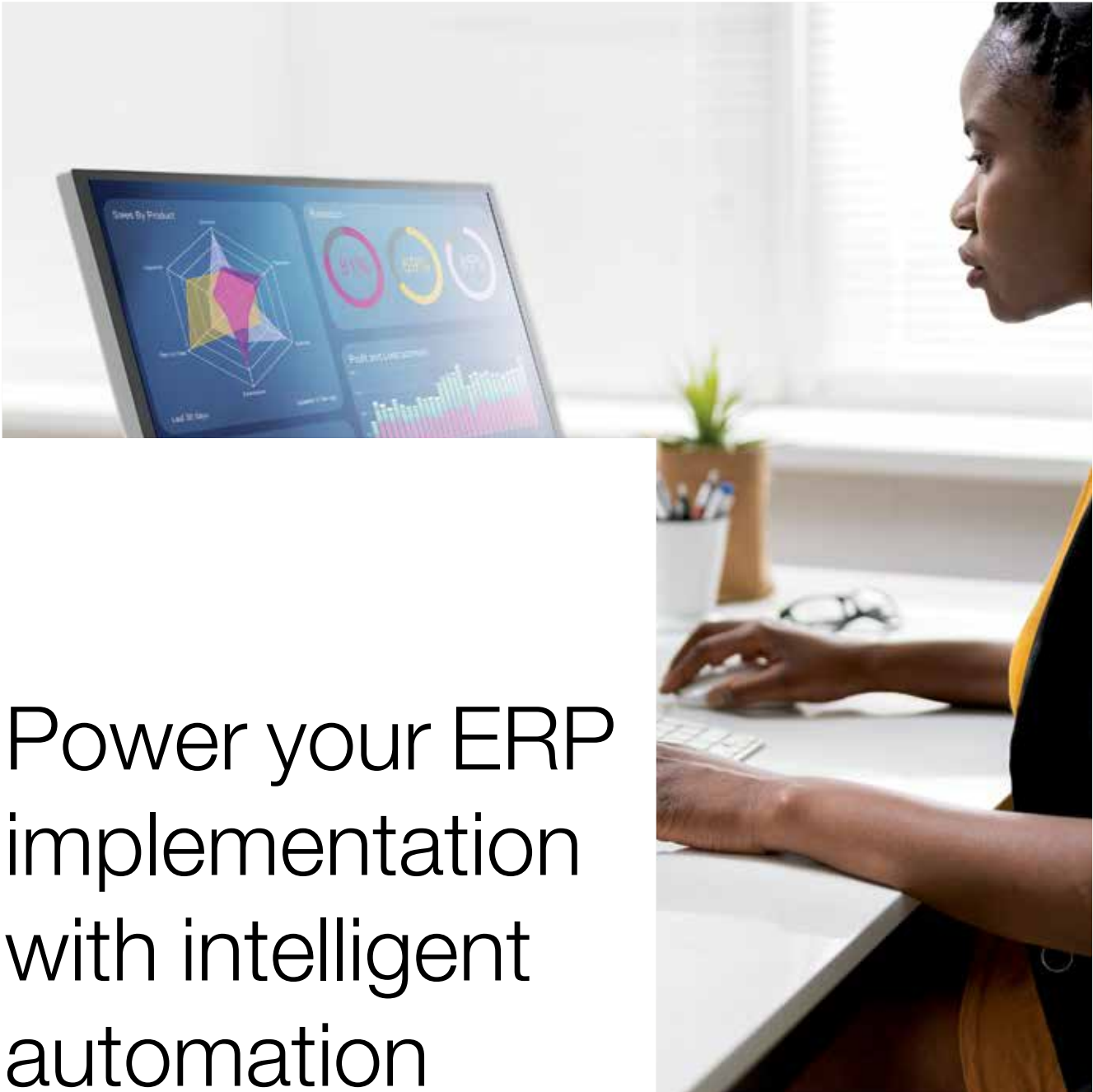
That close-mindedness can vastly limit outcomes. Successful end-to-end process automation need consensus among different stakeholders in order to come up with the unified data models, KPIs, functions, and user experiences needed to move the productivity needle into the black. And in most companies that consensus requires a leader who can bring the disparate parties together and get them working towards a common goal.

