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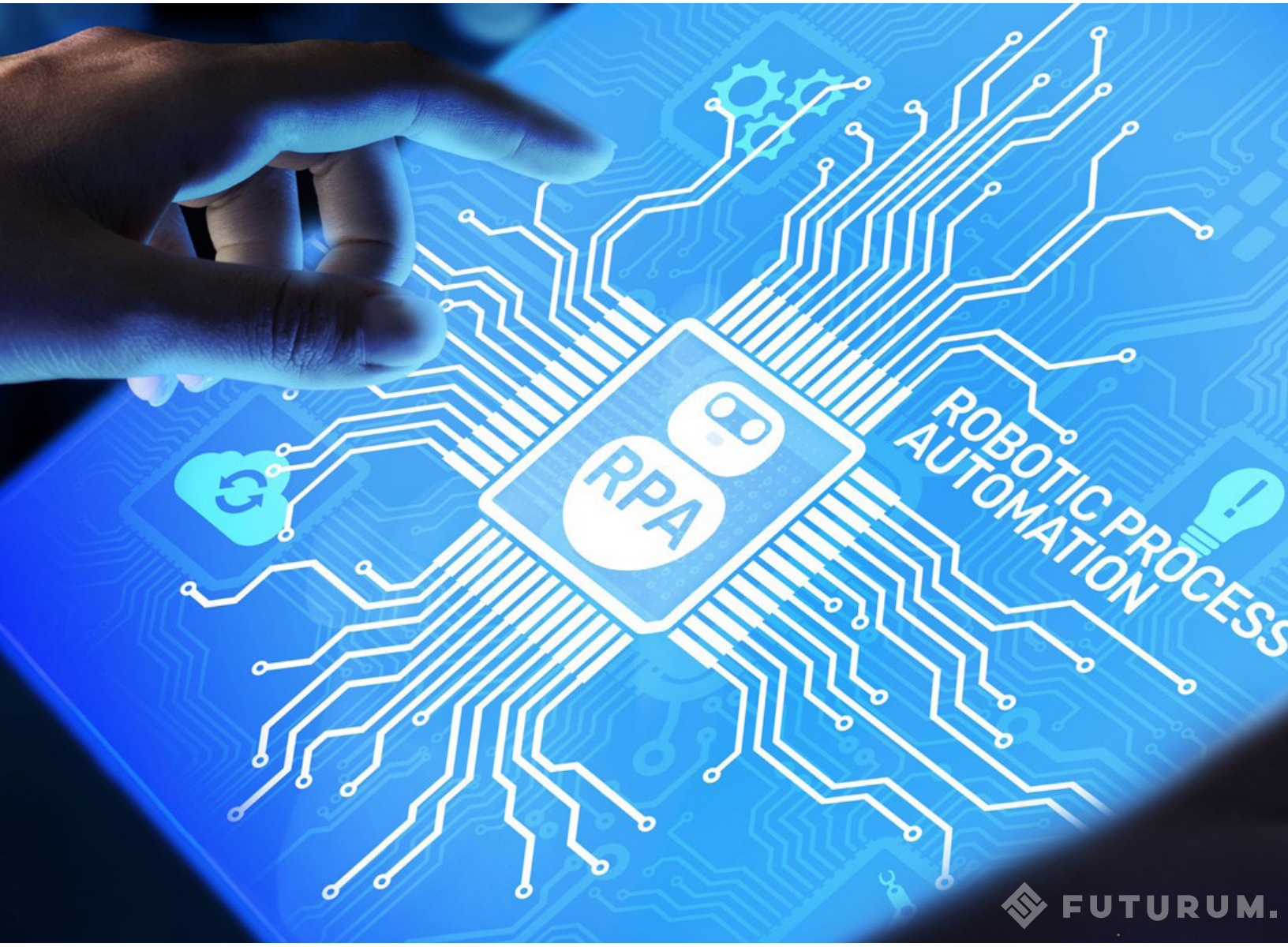

THE STATE OF AUTOMATION 2019: RPA, AI, and Intelligent Automation

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INTRODUCTION

Welcome to our report, **The State of Automation 2019: RPA, AI, and Intelligent Automation**. This report is based on a 2019 quantitative study of 1,000 businesses in North America, ranging from small organizations (fewer than 500 employees) to the enterprise (50,000 or more employees), and spanning 10 separate industries: Manufacturing, Media & Publishing, Energy, Banking & Finance, Technology, Professional Services, Healthcare and Pharma, Retail, Travel & Hospitality, Transportation, and the Public Sector. The purpose of this study was to identify current and future trends in investments, deployments, and attitudes relating to automation adoption, including Robotic Process Automation (RPA), Artificial Intelligence (AI), and Intelligent Automation (IA) as they exist today, what we expect in the next 12 months, and what we see looking forward to 2025.

