

# How Digitally Modern Processes Make Great Experiences

At a time when experiences are everything, automating processes for speed, intelligence and fluidity will constitute a significant competitive advantage.

PRODUCED IN PARTNERSHIP WITH



Center for  
The Future of Work

# Executive Summary

Businesses are in a time of great — and unanticipated — change. For the past several years, whether it was through analytics, artificial intelligence (AI), robotic process automation (RPA) or work-from-home capabilities, companies were already shifting quickly into new ways of getting process work done.

Then, in the wake of the prolonged pandemic, immediate priorities (e.g., “Everything that can go online, *must* go online!”) necessitated business interactions and transactions to be more connected, more simple — more “human.” Operating a business in these times of contagion has thrown into sharp relief the importance of establishing digital value chains between employees, partners, customers and suppliers that allow process work to happen effortlessly, flowing around any obstacles that get in the way and gaining intelligence over time.

The great challenge now is to hyperscale this type of “being digital” to the scores of processes that rely on the uber-critical systems, applications and operations at the heart of most big businesses — from processing insurance claims, to approving mortgages, to caring for patients, to growing personal wealth, to ordering a utility or new streaming service.

In short, the business climate of the 2020s has made it plain that without significant digital *process improvement*, there’s no way to deliver exceptional *experience improvement*.

Case in point: Digital natives like Lemonade and Shopify and large disruptors like Amazon, Google, Apple and Microsoft have all built great experiences with increasingly sophisticated digital technologies that erase frustrating interaction points from formerly cumbersome and lengthy processes. Behind the “great experience” are processes conditioned for simplicity — processes that are intelligent and seamless, and that minimize how work gets done in the background, to the point that the work becomes nearly invisible. With this deceptively simple formula, these experience leaders have been able to accelerate growth even through times of great change.



In short, the business climate of the 2020s has made it plain that without significant digital *process improvement*, there's no way to deliver exceptional *experience improvement*.

Offering frictionless processes is now a critical competitive necessity. It's become unsustainable for organizations to maintain expensive and sclerotic legacy silos, where antiquated approaches cause clunky, flawed, frustrating experiences.

Going forward, businesses need to rethink how work gets done so that the starts, stops, handoffs and run-arounds are eliminated (or at least made virtually unseen) for those interacting with them. In doing so, the notion of a "process" needs to be rewired into dynamic, fluid, always evolving, scalable, predictable and proactive human experiences that employees, partners and customers value most.

The following insights, gleaned from our research and conversations with organizations seeking to optimize operations work, underscore the strategic imperatives that are shaping the future of processes for the modern business.



## Key findings

- **Your unconnected, broken processes need integration — now.** By applying precision automation within the process value chain, businesses can significantly boost the impact of cost reduction and speed-to-market improvement while eliminating friction points.
- **Cumbersome, disconnected processes will increase your “experience debt.”** While journey-mapping exercises have yielded some insights, most initiatives don’t tie front-end experiences to the processes — and digital fabric — that deliver these experiences. This “experience debt” is a strategic risk that’s detrimental to effective outcomes. It needs to be remedied — and fast.
- **Intelligent process automation (IPA) and AI are powerful accelerants — and won’t require invasive surgery.** Applied astutely, IPA and AI can help break inertia quickly on existing processes and step-change quick wins by effectively reducing rote-and-repetitive process steps. This augments free time for imagination, empathy and critical thinking, making human interactions more meaningful.
- **The data generated by automation will radically improve process outcomes.** The yield of process data generated by intelligent automation is its most profound benefit. By using the next-generation technologies of IPA, companies can completely re-imagine customer, supplier and partner interactions to realize business process insights in far greater fidelity than has ever been possible before.
- **The future of work needs business operations in which processes are largely invisible.** Next-generation business process services and solutions like intelligent automation offer ways to reshape the way work gets done — today — so that yesterday’s antiquated approaches are history. Tomorrow’s successful digital business operations might even feel “process free” by being dynamic, frictionless and intuitive.

This report highlights the key impacts and attributes of digital process models that sharpen organizational agility, resilience and competitive fitness. By applying these new approaches, businesses can shift from legacy to digital thinking that delivers lasting business process change and experiences that resonate for customers, employees and ecosystem partners.





## Legacy debt leads to experience debt

For the last few decades, most Fortune 500 companies have grown — rapidly — through rampant merger and acquisition activities. All this M&A has left a growing assortment of rigid, disconnected, legacy-based systems and processes in place across scores of isolated functional silos. Even worse, it's led to choppy, uneven and downright bad customer experiences.

Breaking these monolithic, centralized legacy systems is challenging. It's also creating piles of process debt<sup>1</sup> that are dragging down the efficacy of business optimization investments — and even worse, leading to “experience debt.”

Meanwhile, while many organizations engage in journey-mapping exercises with an eye toward improving the customer experience, most initiatives stop at the user interface, and fail to tie the desired experiences to the processes that underpin them. While the journey map may look “clean,” underneath it there's a jumbled tangle of processes that can't support it.

Understanding the connection between “processes” and “experiences” — and getting these work links connected — is proving difficult for many companies. In recent research from Forrester (commissioned by Cognizant), more than one-third of respondents say their organization fails to view “experience” — whether that of customers, employees or partners — as part of an interconnected ecosystem (and over one-quarter say they still haven't fully mapped it out for their customer journeys).<sup>2</sup> At a time when nothing short of digital “everything” is required, this is a shocking admission that requires urgent attention.

Simply put, businesses will see diminishing returns from a baling-wired kludge of legacy processes daisy-chained together with software “robots.”



# Unpack the baggage of process debt and experience debt.

The question is, how can companies slice through the Gordian knot of bad interactions — for customers, partners, suppliers and employees alike? While it's easy for CEOs and senior executives to proclaim, "Legacy is poison," the hard part comes next: discarding the old way of doing things and unpacking the baggage of process debt and experience debt.

## From RPA to intelligent automation

As seen in our recent [Work Ahead research](#), automation has emerged as a key component of digital business process strategies over the last decade because of its ability to eliminate bottlenecks and boost process feedback as a force-multiplier to new business outcomes.<sup>3</sup> This is especially true of RPA, whose software automates rote-and-repetitive process work. As businesses from retailers to oil and gas giants rapidly deploy RPA as a mainstay of driving quick wins, this form of automation will remain a critical operational elixir.

Inside nearly all companies, business processes need to become digitally instrumented, analyzed and increasingly operated by software "robots" that complement humans to deliver an easier, simpler experience for users inside *and* outside the organization.