Finding and empowering this leader turns out to be much harder than it sounds, and that means the

silo-buster often needs executive sponsorship to build consensus - and knock heads if necessary. The ideal executive sponsor is of course the CEO, but in reality the CFO or CIO is most likely to take this charge, until we start to see CAO (chief automation officers) sitting at the boardroom table.

The second common denominator is the empowerment of the subject matter expert, or SME. Whether it's an existing process that's poorly automated or a net-new process that will plug an important functional gap, there's typically an SME who knows the inner workings of the process, warts and all. That individual, usually not in the IT department and often not asked to contribute until it's almost too late, needs to weigh in as early as possible in order for the end result to offer the appropriate level of automation and be based on a user experience that engages instead of enrages. In the majority of cases, this in-house expertise can tip the project towards success. This is why these tools all have the ability to capture this expertise and assist in the translation of that knowledge to the new application.

Companies that embark on silo-busting and the creation of automated, end-to-end processes need to set themselves up for success by getting the people side organised first. Without a leader with permission to make the big moves necessary, and without the SME who knows what innovations in productivity, automation and user experience should look like, an automation project is at risk of running aground regardless of the technology used. The goal of leveraging existing enterprise software to achieve new levels of productivity and innovation is one that makes sense for all companies. To do so at scale, and to do it again and again, requires a people-first approach. Without this method the potential risk for failure can be high, something no company can afford in good times or bad.

Power your ERP implementation with intelligent automation

ERP systems are at the heart of running an organization's business. As enterprises seek to accelerate their digital transformation, these systems need to be optimized to achieve advanced capabilities and productivity gains.

CGI is here to help. Through our technology and industry expertise and end-to-end services, we offer CGI Accel360—a subscription-based managed services solution built on the UiPath Business Automation Platform.

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Robot resilience

Testing our way to sweeter scalability

Automation directly translates to business innovation, growth and scale. The very rationale and raison d'etre behind automation is the need to capture, coalesce and commoditise workplace tasks and processes in order to operate more efficiently and to innovate with greater scope.

But as with all digital and cloud-era technologies, automation and the deployment of robotic process automation (RPA) comes with duties and responsibilities. No single automation project should happen in a disconnected silo, no automation should happen without strategic oversight of a complete IT stack or system, but perhaps most of all, no automation should happen without testing.

If there is one single reason cloud instances fail to operate at their potential maximum efficiency levels, it is the presence of misconfiguration. Given the breadth of compute environment settings, programming languages, application development methodologies, networking protocols and hyperscaler instance nuances out there, cloud misconfiguration is usually a when and not if scenario.

For RPA bots to traverse this space, work with it effectively and be able to perform the functions they are brought into life for, they must be subject to effective test management controls in order to ensure their efficacy and robustness. We know that scaling automation enables prime mover advantage across industries. Further here, we also recognise the fact that organisations are now shifting from regarding automation 'simply' as an IT tool, to now embracing it as a way of operating and a route to innovating.

But, for every action (in this case, the drive to scale and diversify) there is an equal and opposite reaction. This means that when automations scale, they can become fragile and break if they are not tested from ground zero. Software robots working to deliver automations as part of an RPA initiative can fail to function properly (or break completely) for reasons not dissimilar to our list of cloud misconfiguration usual suspects above.

Alterations and switches to computing environments can happen at any number of levels. Changes may be brought about by a new software application release, or a simple change of system settings. Failure to test software robots on a continual basis in light of the wider dynamic nature of modern IT stacks is not a progressive strategy for success.

Ruggedised robot resilience
What has become clear throughout the still-developing years of RPA automation is a need for testing itself to be afforded an automation advantage. Achieving software robot resiliency is possible if automations are tested every time the applications they interact with are changed, augmented, enhanced or indeed decommissioned.

This is not testing for the sake of it based upon some scripted schedule of events that an IT system may be programmed to follow on a daily or weekly basis. This is proactive testing with a view to cross-enterprise collaboration designed to enable a consistent approach to create and deploy automations.

According to product marketing lead Matt Holitza, "UiPath Test Suite combines the world's leading Robotic Process Automation technology with best-of-breed testing capabilities to sustainably accelerate scaling through proactive testing, Test Suite benefits practitioners who create automations and stakeholders who depend on automations, including transformation leaders, business users, customers, and partners.

Data-driven deployment
In terms of working function, this is taking RPA testing to a level where it is data-driven to ensure software robots can handle different data variations before they are deployed to production. Data variations can manifest themselves in terms of different ranges, data value types, structures, classifications or some other core value factor - understanding that the shape of information may have changed is the key.