The State of Automation 2019: RPA, AI, and Intelligent Automation aims to identify, frame, and quantify the study's most valuable insights. In this report, you will find data on the current state of automation adoption across a breadth of industries and organizations of all sizes. You will also find data on investment and adoption intent for the next 12 to 24 months. The report identifies key motivating factors for automation technology investment, as well as common challenges currently preventing some organizations from moving forward with more sophisticated automation deployments. Finally, the report also dives into the question of human replacement versus human augmentation and provides best practices guidance for organizations either contemplating or already engaged in incorporating RPA, AI-based solutions, and Intelligent Automation solutions into their business operations.

DEFINITIONS:

Robotic Process Automation (RPA). RPA refers to "the use of a preconfigured software instance that uses business rules and predefined activity choreography to complete the autonomous execution of a combination of processes, activities, transactions, and tasks in one or more unrelated software systems to deliver a result or service with human exception management." This definition was developed collaboratively by the IEEE Standards Association (IEEE SA) and a group of industry experts and published in 2017, with a goal of providing understandable definitions and terminology in what is a rapidly growing, but still very nascent industry. In simple terms, RPA is about doing. It can take a process, like retrieving documents, invoices, emails, etc., filing them, and taking actions that are mostly copy and pasting tasks and performing them, relieving humans from the banality of repeatable, mundane tasks.

Artificial Intelligence (AI). While RPA is about doing, AI is the thinking part of the equation. AI combines cognitive automation, machine learning, reasoning, problem-solving, and natural language processing, and can generate hypotheses and analysis, either relating to a specialized function or a breadth of functions, ranging from network optimization to data analytics. AI is a workhorse and can produce insights and analytics at or above what humans are capable of.

Intelligent Automation (IA). Intelligent Automation (IA) is what you get when you apply AI to the business of process automation. IA relies on AI and machine learning and is innately capable of initiative and/or self-management. IA can be employed to actually read documents (which are essentially unstructured data), extract information, and figure out what to do—much like a human might. The differentiator is that IA can perform these tasks at an extremely rapid pace which, in today's business environment is quickly becoming the foundation of business success in myriad ways. This includes allowing businesses to more effectively deliver on customer experience expectations, utilize their workforces in the most efficient, effective manner possible, cutting costs, and reducing processing times.