But RPA can also result in fragmented efforts that pile multiple, unwieldy automation scripts on top of each other or produce one-off automations that don't connect across tasks. For years, business process reengineering acolytes of Michael Hammer have reiterated his proclamation, "Don't automate. Obliterate!"<sup>4</sup> The mantra was to deliver more with less — way less. What's happened instead is that in service of faster, incremental improvements, shortcuts are sometimes taken — and without returning to rewire the work, the patches and workarounds become very expensive to sustain.

Over time, the tactical improvements gained from these labyrinthine processes simply decay. As cloud migration and data stacks become increasingly important, these process deficiencies become ever more exposed, resulting in so-called "process deflation" — the sudden devaluation of systems and processes that were previously relied on to get work done, due to the application of revolutionary digital innovations (or, existentially, the emergence of competitors whose processes are faster and more streamlined).<sup>5</sup>

Simply put, businesses will see diminishing returns from a baling-wired kludge of legacy processes daisy-chained together with software "robots."

Your organization may already be on this path, especially if it's already embarked on RPA initiatives. It's true that RPA can help break inertia and step-change quick wins, as it's sometimes speedier to add smart robots to an existing process, even if redundant, manual handoffs, interfaces or approvals persist.

However, while these types of initiatives can provide an [on-ramp to heightened efficiency and quality](#) thresholds for routine, stepwise work, they can only take you so far. Why? Because one of RPA's great advantages — that it can be overlaid onto existing systems — is also one of its hindrances: The processes it automates can only go as fast as the capabilities of the legacy systems that underpin them.<sup>6</sup>

## IPA delivers processes that think

To evolve beyond simply automating “swivel-chair” work (e.g., staff toggling between multiple systems and screens to achieve “last-mile” integration of data checking, inputting, searching or collating), businesses need to add an intelligence layer consisting of data, Internet of Things (IoT), machine learning (ML), platforms and state-of-the-art data architectures (what Forrester Research calls “automation fabric”).<sup>7</sup>

That’s where IPA comes in: by helping businesses stitch together disparate silos and legacy platforms with data feedback and applied intelligence for “processes that think” — so they can generate insights, see around corners, predict customer behavior, prevent unintended consequences and enable employees to focus on higher value work.

Businesses that do so pave the way for AI, machine learning and neural networks — effectively, processes that learn (and adapt) — freeing employees to achieve their full potential.

That’s why IPA in service of predictive analytics is the *real* endgame for process excellence. Any process with the potential for generating lots of data — particularly customer data but also on suppliers, partners and employees — should be automated with IPA for the sole purpose of collecting that data: proprietary raw material that will serve as a feedback loop of analytics for continuous process performance improvement to derive insights that enable quicker, faster and better decisions.

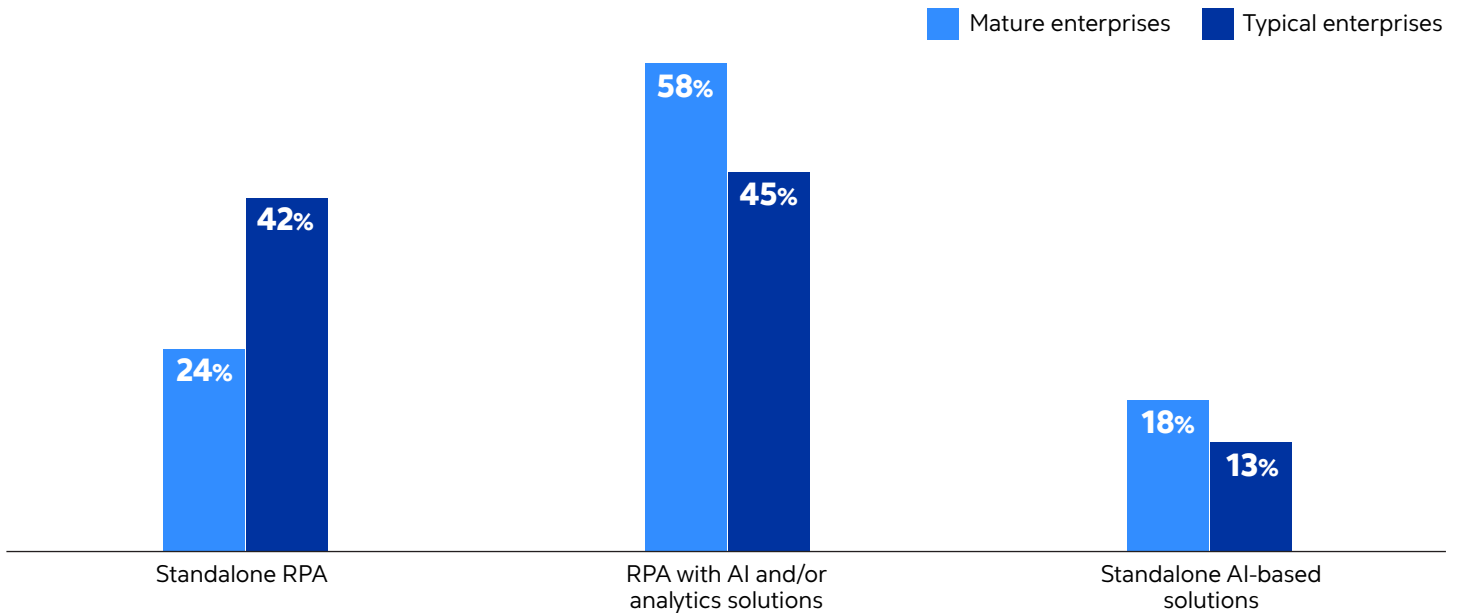
Beyond automating routine work, these combined technologies fuel digitally instrumented processes that can, for instance, instruct an employee on the next best action (e.g., a customer service agent knowing the precise pricing that will most likely close the sale) or recognize market trends that will lead to the next breakthrough product and enable fast response to changes in the market.

Technologies fuel digitally instrumented processes that can instruct an employee on the next best action or recognize market trends that will lead to the next breakthrough product.



## AI signals automation maturity

Mature enterprises were more likely to adopt AI in their automation initiatives. (Percent of respondents)



Response base: 50 senior executives

Source: Everest Group

Figure 1

Making better financial decisions is also part of the equation. Businesses can improve working capital by applying intelligent automation to invoicing and collections and using the AI-driven insights gleaned from analytics across functions such as order-to-cash and record-to-report.