By moving to a testing-empowered RPA deployment through the use of suite and platform-based tools, organisations are able to centralise their approach to governance by using a common approach. As automations are then shared between the test and development team and the RPA operations team, a natural groundswell of momentum developers and a virtuous circle of better bots with fewer defects and potential fragilities results.

Automation is no discretionary line item and testing is no disposable hand sanitiser. Automate it, build it, test it - now, wash your hands.

Achieving software robot resiliency is possible if automations are tested

Platform evolution
The path to the fully automated enterprise

Software evolves. By its core nature, software is inherently subject to iteration, augmentation and extension. The onward development of any software application, component, suite or platform is a process of dynamic forward-looking evolution as one generation or version release typically builds on top of the previous one.

Often as a result of changing user needs, requirements and expectations, occasionally driven by a change in hardware form factors and sometimes driven by governance factors and wider market issues, software evolves all the time.

A new pace of evolution
Over the last half-century or so, platform-level technologies have evolved impressively, but at a relatively consistent pace. Across the business-to-business software market, the cadence of innovation and development in enterprise resource planning does not differ markedly from that seen in customer relationship management, field sales management or perhaps supply chain management.

In the face of that more 'standard' cycle of development stands enterprise automation fuelled by a perfect storm of robotic process automation, cloud computing maturity, a quantum leap in artificial intelligence and machine learning and a holistically embraced approach to data-driven business witnessed across every industry vertical, enterprise automation is both of the time and of the moment.

As both a platform pioneer and a maverick mover in the market, **UiPath** has come to the fore with an approach to enterprise automation innovation that has left would-be players in this market scratching their heads. In something of a made-for-Hollywood tale of tech inspiration and innovation, the company was founded back in 2005 in Bucharest, Romania, by Daniel Dines and Marius Tîrcă.

Now with headquarters across Europe, the Americas and Asia-Pac, UiPath was ranked by the **Financial Times** in 2020 as one of America's fastest-growing companies and the organisation continues to gain plaudits in areas such as the **Forbes** Cloud 100 list and beyond. Staying true to its roots and keeping an expanded research and development facility in Romania, today UiPath is pushing the boundaries for enterprise automation not just into automation, but higher and wider into hyperauto-

From screen scraping to semantics
Starting from its early beginnings in screen scraping technology back in 2005, UiPath spent much of its first half-decade developing a platform for user interface (UI) automation functions, which surfaced in full during 2013. **Studio Orchestrator Robots** followed in 2017, a technology built to oversee the life of unattended autonomous robots that don't require human supervision to execute jobs. Orchestrator is the central hub for unattended automation as it allows launching unattended execution on the spot, or by setting it up in a preplanned manner with triggers.

By expanding the UiPath platform with 2018-2019 developments including optical character recognition, AI computer vision and the **UiPath AI Center**, the company has elevated its overall technology proposition in an ever-evolving cycle. Across 2019-2020, UiPath aug-

UiPath is pushing the boundaries for enterprise automation not just into automation, but higher and wider into hyperautomation

mation, or to afford this concept its hashtag, this is #beyondRPA.

In terms of operational mechanics, hyperautomation describes UiPath's vision for software robots implemented around functions spanning task mining, process mining, test automation, document understanding, human-in-the-loop, UiPath apps and all enabled and enhanced by the use of the **UiPath Assistant**.

mented its platform with additional process mining capabilities and the **UiPath StudioX Assistant**, a set of functions designed to offer simplified coding that allows workers to build their own robots to simplify their own workflows.

During this time, the company also added **UiPath Document Understanding**, software that extracts, interprets and processes data from

PDFs, images, handwriting and other communication mining. There's also, UiPath communications cining, a technology which provides context and AI decision-making to customer communications and workflows, such as emails, chat sessions and audio.

Coming full circle to 2022 into the era of enterprise automation, UiPath has expanded upon its mission to enable a robot for every person through the development of major technology breakthroughs, such as semantic automation, where robots are able to deal with interfaces and documents more like a human, with a higher level of understanding. As we stand today, UiPath is now more than an automation solution or an RPA toolkit - the company now presents a fully-fledged business automation platform.