EXECUTIVE SUMMARY

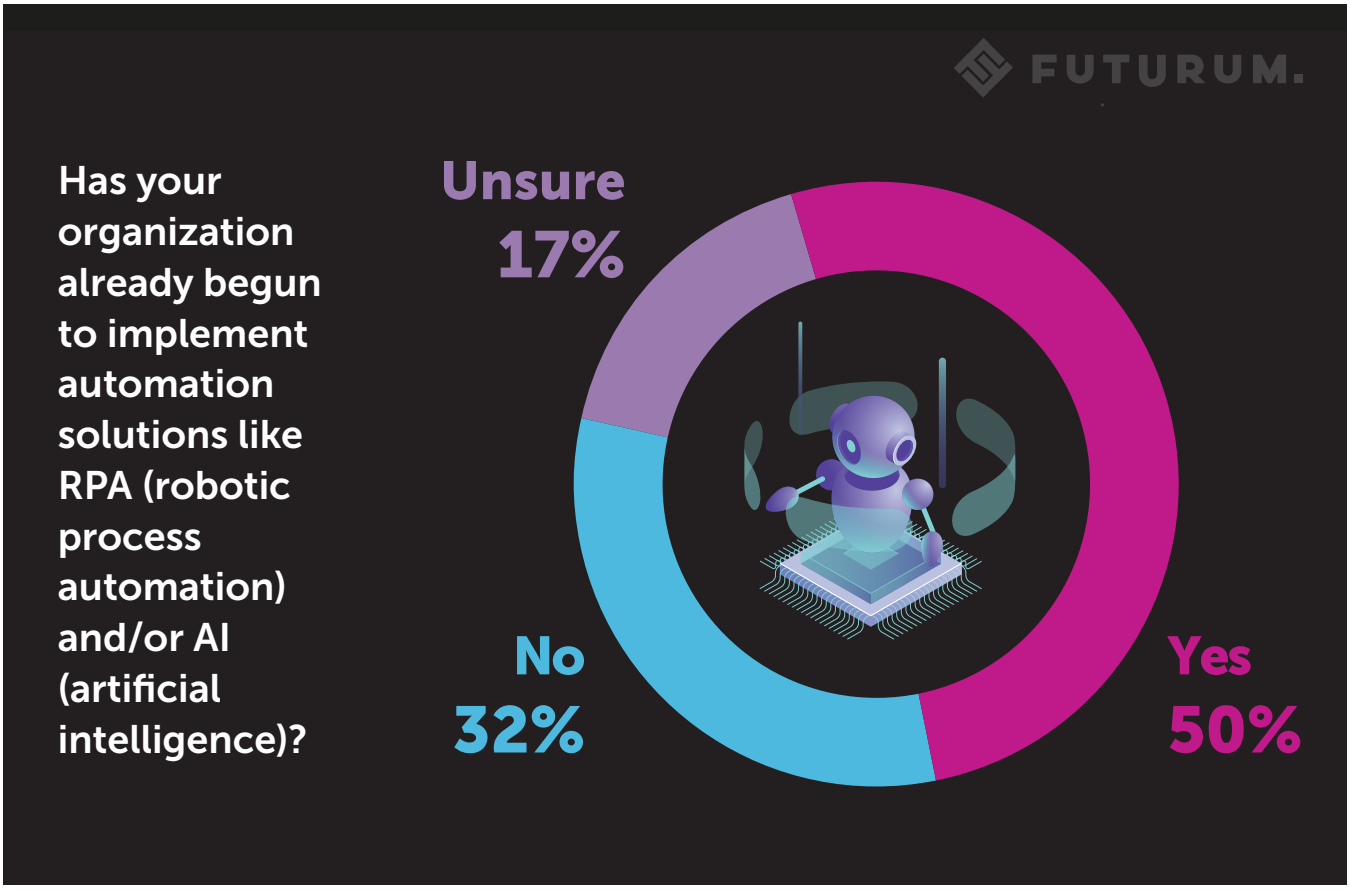
- Over half of businesses in North America have already implemented some kind of automation solution like RPA or Artificial Intelligence (AI).
- Additionally, 1 in 4 organizations which have not yet implemented RPA or AI-based automation are in the process of doing so.
- RPA adoption rates vary between industries, with strong adoption already in Manufacturing, Media & Publishing, Energy, Banking, and Tech sectors taking the lead.
- Nearly 9 in 10 manufacturing organizations have already implemented RPA and/or AI solutions into their business model.
- Nearly 75% of professional services firms and mid-sized retailers have already implemented RPA and/or AI solutions into their business model.
- Top reasons given by companies as to why they have not yet begun implementing RPA or AI-driven automation are: doubts about business value, difficulty in finding the right technology partners, and inadequate budgets.
- 75% of businesses intend to invest in RPA between now and 2025, and nearly half intend to do so in the next 12 months.
- Only 13% of organizations are currently unsure whether they will invest in RPA in the future.
- Aside from manufacturing functions, data analysis and IT are the most common focus of RPA deployments for most businesses.
- In addition, nearly 1 in 3 organizations already leverage some form of RPA to improve Customer Service and Communications, and roughly 1 in 4 organizations already leverage RPA to improve Project Management, Sales, CRM, Marketing, and Advertising.
- Until now, RPA deployments have mostly focused on internally-facing business functions, but starting in 2020, the focus of RPA deployments will begin to shift towards customer-facing business functions like customer service, sales, and omnichannel user experience (UX).
- 8 out of 10 businesses that have already implemented RPA now believe that intelligent automation is most effective when it augments rather than replaces human workers.
- Our data indicates that organizations should attempt to minimize the replacement of humans with automation and prioritize intelligent automation investments that free human workers from low value and time-consuming tasks and allows them to focus instead on higher value tasks.