Consider: A leading sports medicine provider was having trouble getting full payment for the products it sold to patients during medical consultations because of the insurance reimbursement process. The business implemented a system that used two years' worth of patient collection data to predict which invoices were least likely to be paid within 90 days, based on variables including the product, price, patient service center, territory, patient age and patient state. The operations team could then prioritize these patients for follow-up, which increased payment collection by 13%.<sup>8</sup>

Recent research by Everest Group reveals where "mature" enterprises are ahead.<sup>9</sup> While "typical enterprises" were still at the stage of implementing pilots of process automation for low-complexity processes, more mature adopters were moving from stand-alone RPA programs to applying AI and analytics or even deploying standalone AI-based solutions (see Figure 1).

## Blending intelligent systems and humans

With process automation and cognitive technologies, intelligent robots complement humans and help redirect people to use creativity and ingenuity on important projects that will move the needle for the business. Advanced technology lifts people out of processes that don't require strategic thinking and directs their time toward work they do better than machines — like serving customers, handling exceptions and creating new products or improving experiences.

With scalability built into the code and architecture of these processes, the need for people-based process delivery is further reduced with rule- and value-based logic of machine learning and AI or, in some cases, subjective judgment — that is, smart people working in tandem with intelligent automation.

James Loo, head of human resources at DBS Bank in Taiwan, who we recently wrote about in the *Harvard Business Review*, describes this type of human-machine collaboration, using chatbots for creating a great candidate experience. According to Loo, “A chatbot coach would work with the DBS Bank recruiting team, to train the chatbot to handle the routine tasks of screening candidates and answering frequently asked questions of candidates, while the human recruiters have more time to focus on strategic areas such as engaging with hiring managers to better understand the need for a new job and the changing needs of the business for new hires.”<sup>10</sup>

As companies work through the pandemic and prepare for a digital-first world, executives are making IPA a top priority. According to our Work Ahead research, the ratio of process work performed by humans vs. machines continues to tip in favor of machines, particularly in the areas of data organization, complex decision support and rules-based decision making (see Figure 2, next page).<sup>11</sup>

It's not surprising to see the data underscore how intelligent automation can increasingly help businesses overcome the operational hurdles created by crisis and uncertainty, as well as a world awash in data at volumes far beyond human scale.

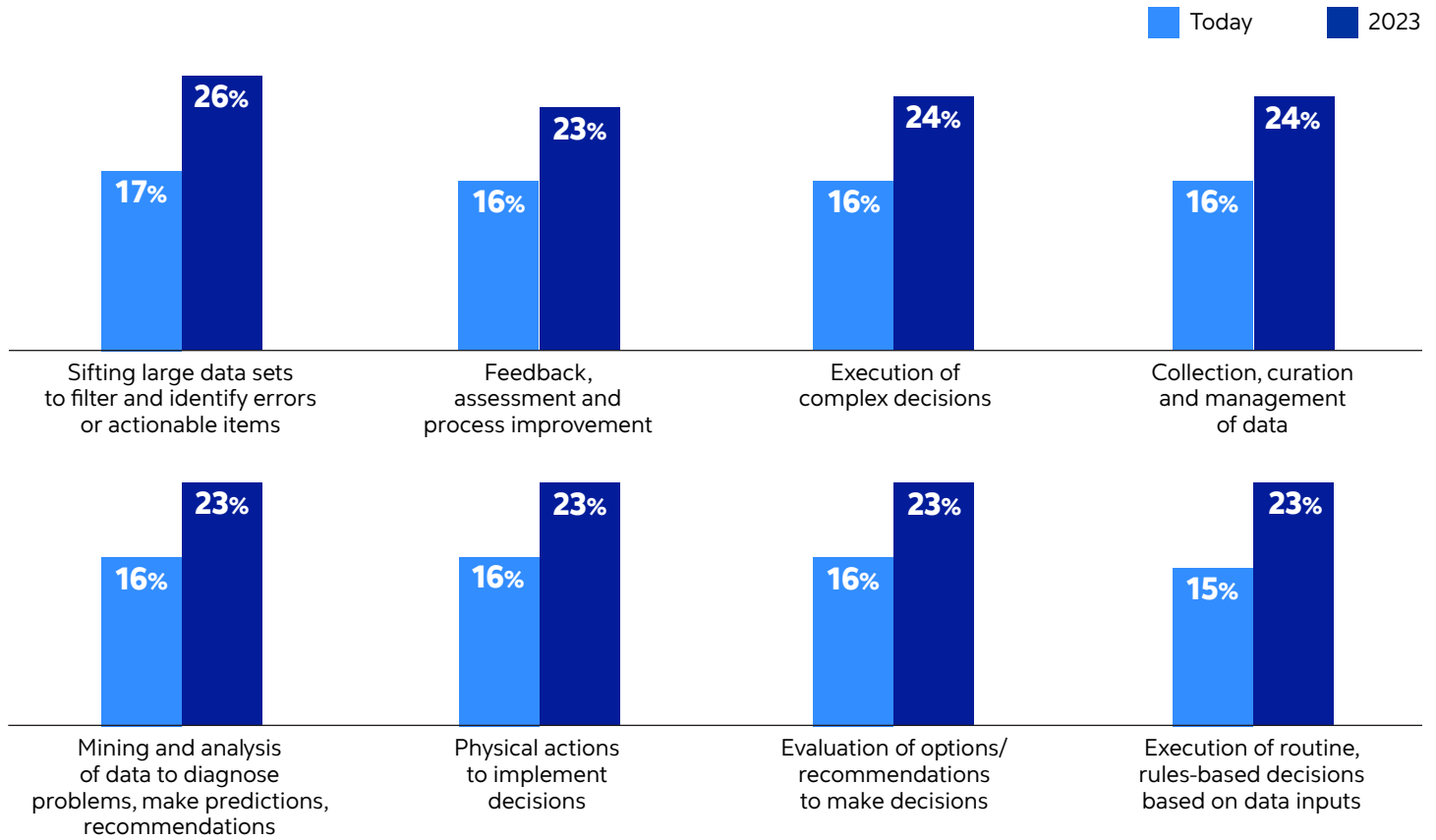
In the future of work, the collaboration of humans and intelligent machines will increasingly be relied on to accomplish the mission of all businesses. In the words of Professor Leslie Willcocks of the London School of Economics, automation and AI will finally let us “take the robot out of the human.”<sup>12</sup>

With process automation and cognitive technologies, intelligent robots complement humans and help redirect people to use creativity and ingenuity on important projects that will move the needle for the business.