With citizen development and low-code software approaches guaranteed to form key functions in the UiPath of 2022 and beyond, the company is now also working to expand its communications mining prowess. Tracing its developmental DNA back to task mining and process mining, UiPath explains communications mining as unstructured communications analysis carried out to find data points that enable automation opportunities which ultimately become workflow accelerators.

The fully automated enterprise

Tomorrow is always an interesting day for UiPath, a truth that the business consistently attests to. The company has moved to consolidate technologies and toolsets from perhaps half a dozen IT disciplines, all for the better. Customers are reporting returns of thousands and millions of US dollars and the firm anticipates having billion-dollar-value return on investment conversations in the near future.

Now committed to continue evolving, UiPath has pledged to further widen its approach to helping organisations in every industry to reduce the treadmill of growing applications that they need to maintain, manage and operate every year. While not everything is yet a certainty in the modern age of digital business, automation always reduces the corporate workload, so its place in the modern IT stack is guaranteed.

As co-CEO Daniel Dines has stated openly, on the journey to the fully automated enterprise, the future of work is still very much people-centric, creative, social. Perhaps most of all - and with the shadow of the last three years of disruption perhaps now clearing - the future of work is all about being able to cope with change and the unexpected on a human level, robots included.

Generali puts automation first

(so they can put customers first)

They're on the right path with the UiPath Business Automation Platform.

Generali has saved more than €80 million in the first three years alone, and expects another €125 million in annual savings. Automation is insurance for insurance companies. For Generali, it's freeing employees to think and create and help their customers take risks that make the world better.

Dialling into communications mining

It's often said that email is a 'flawed system that has never been bettered', which may explain why so many of us spend so much time chained to our email client software applications and alert systems.

Depending on the industry and role, the average employee may send and receive somewhere between 100 to 200 emails per day. Add that burden to newer communications channels that exist across chat, instant messaging, voice and 'tickets' stemming from enterprise software platforms and we get inevitable overload, incoherence and chatter.

But there's a mismatch here. We now live in an age of autonomous intelligence where automation is no discretionary line item in any strategically built IT stack architecture. Shouldn't we be able to use machine-based compute and analytics engines to communicate better, faster and with less white noise?

The answer is yes and the solution is communications mining.

Say hello to communications mining

A close cousin to process mining and task mining, communications mining is the act of analysing unstructured communications to discover 'data points' which logically belong to automation opportunities that can be created to form process and workflow accelerators.

As a base layer, communications mining makes use of technologies including optical character recognition, document capture and intelligent document processing. Combining text-based communications mining with voice requires the use of natural language processing technology to digitise speech into written form so that all communications channels can be corralled and coalesced.

When we have a central pool of communications streams to work with, we are then able to look for patterns that relate to processes and start to build a picture of how the business is being run.

As communications mining starts to paint the digital picture of what's happening behind human workflows, it enables us to see where the most company resources are being used to achieve different tasks.

Machine learning learning

Training a Machine Learning system to be able to understand the contextual and semantic meaning related to each element being analysed in a communications mining process is an ongoing and continual process. Often referred to as ML in a process of active learning as part of an artificial intelligence engine, communications mining builds an intelligence 'model' that can be graded for its ability to predict as it grows and develops.

Best thought of as a cumulatively applied advantage, communications mining can shoulder the heavy lifting in an employee's daily communication stream. Sometimes also referred to as conversational data intelligence, at its crux, communications mining enables us to take unstructured information (at various labels of unstructuredness) as we convert, transform and manage it into a machine-readable form.

Extremely well-suited to application use cases across ERP, CRM, HCM and other core enterprise software platform use cases, communications mining uses both sentiment and semantic intent analytics to extract meaning from messages and understand what part of the total conversation process they belong to inside any given workflow.

As communications mining develops to become progressively better trained over time, it can be applied to analyse human interactions that straddle increasingly mission-critical parts of an organisation's operational fabric. Prudently applied, communications mining can help a business to pinpoint inefficiencies, to identify bottlenecks and to exploit core efficiencies and competencies and bring them to the fore for commercial advantage.

As part of wider robotic process automation strategy, communications mining works alongside task mining and higher-level process mining to enable an organisation to create bots that will further drive efficiency and make automation not just a way operating, but also a way of innovating across the business.

Intelligent Automation
just got smarter

Copy that: Xerox automates on UiPath to develop RPA-as-a-Service

A key part of workplace experiences for employees in almost every industry over the last century, **Xerox** has now developed a new business model based upon a wide-ranging embrace of **UiPath**'s automation platform.