- Currently, 67% of businesses justify replacing human workers with automation to improve operational efficiency, and 63% of businesses justify replacing human workers with automation to cut operational costs.
- However, two-thirds of organizations already feel that minimizing human replacement and maximizing augmentation is the ideal automation deployment model, and nearly 1 in 4 businesses feel that the ideal automation deployment model replaces zero human workers and is 100% in pursuit of human worker augmentation.
- Positive outlook about employment and maintaining human headcounts: Nearly twice as many businesses already investing in RPA and AI solutions believe that human augmentation will generally prevail over human replacement in the workplace.
- Only 34% of senior business leaders and 34% of C-level executives—or only one-third of the senior leadership tier in North American organizations—feel apprehensive toward automation in general.
- Fear of being replaced by automation appears to be the biggest source of pushback against automation solutions inside North American organizations. The mention of RPA solutions appears marginally more threatening to workers than mentions of AI-based solutions.
- On the whole, the projected impact of automation implementations on all business roles is expected to be more positive than negative.
- 62% of businesses currently engaged in automation deployments and investments have already or are in the process of clearly communicating their strategy to their employees.
- 59% of automating organizations are also focused on delivering employee training to help workers adjust to the automation processes they will be working with. In addition, 55% of automating organizations are also focused on employee retraining, upskilling, and/or assistance for employees being displaced by automation deployments.
- 3 in 4 businesses already feel that automation will make them more competitive than they are today. Only 8% of businesses feel that automation will make them less competitive than they are today. Somewhere in the middle, 17% of organizations, don't yet feel that automation won't have much impact on how competitive they are.