## The march of machines continues

Respondents were asked to what extent the following activities would be executed by machines vs. employees, today and by 2023. (Percent of work done by machines)



Response base: 4,000 senior business leaders  
Source: Cognizant Center for the Future of Work  
Figure 2



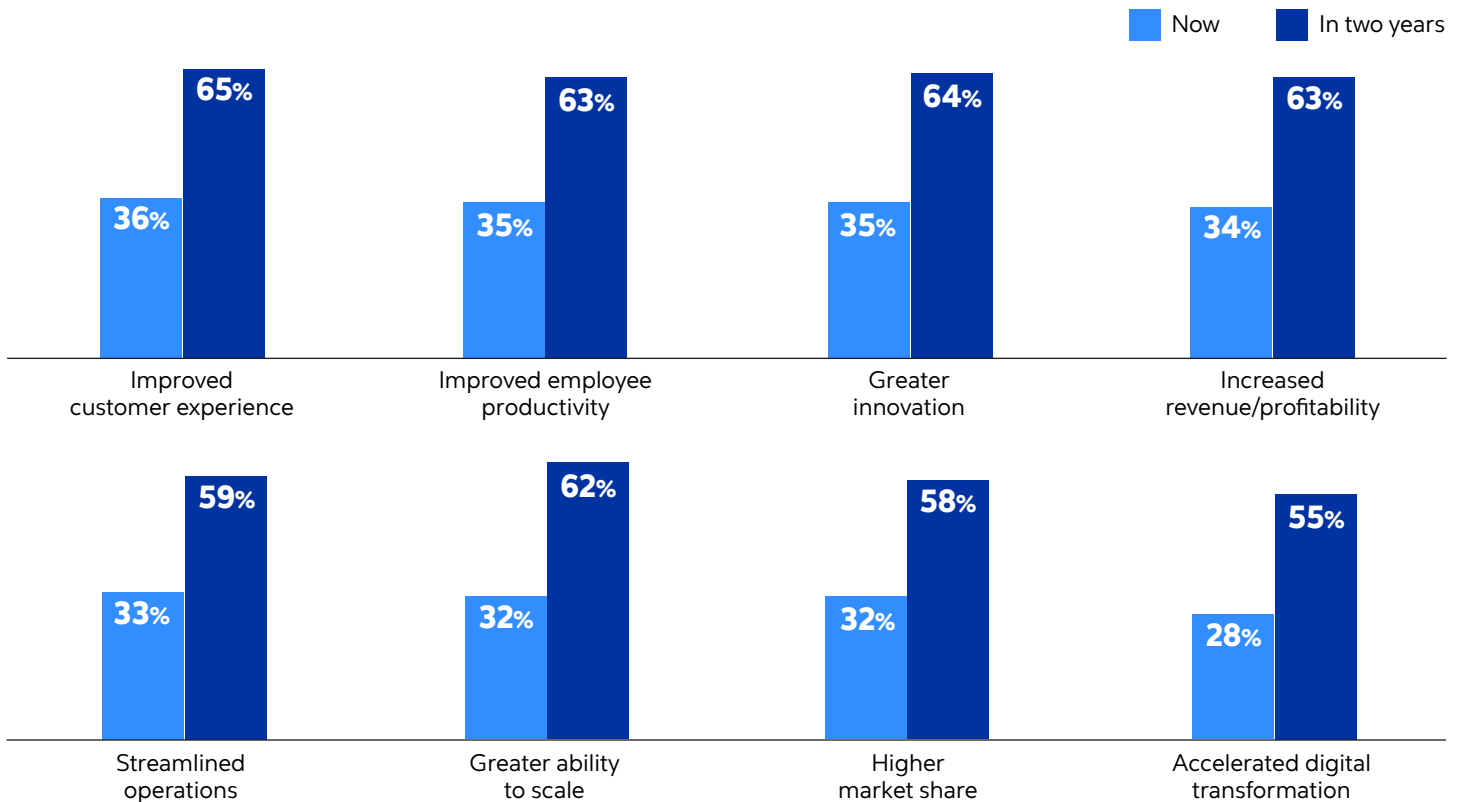


## The catalytic benefits of IPA

As more businesses apply IPA technologies to their core business operations, the benefits are clear to see. In a study we recently conducted with research organization ThoughtLab, customer and employee experience improvements are among the top expected benefits of IPA deployments, followed by greater market share, productivity, innovation, revenue and profitability (see Figure 3).

### Customer experience tops list of benefits from IPA

Respondents were asked about the benefits of IPA, now and in two years' time. (Percent of respondents)