By streamlining and simplifying its internal processes with UiPath automation, the Rochester, New York-founded company is now driving customer success forwards with RPA-as-a-Service as key element in its operational base.

With a history in the photographic paper and equipment business, Xerox is of course known for launching the first photocopier in 1959. With innovation and reinvention cast into its DNA, the company is today known as a business solutions and services provider.

Automation inside
Stemming from an initial need to automate processes across its supply chain, contact centre, human resources and finance departments, Xerox knew it could extend its automation footprint further with UiPath. That extension was focussed on the company's customer invoicing process.

Xerox chief digital officer Steve Miller and team used the UiPath platform to eradicate the process of manual invoice creation altogether.

After its initial success with UiPath across these mission-critical business areas, Xerox hosted a series of automation bootcamps that helped to raise the profile of automation within the company. Putting out a call to action for innovators right across the business to get involved, Xerox also established a Global Automation Center of Excellence to foster an environment for learning and experimenting with automation.

Citizen automation developers
Now operating a vibrant citizen developer community focussed on automation advantage, Xerox encourages subject matter experts to work with the team to expand upon best practices. The direct result of this action has been the development of more complex automations across the business into areas including customer service and sales enablement.

In these environments, software robots are providing on-demand reports to Xerox account and service delivery managers related to equipment in the field. This enables rapidly actioned insightful conversations with customers about billing and renewals. Robots also handle the customer supply replenishment process and service desk integrations.

In a virtuous circle of development, Xerox customers noticed the company becoming more agile through its use of UiPath automation. Naturally, they asked how Xerox could help them to work better, smarter and faster. This was a seminal watershed moment. With a growing number of

much experience with implementing and deploying complex application environments within Xerox gave the organisation the confidence to bring its own solution offering to market. A total process that happened in a matter of months.

A library of software robots
Xerox's library of software robots has been converted into a catalogue, enabling its customers to quickly and easily explore potential automation opportunities within their own business. Applications span from claims automation and deal pricing in finance through to email campaigns in marketing and stock tracking in customer service. Operations, sales, admin, legal, and support professionals are also well-served.

If customers aren't able to find what they need from within the existing list, Xerox can create new, custom bots tailored to the customer's specific requirements. The resulting offering from Xerox is an end-to-end automation solution for customers at every level.

> **The direct result of this action has been the development of more complex automations across the business into areas including customer service and sales enablement.**

automation-related requests coming in from its large enterprise and small and medium-sized business customers, Xerox moved ahead with a commercial automation practice of its own.

Now a flourishing line of business in and of itself, Xerox RPA-as-a-Service has been transformational for the company. Having gained so

On the road ahead, UiPath and Xerox are working in unison to leverage Xerox's own deep expertise in AI gained through its Palo Alto research centre. The organisations are taking advantage of the advanced AI features available in the UiPath Platform to embrace the new 'definition of possible' for Xerox and its customers.

Uber hails 5-star infrastructure built on UiPath RPA

Call it a cab, call it ride-share, call it ride-hailing or call it Uber. The result is mostly the same as the customer gets from A to B and also sometimes C via an application user interface. **Uber** has changed the way we navigate around our planet since its arrival just over a decade ago.

Over the last three years, Uber has been working with **Accenture** to automate business processes using the **UiPath** platform. With continued expansion as its core goal, Uber has chosen automation as its proven route to streamline its business, coordinate global operations and ensure regulatory compliance.

Due to its phenomenal growth, Uber has to continually architect a complex transformation strategy built on automation, all on a constantly changing digital infrastructure.

With help from Accenture, Uber has developed a global strategy built around UiPath's platform-based approach to robotic process automation (RPA) in order to keep operations in sync.

Automation for normalisation

According to global head of intelligent automation at Uber, Chad Aronson, the company had a direct and defined need for automation to reduce the need for additional hiring and to normalise global operations.

With invoice processing procedures markedly differentiated between different countries, Uber needed to apply a normalisation factor through automation to reduce administration and provide a normalised high-level view for management. This same process would also help Uber with regulatory compliance, making sure that operations were a closed process that con-

forms to company standards.