FINDINGS

Section 1. Automation is reaching an inflection point.

At least half of businesses in North America have already implemented some type of automation solution like RPA or Artificial Intelligence.

As we enter into the 21st century's third decade, one increasingly critical aspect of successful digital transformation is the shift toward automation in general, and intelligent automation in particular. This transition comes in two categories: The first takes previously manual processes and tasks and automates them; the other takes previously automated tasks and improves on the model by injecting intelligence into it. That intelligence could be as rudimentary as adding sensors and logic to a single production machine, and as sophisticated as combining machine learning and predictive analytics to automate an entire production facility.



Our data shows that at least 50% of North American organizations have already implemented some type of intelligent automation, be it RPA or AI, in at least one process. This suggests that RPA and business-focused AI are in the process of reaching an inflection point just as we enter the 21st century's third decade. This is significant, as it is not merely the point at which more businesses use intelligent automation than businesses that don't, but the point at which we can show that both RPA and AI have transitioned from promising emerging technologies to intelligent, mainstream business solutions already proving their value.

Conversely, only 32% of North American organizations reported not having implemented intelligent automation at all, and 17% were unsure.

Section 2. The state of RPA, AI and IA adoption varies between industries.

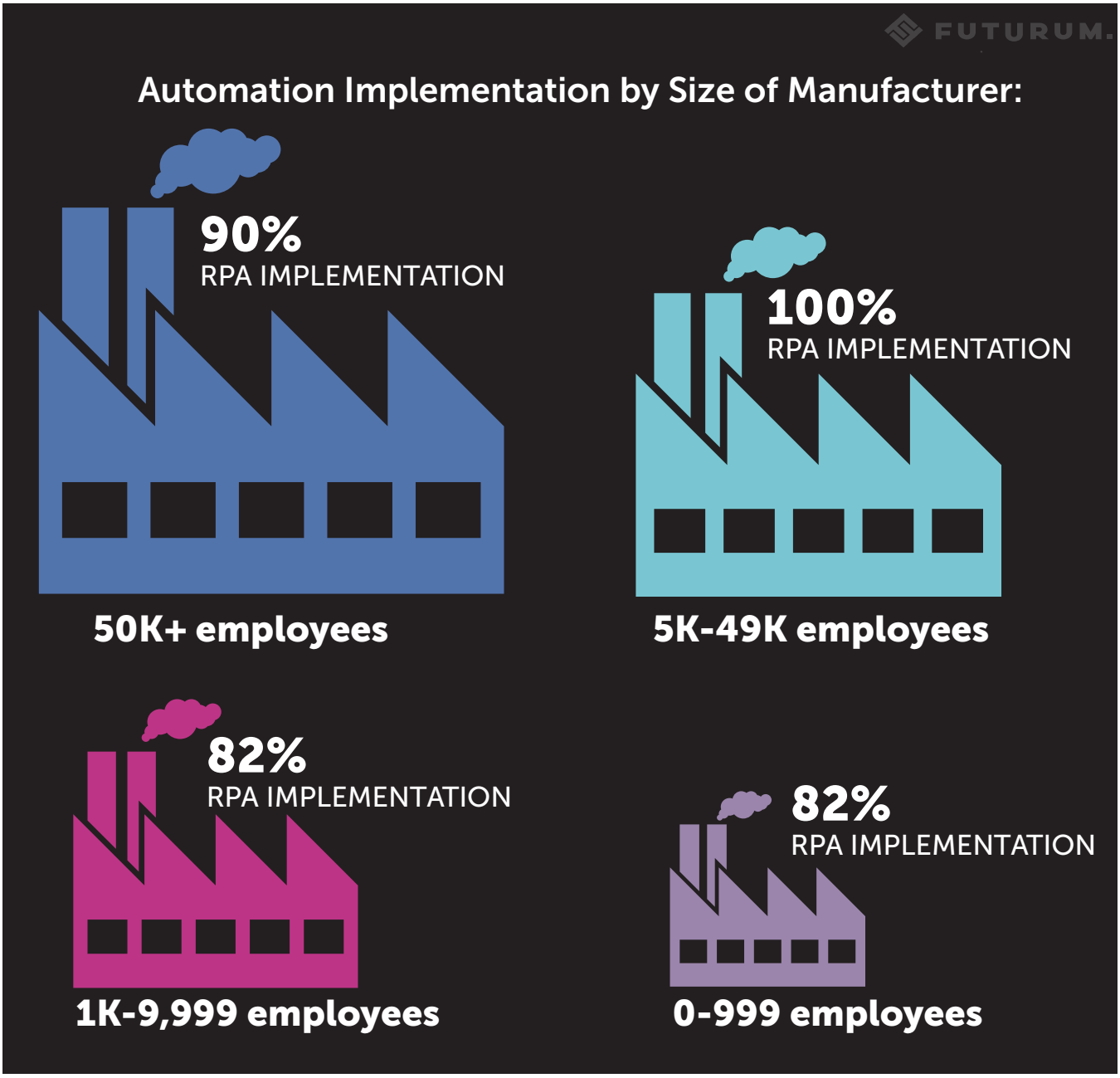
Digging deeper into the numbers, we identified some notable differences between industries with regard to their individual states of RPA, AI, and IA adoption. For instance, nearly 9 in 10 manufacturing organizations have already adopted some form of intelligent automation, while fewer than 3 in 10 public sector organizations (excluding utilities) had not yet incorporated any kind of RPA or AI into their operations.

The breakdown by industry of the adoption of some form of automation is as follows:

Manufacturing. The Manufacturing sector affirmed itself as the second strongest implementor of RPA, AI, and Intelligent Automation solutions in our study, with 87% of primarily manufacturing organizations reporting having already implemented some form of IA and only 13% not yet having implemented IA just yet.

Digging into who these slow adopters are, we discovered that 18% of manufacturers with fewer than 1,000 employees reported not yet having implemented any kind of intelligent automation, while 18% of manufacturers with 1,000 to 5,000 employees similarly had not yet implemented intelligent automation. This is not to say that these manufacturers do not currently leverage automation in their day-to-day operations, but rather that they have not yet upgraded their operations to be competitive with the remaining 82% and 82% respectively of

manufacturers in their corresponding size range. The reasons why these roughly 1 in 5 manufacturing organizations have not yet caught up to the rest of their peers will be discussed in Section 3.