Response base: 1,000 senior executives

Source: Cognizant

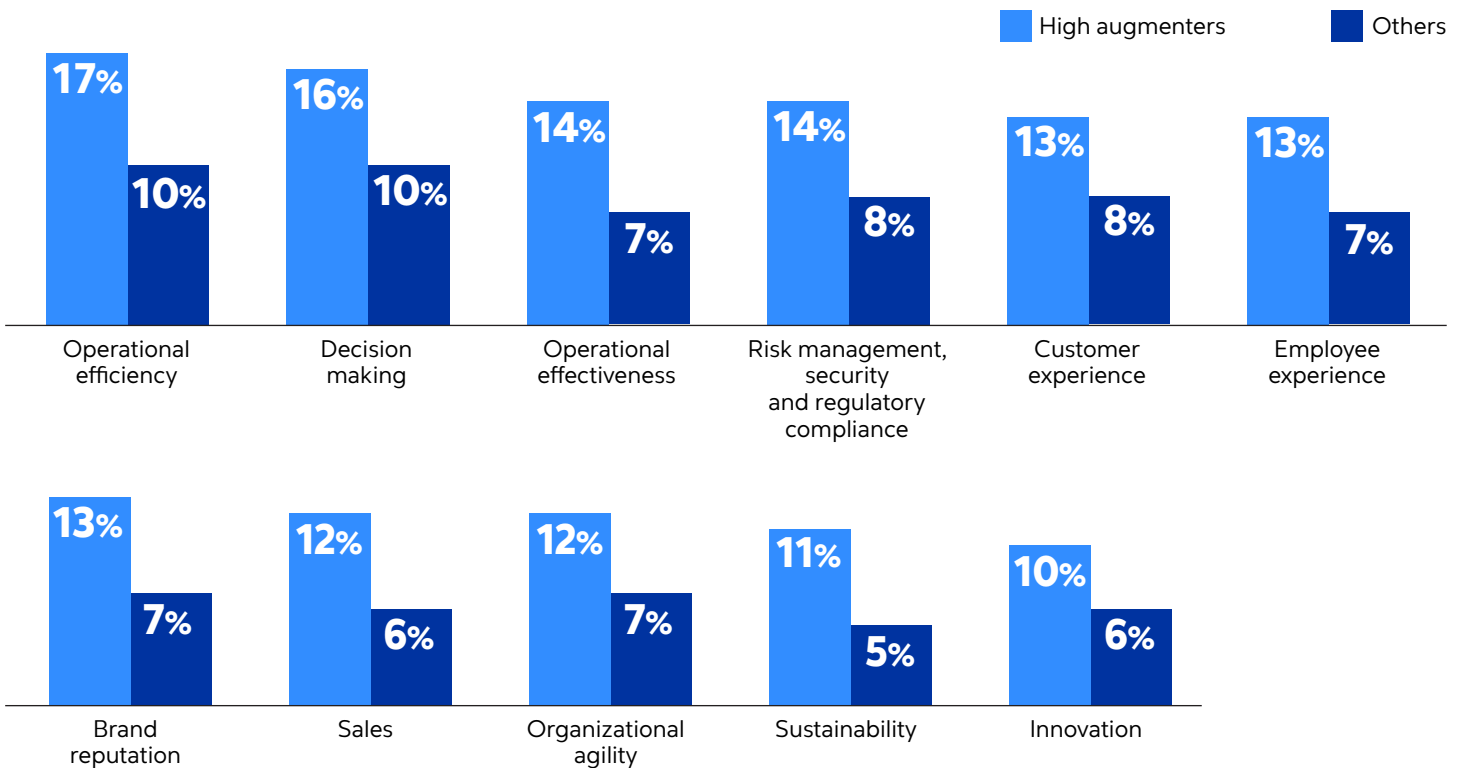
Figure 3

Other expected benefits include a greater ability to scale and more efficient use of working capital, since IPA can drastically improve financial processes, particularly cash flow and treasury management. According to a senior IT leader at a Japanese technology vendor in the study, “Our IPA investment has improved the employee experience, which has resulted in an improvement in the organization’s productivity.”

The more that businesses use AI, analytics and automation to augment processes, the greater the benefits. In our Work Ahead research, companies that have augmented two or more business processes with technology (“high augmenters”) reported significantly higher business benefits across the board (see Figure 4), with outcomes at least four percentage points higher (in some cases, much more) than those of other respondents. These high augmenters are achieving greater improvements in decision-making, operational efficiency, risk management, customer experience and more.

## High augmenters get outsized results

Respondents were asked to rate the improvements they’ve achieved in the following areas as a result of augmenting processes with technology. (Mean percent improvement)



Response base: 425 high augmenters; 3,575 all others  
 Source: Cognizant Center for the Future of Work  
 Figure 4

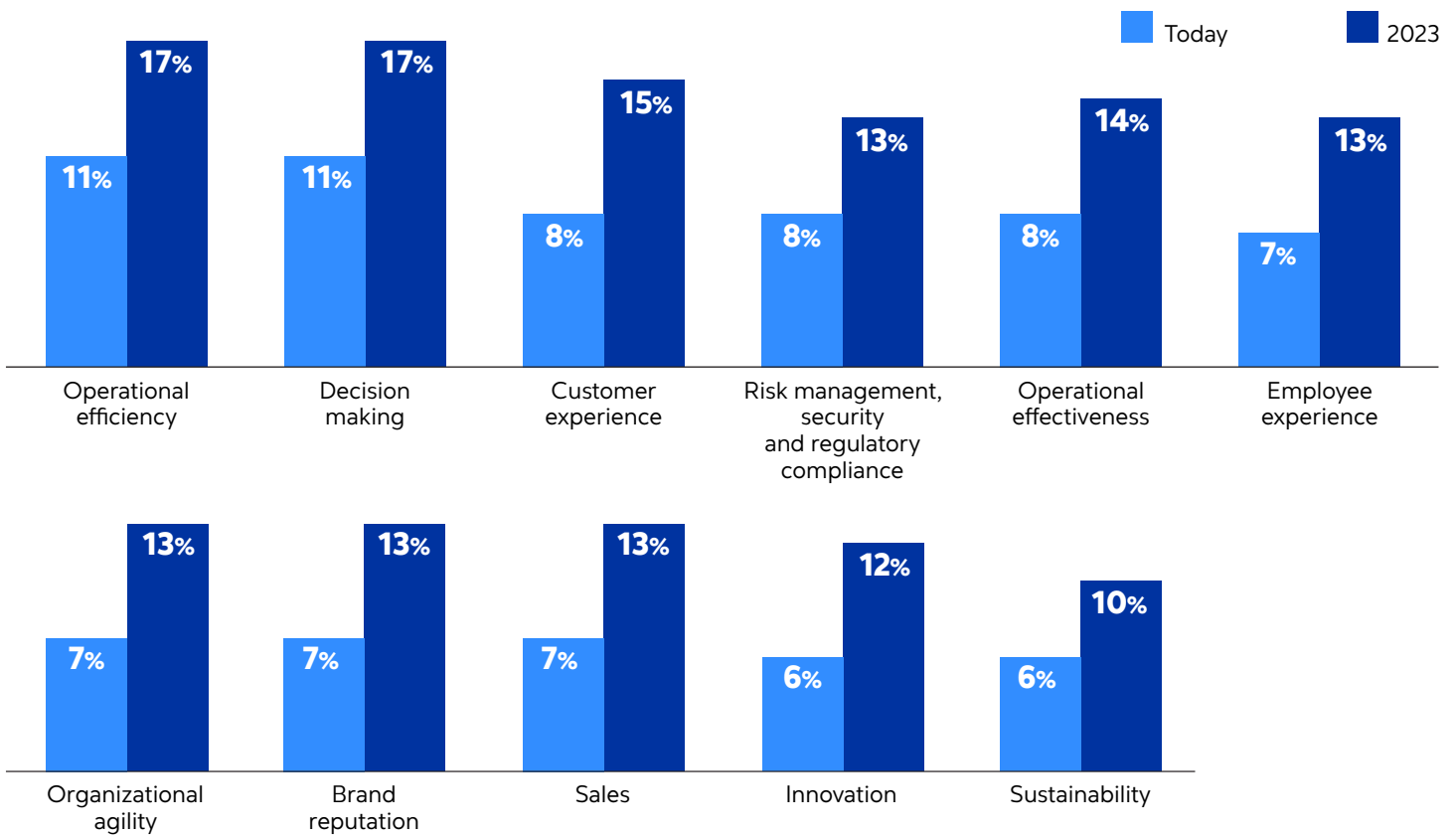


And it's not just use of automation tools like IPA. Whether it's drones, IoT, sensors or augmented reality, other next-gen digital technologies are also re-making process flows that are more fluid, with much better outcomes.