As a young business with an inherently flat organisational structure featuring multiple autonomous decision-makers, Accenture had a special challenge when faced with automating Uber's operations. Because a centralised approach to RPA deployment in this environment was unlikely to work, Accenture needed to find a way to coordinate multiple RPA processes.

Value-first automation

Accenture used and still uses a 'value-first' approach to RPA development i.e. one where the value of RPA must be sold to stakeholders with a clearly defined ROI. Extremely dynamic and fluid from the start, Uber RPA stakeholders are in constant communication with developers, making changes on the fly, so tight control and management was needed from the start.

The team also approached this process with a different cadence. Where previous RPA projects may have taken a year or two to establish and come to life, the new RPA team worked to

tomation platform. The team is continually adding new capabilities such as chatbots, optical character recognition (OCR) and machine learning.

The team has developed dashboards for health monitoring and triage to identify problems before they become trouble tickets. This has empowered the operations and support team to identify and correct problems as they arise.

Automation as an asset

Today, Uber says that RPA has become an asset across its organisation. Automated business processes have had a significant impact on Uber's operations and revenue.

In London, for example, Uber Freight was at risk of losing its licence to operate because it was scaling so fast, it had trouble tracking safety procedures. It took six weeks to build a bot to maintain start-to-finish tracking of all safety measures to satisfy regulators. If Uber had lost its freight licence in London, it would have experienced a loss of three-four percent of the company's total revenue.

> **Due to its phenomenal growth, Uber has to continually architect a complex transformation strategy built on automation, all on a constantly changing digital infrastructure.**
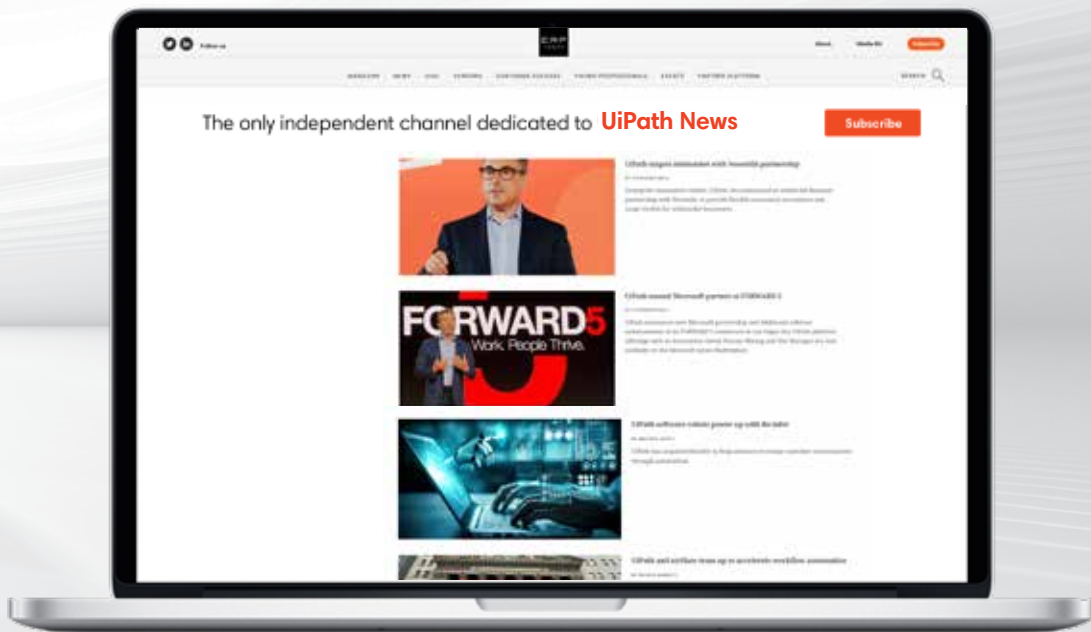
refresh its development pipeline every quarter to six months. That way, automation requests in the queue remain fresh and don't become obsolete before they are begun.

To ensure that bots continue to deliver value, Accenture has also adopted an incubation pod approach to develop advanced automation solutions using UiPath as the core au-

As part of software robot deployment, Uber has implemented rigorous security and governance protocols. They also have created dashboards and advanced automation to provide senior management with access to data for ROI analytics. If your next ride is with Uber, now you know your journey should be smoother with automation in the driving seat.
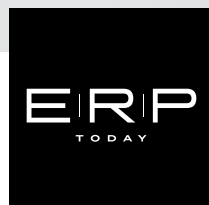
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