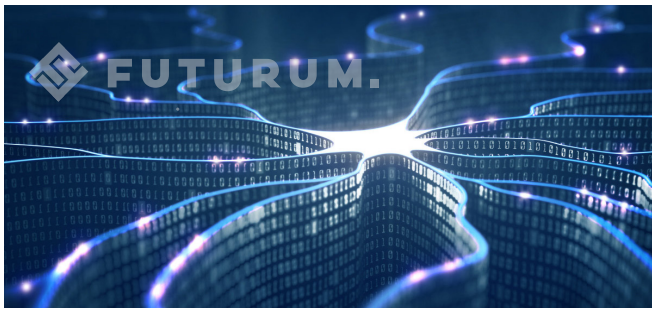
Remarkably, our study found that 100% of North American organizations with between 5,000 and 50,000 employees, and whose principal function is manufacturing, have already adopted and implemented some form of intelligent automation that includes RPA and/or AI.

It surprised us somewhat to see that in the very large enterprise space (50,000+ employees), as many as 10% of manufacturing-focused organizations had yet to implement intelligent automation. We will discuss some of the underlying reasons uncovered by our study in Section 3.

Media and Publishing. The only sector that reported a higher rate of intelligent automation adoption than Manufacturing was Media and Publishing, with 88% responding affirmatively—barely edging out Manufacturing's 87%. Only 13% of Media and Publishing companies reported not yet having implemented RPA or AI solutions into their operations.

This high level of intelligent automation in Media and Publishing should come as no surprise. On one hand, the digitalization of media has been a sweeping and globally disruptive force over the course of the last two decades. While print media are still very much alive, the explosive growth of online (and consequently mobile) media consumption has forced just about every media company to transition from a print first, digital second operational model to a digital first, print second (or not at all) operational model. This transition, which comes with a near-exponential new breadth of complexity due to the number of channels and formats required to reach audiences across multiple platforms, devices, and services, has driven media companies and content publishers to replace once manual content and media management processes with flexible, adaptable, machine-learning-based automated solutions.

In addition to the management and publishing of content itself, we also see a high degree of emphasis by publishers on 24/7/365 data analytics to gauge the effectiveness of their content across a wide range of channels, audiences, and markets. Media and Publishing's sophisticated and industry-wide measurement culture also provided fertile ground for intelligent automation implementations specifically by way of analytics solutions.



Lastly, we also note the increasing prevalence of RPA and AI in certain aspects of media production, from video FX functions to providing consumers of media products with listening and viewing recommendations designed to keep them engaged with a platform, channel, or service longer than they otherwise would be.

Banking and Finance. Unsurprisingly, Banking and Finance showed a high rate of intelligent automation adoption, with 85% of financial institutions already reporting RPA and AI implementations, and only 15% reporting no intelligent automation of any kind. As with the Manufacturing industry, the majority of slow adopters were smaller financial institutions.

While Banking and Finance may not immediately jump to mind as the fastest moving or most agile industry when it comes to adopting new technologies or adapting quickly to digital disruption, most financial institutions have adapted well to the shift to online and mobile transactions. One underpinning of this evolution in recent years is a new robust, flexible, and secure technology ecosystem designed to help financial institutions and their customers transition to increasingly frictionless and secure 24/7 banking.

Some of the principal areas still driving smart automation investments among financial institutions include online and mobile banking, predictive analytics, investment services, customer support, and transaction services.

Nearly 75% of Professional Services companies have already implemented some kind of RPA or AI-based intelligent automation solution.

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Technology. Perhaps somewhat ironically, the Technology sector comes in fourth place with regard to smart automation adoption, behind Media and Publishing, Manufacturing, and Banking and Finance, with 81% of organizations reporting having already implemented RPA and/or AI solutions.

This leaves a surprising 19% of technology companies somehow still operating without RPA or AI solutions in their operational ecosystem.

Professional Services. With 73% of Professional Services organizations already reporting some degree of intelligent automation implementation, we begin enter the domain of what we might call "growth industries" for RPA, AI, and Intelligent Automation: Industries currently experiencing the steeper adoption curve that more RPA-mature industries like Manufacturing, Media and Publishing, and Banking and Finance were experiencing 24 to 36 months ago. Here, intelligent automation is no longer an emerging technology category, or a promising area of possible investment, but an expanding operational reality for a majority of an industry's most competitive organizations.