Human-machine collaboration is another factor in improving customer experience, according to our Work Ahead research, with a near-doubling in the percent of respondents from 2016 to today expecting to see increased progress in the next three years (see Figure 5). Other areas expected to surge via human/machine teaming are employee experience, organizational agility, brand reputation, innovation and sales, all of which are connected and interdependent.

## Workforce augmentation improves outputs across multiple dimensions

Respondents were asked about the progress they expect to make by 2023 in the following areas. (The mean percent increase today and in 2023)



Response base: 4,000 senior executives  
 Source: Cognizant Center for the Future of Work  
 Figure 5

---

## Making the digital business (process) case for great experiences

While current process inefficiencies may hurt, these friction points expose where innovations stemming from IPA can create value. The fin-tech space is rife with examples. Witness Stripe, whose founders spotted struggles with legacy payment platforms, especially in the form of coding and design issues. That's when the company decided to build a developer-focused instant-setup payment platform any company could use and scale.<sup>13</sup>

Then there's Chime, where starting an online account takes less than two minutes compared with a traditional bank, which could take a day or two. CEO Chris Britt told CNBC: "We're more like a consumer software company than a bank . . . It's more a transaction-based, processing-based business model that is highly predictable, highly recurring and highly profitable."<sup>14</sup>

These businesses have flattened the processes required to deliver the optimal experience. In short, they've made processes intelligent and nearly invisible, and hence the experience simple and easy for consumers.

Until now, most work processes have been too complex to be placed on "simple" supply/demand matching platforms (like DoorDash or Task Rabbit, etc.) But if this can happen at scale, in a sustained and adaptable way, it will allow processes to come out of the shadows and — dare we say — gain visibility and glamor.

### How the old guard can compete with digital natives

How will the change be brought about for traditional companies that don't have the luxury of being "born digital"? In other words, how could a slow and costly insurance policy management process be digitally reinvigorated like those of Lemonade's Policy 2.0, which is open-sourced on GitHub,<sup>15</sup> or the mortgage processes using AI such as Blend and Better.com?

To enact similarly real and enduring change in strategy, underlying processes and business approach, CEOs, COOs, chief analytics officers, shared services leads, process owners and IT leaders have to work collectively to confront the surly legacy of those sclerotic "as-is" processes from yesteryear. Using digital approaches where platforms *become* the process, and processes become experiences — *great* experiences — is essential.



---

Real change means not just automating processes but also applying digital tools to totally obliterate legacy sub-processes that get in the way of re-thinking better ways of working — from “then Margaret in procurement does this” to “Beep. Done.” Digitizing processes begins with a commitment to data modernization, reimagining how employees work, as well as putting a (merciful) bullet in technical debt-ridden applications.

The lessons to learn (especially in the face of the pandemic) from those doing it right are: Investments in infrastructure that enable processes to scale elastically to handle millions of remote employees and/or customers reliably pay off.

Take the value chain of healthcare: At hospitals, the pandemic is removing the constraints of geography and diminishing the need for brick-and-mortar physical visits, while also threading in the undeniable benefits of having “a Fitbit for your physiology.” Diagnostics, intelligent routing to specialists and triaging — at home — in service of a better healthcare experience might become commonplace, while also relieving beleaguered doctors and nurses.

We already see today’s manual work processes becoming digitized, allowing for better doctor-to-doctor communications, and helping to eliminate the need for expensive, repeat testing (perhaps allowing — at long last — the industry to obliterate the phrase “fax me the patient’s documents” from physicians’ vocabulary).

To move forward, many innovative leaders begin with a simple, digital precision twist that’s yielded great experiences across an entire value chain. Simply put, in every case of successful automation we’ve seen, a creative business leader looked at how a process was executed and concluded “We really stink at this,” and then found a better way of using automation, AI and algorithms to improve the speed, accuracy and cost profile of the process.

Digitizing processes begins with a commitment to data modernization, reimagining how employees work, as well as putting a (merciful) bullet in technical debt-ridden applications.

# Quick Take

## Taking the first data-driven step with process mining

Across the scores of use cases out there, the success of all digital process improvement initiatives hinges on a holistic audit of specific steps, functions and tasks for which automation and platforms can rapidly take over most of the work effort.

One of the most important pre-automation decisions is to use a process mining tool (e.g., Celonis, QPR, ABBYY, etc.) as a “plumb bob” of sorts that brings coherence to all interactions for a given process.<sup>16</sup> Additionally, these tools can help achieve straight-through processing, interaction history and necessary context for process interactions with people, places and things.

Applying process mining, organizations can pull event-related data from customer relationship management (CRM), ERP and other applications to model how business processes work in actuality. By capturing how work really happens, including who did it, how long it takes and any deviations from average, process mining ruthlessly exposes bottlenecks, non-compliant paths and other impediments often unseen.

Case in point: We recently helped a large healthcare provider identify solutions for the higher-than-normal cycle times required for configuring member benefits. The company sought to identify levers to drastically reduce the baseline cycle time of 26 days while ensuring critical access for all members.

We used process mining to run what-if scenarios and simulations that identified process bottlenecks, as well as ways to improve processes and reduce cycle times. One improvement was to automatically route cases of family members with disabled dependents to an agent with specific knowledge in that area to ensure more effective handling, improving customer service.

Using time-and-motion studies, in which screen activity was recorded, the client's business process team identified thousands of the same clicks being made each day — identifying a manual, necessary process that added time to an already convoluted system.

By applying AI to these time-consuming processes, we helped the client reduce cycle time by 70% — resulting in a target of under seven days.

The changes introduced by process mining improved customer experience, reduced human error and created processes that are more efficient and assured. The organization was able to redeploy employees to focus on more complex, challenging projects that directly created value for the business.

Applied properly, process mining precedes IPA initiatives as these tools can be used to create automation templates and gauge the health of existing processes — identifying which ones are efficient and which require an overhaul.

Given the value of automation, it is no surprise that companies are beginning to invest in process mining to optimize how work gets done.



---

## Is the future of work ‘process free’?

The future of business process operations is in many ways the future of work. We already use Siri, Alexa and GPS tools today — they’re all essentially robotic personal assistants. Imagine going from LaGuardia Airport to Newark and crossing midtown Manhattan during rush hour to catch a connecting flight. Would you ever try this (and catch your flight, on-time) without using GPS?

As these “bots” gather momentum, we foresee these software layers — with voice as the default interface — emerging as the dominant model. Already, robotic assistants like Google’s Duplex voice bot (for reservations) and x.ai’s Amy Ingram (for scheduling meetings) are yielding huge productivity and creativity gains.

Do people think of next-gen platforms like these as “processes” at all? Of course not! To the people who use them, they “just work.” So, if current trends continue, might all the work tasks we have to do in the future essentially manifest themselves as being “process-free”?

It’s a strategic vision that might be happening faster than we realize, as today’s employees seek the same high-quality experience as a consumer using the best software. Watch how your younger workers message, text and multitask around the process bottlenecks that work throws at them and see how quickly they resolve them. Harness those learnings and identify — quickly — pilots that capture them within appropriate process functions.

We also expect the future of friction-free processes to pivot around low/no-code tools that will quickly create and scale intuitive and meaningful experiences across the board. With technology central to almost every aspect of business, this is about looking for the next “positive deviation” vs. “the way we’ve always done it.”



---

## Pick your spots for using intelligent *process* automation to build intelligent *experience* automation

Digitizing a process doesn't need to start as a radical, invasive undertaking. The key is to ask how the increasingly sophisticated technologies of digital business processes can add value.

When organizations understand “how the knee bone is connected to the hip bone” in their extended processes and value chains, good things can happen. If you change the work process, you can change the business process, which in turn allows operating models to modernize in support of executing on the corporate strategy — not obsessing over the number of people “doing the process.”

Armed with new and powerful levers to create real process change, there's nowhere to hide in the dark corners of the back office anymore. Through targeted approaches and a thorough understanding of how processes interconnect and interact, businesses can use digital technologies to remove the rocks and roots of older legacy approaches and enable processes to flow smoothly into the calm waters of experiences.

To get started, we recommend organizations incorporate the following into their intelligent automation strategies:

- I Map the customer journey and modernize how you deliver.** While it's a good first step to do the hard yards of process-by-process change with established practices like process mining, the real journey is to digitally change the DNA of work and work processes that sprawl across disparate business units. Now is the time to map customer journeys and evaluate every process to deliver the best experience and optimize people, processes and technology to remove every friction point possible.
- I Write off your “experience debt” by humanizing and connecting workflows.** For digital processes to really change an organization, companies need to create vastly more humanized transactions and experiences. That means taking the time to really observe customers, partners, suppliers and employees — their motivations, their pain points, their frustrations and experiences with your organization's products and services — and what it means to their lives.
- I Optimize the workforce for a new way of work.** Free employees from the tyranny of the tedious by augmenting them with technology to unleash their full potential and business value. The people, talent and structure behind IPA is as important as the technology, so involve employees in the journey and allow them to experience firsthand the benefits of a new way of working, which in turn accelerates IPA adoption. Look for highly repetitive tasks occurring at great scale within your organization, like processing an invoice, proofreading documentation, “picking and packing,” reconciling, etc.



- 
- I Orchestrate IPA at scale.** To realize the full benefits of automation, it is vital not only to create a roadmap for automating processes across the enterprise but also, in some cases, to integrate isolated processes. The first step is a complete process audit to understand which processes make the most sense to fix, which should be left alone and which can be eliminated. Doing so can eliminate bottlenecks, manual hand-offs and siloed data. This is particularly true when connecting customer-facing processes to back-end operations.
  - I Prioritize data—it's the real process prize.** Look for areas in which processes and workflows can be digitally instrumented via mobile platforms, sensors, telematics and IoT, where processes are “born automated” and from which transaction data, previously unavailable, can be generated and managed. The delivery of clean, believable, real-time insights into your operations is the real prize of digital process initiatives.
  - I Relying on internal capabilities alone won't be an option for most.** Most businesses will need partners to help design, build, deliver, scale and curate ideas based on processes, newly invented digital tools or developments in wearables, sensors and 3D printing, let alone the latest in process mining approaches, data ingestion, analytics, UX and machine learning, etc. That's where service providers that deliver outcomes (over transactions) are critical.

## Helping business operations plan today for the journey ahead

The processes of tomorrow will look, feel and act very differently than they do today. Rather than enduring the twists, turns and delays of buying life insurance, taking out a loan or signing up for a new streaming service, we will soon forget that these activities are processes at all.

As the bumps, hairpin turns and awkward intersections are removed from the core business operations that support these transactions, all that will be left is the experience itself. And the resulting process intelligence will imbue businesses with the agility and real-time insights they need to keep those experiences relevant through the ever-changing times ahead.

Given the massive change wrought by both the pandemic and the decade-long imperative for digital innovation to benefit customers, suppliers and employees (not to mention society at large), the stakes of taking a false step may seem terrifyingly high. But by identifying processes that can yield more satisfying and meaningful experiences through next-generation digital approaches, businesses will ensure they won't just be a spectator to the opportunities ahead.

## Endnotes

- <sup>1</sup> Analyst Phil Wainwright has discussed process debt as a concept by building on computing pioneer Ward Cunningham's idea of technical debt <https://diginomica.com/the-spectre-of-process-deflation-haunting-us-enterprise>.
- <sup>2</sup> "Activate a Holistic Customer Experience Ecosystem to Become a Market Leader," Cognizant commissioned research conducted by Forrester Consulting, [www.design-exceptional-experiences.com/forrester/](http://www.design-exceptional-experiences.com/forrester/).
- <sup>3</sup> "The Work Ahead in Intelligent Automation: Coping with Complexity in a Post-Pandemic World," Cognizant, 2021, [www.cognizant.com/whitepapers/the-work-ahead-in-intelligent-automation-coping-with-complexity-in-a-post-pandemic-world-codex6633.pdf](http://www.cognizant.com/whitepapers/the-work-ahead-in-intelligent-automation-coping-with-complexity-in-a-post-pandemic-world-codex6633.pdf).
- <sup>4</sup> Michael Hammer, "Reengineering Work: Don't Automate, Obliterate," *Harvard Business Review*, July-August 1990, <https://hbr.org/1990/07/reengineering-work-dont-automate-obliterate>.
- <sup>5</sup> Phil Wainwright, "The Spectre of Process Deflation Haunting US Enterprises," Diginomica, Dec. 22, 2015, <https://diginomica.com/the-spectre-of-process-deflation-haunting-us-enterprise>.
- <sup>6</sup> Robert H. Brown, "Moore's Law, Speed and Robotic Process Automation," Cognizant Center for the Future of Work, Aug. 10, 2015, [www.cognizant.com/futureofwork/archived-sites/article/moores-law-speed-and-robotic-process-automation](http://www.cognizant.com/futureofwork/archived-sites/article/moores-law-speed-and-robotic-process-automation).
- <sup>7</sup> Leslie Joseph, "Automation Is the New Fabric for Digital Business," Forrester Research, Inc., June 16, 2021, [www.forrester.com/report/Automation+Is+The+New+Fabric+For+Digital+Business/-/E-RES164798](http://www.forrester.com/report/Automation+Is+The+New+Fabric+For+Digital+Business/-/E-RES164798).
- <sup>8</sup> "Intelligent Automation: A New Business Basic for Our Time," Digitally Cognizant, April 21, 2020, <https://digitally.cognizant.com/intelligent-automation-a-new-business-basic-for-our-times-codex5580>.
- <sup>9</sup> "Scaling Up Intelligent Automation: What Can We Learn from the Best?" Everest Group, 2021, [www.cognizant.com/us/en/documents/everest-group-scaling-up-intelligent-automation.pdf](http://www.cognizant.com/us/en/documents/everest-group-scaling-up-intelligent-automation.pdf).
- <sup>10</sup> Jeanne C. Meister and Robert H. Brown, "21 HR Jobs of the Future," *Harvard Business Review*, Aug 12, 2020, <https://hbr.org/2020/08/21-hr-jobs-of-the-future>.
- <sup>11</sup> "The Work Ahead in Intelligent Automation: Coping with Complexity in a Post-Pandemic World," Cognizant, 2021, [www.cognizant.com/whitepapers/the-work-ahead-in-intelligent-automation-coping-with-complexity-in-a-post-pandemic-world-codex6633.pdf](http://www.cognizant.com/whitepapers/the-work-ahead-in-intelligent-automation-coping-with-complexity-in-a-post-pandemic-world-codex6633.pdf).
- <sup>12</sup> Leslie P. Willcocks, "Why We Should Learn to Love the Robot," *Forbes*, Sept. 25, 2018, [www.forbes.com/sites/londonschoolofeconomics/2018/09/25/why-we-should-learn-to-love-the-robot/?sh=c19e60aad3b7](http://www.forbes.com/sites/londonschoolofeconomics/2018/09/25/why-we-should-learn-to-love-the-robot/?sh=c19e60aad3b7).
- <sup>13</sup> Derek Anderson, "The Story Behind Payment Disruptor Stripe.com and Its Founder Patrick Collison," Tech Crunch, May 20, 2012, <https://techcrunch.com/2012/05/20/the-story-behind-payment-disruptor-stripe-com-and-its-founder-patrick-collison/>.
- <sup>14</sup> Hugh Son, "Chime Is Now Worth \$14.5 Billion, Surging Past Robinhood as Most Valuable US Consumer Fintech," CNBC, Sept. 18, 2020, [www.cnbc.com/2020/09/18/chime-is-now-worth-14point5-billion-surging-past-robinhood-as-the-most-valuable-us-consumer-fintech-.html](http://www.cnbc.com/2020/09/18/chime-is-now-worth-14point5-billion-surging-past-robinhood-as-the-most-valuable-us-consumer-fintech-.html).
- <sup>15</sup> Scott McGee, "Lemonade Launches Policy 2.0," *Insurance Times*, June 6, 2018, [www.insurancetimes.co.uk/lemonade-launches-policy-20/1427327.article](http://www.insurancetimes.co.uk/lemonade-launches-policy-20/1427327.article).
- <sup>16</sup> Process Mining Software Comparison: [www.processmining-software.com/tools/](http://www.processmining-software.com/tools/).

## Acknowledgments

*Also contributing to this report were Andreea Roberts, Chief Marketing Officer for Cognizant's Digital Business Operations practice, and Corey Olfert, Global Messaging and Portfolio Marketing Lead for Cognizant Digital Business Operations.*



---

## About the Center for the Future of Work

Cognizant's Center for the Future of Work™ is chartered to examine how work is changing, and will change, in response to the emergence of new technologies, new business practices and new workers. The Center provides original research and analysis of work trends and dynamics, and collaborates with a wide range of business, technology and academic thinkers about what the future of work will look like as technology changes so many aspects of our working lives. For more information, visit [Cognizant.com/futureofwork](https://www.cognizant.com/futureofwork) or email [CenterforFutureofWork@cognizant.com](mailto:CenterforFutureofWork@cognizant.com).

---

## About Digital Business Operations

Cognizant Digital Business Operations helps clients create and scale exceptional, human-centered experiences. By tying desired outcomes to operations and building flexibility, intelligence and creativity into processes, Cognizant Digital Business Operations enables modern businesses to confidently embrace continuous change.

---

## About Cognizant

Cognizant (Nasdaq-100: CTSB) engineers modern businesses. We help our clients modernize technology, reimagine processes and transform experiences so they can stay ahead in our fast-changing world. Together, we're improving everyday life. See how at [www.cognizant.com](https://www.cognizant.com) or [@Cognizant](https://twitter.com/Cognizant).

---

# Cognizant

### World Headquarters

300 Frank W. Burr Blvd.  
Suite 36, 6th Floor  
Teaneck, NJ 07666 USA  
Phone: +1 201 801 0233  
Fax: +1 201 801 0243  
Toll Free: +1 888 937 3277

### European Headquarters

1 Kingdom Street  
Paddington Central  
London W2 6BD England  
Phone: +44 (0) 20 7297 7600  
Fax: +44 (0) 20 7121 0102

### India Operations Headquarters

#5/535 Old Mahabalipuram Road  
Okkiyam Pettai, Thoraipakkam  
Chennai, 600 096 India  
Phone: +91 (0) 44 4209 6000  
Fax: +91 (0) 44 4209 6060

### APAC Headquarters

1 Changi Business Park Crescent,  
Plaza 8@CBP # 07-04/05/06,  
Tower A, Singapore 486025  
Phone: + 65 6812 4051  
Fax: + 65 6324 4051