Over 7 out of 10 Professional Services firms having already implemented some kind of RPA or AI solution is extraordinarily promising, as it speaks to the versatility of automation solutions. Here's why: It isn't difficult to create Manufacturing specific or Healthcare specific or Banking specific RPA solutions because those solutions will be able to scale with relatively little friction. Banking is banking, after all, regardless of the bank. But Professional Services as an industry encompasses a much more diverse community of businesses, from law firms and architectural firms to staffing companies and customer service providers. All of these business subsets have widely different needs and requirements when it comes to intelligent automation, and solutions geared toward helping attorneys serve their clients may not be of any use to a staffing company, and vice versa. And yet, **nearly 75% of Professional Services companies have already implemented some kind of RPA or AI-based intelligent automation solution.**

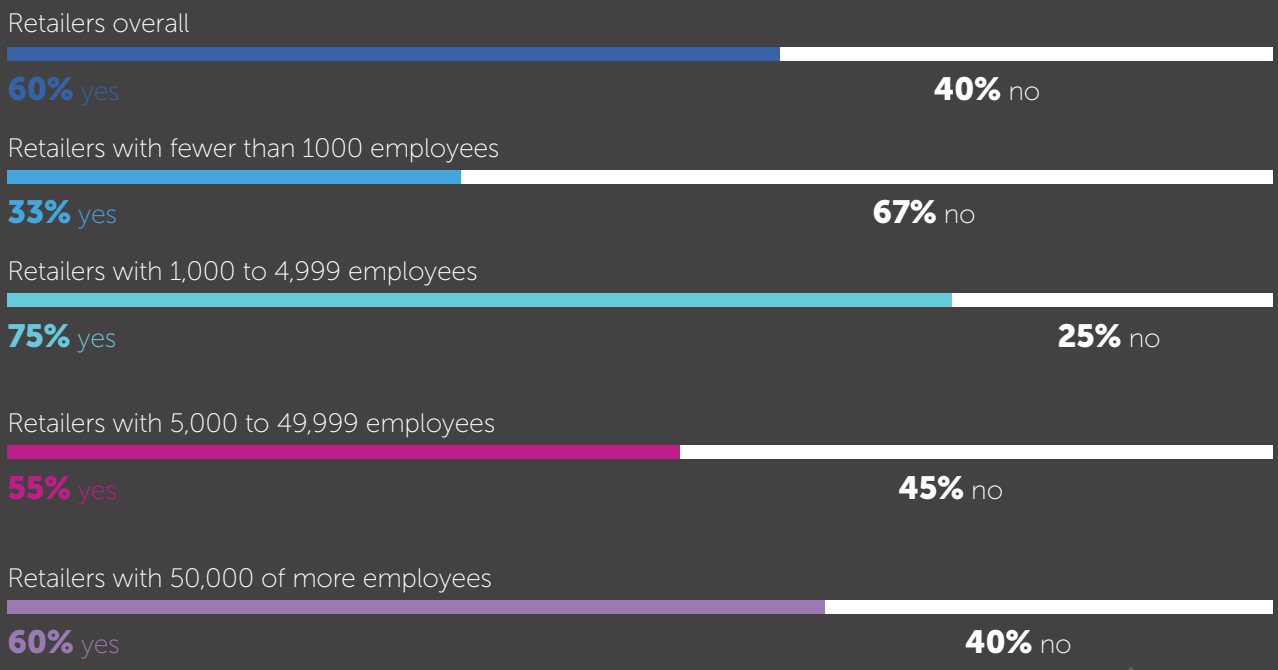
Retail. Nearly two thirds of Retailers (60%) have already adopted some form of automation, while 40% still have not.

Digging deeper into where the bulk of slow adopters among Retailers are, we find that small to medium sized retailers have, by far, the lowest rate of automation implementation: **Two thirds (or 67%) of Retailers with fewer than 1,000 total employees have not yet implemented any kind of RPA or AI-based automation.**

In contrast, 75% of medium sized Retailers (1,000 to 5,000 total employees) have already implemented some sort of RPA or AI-based automation. We will address the cause of this significant difference in Section 3.

For large Retailers, the rate of automation adoption falls about midway between small and medium sized retailers, with 55% of organizations with 5,000 to 50,000 employees reporting some implementation, and 60% of very large Retailers (50,000 employees or more) reporting the same.

Automation Adoption among retailers



The final three industries on our list all fall below a 50% sector-wide intelligent automation implementation average, with only 47.8 percent of the Travel and Hospitality industry, 41.7 percent of the Transportation industry, and only 25% of the Public Sector reporting some kind of RPA or AI-based automation having already been implemented.

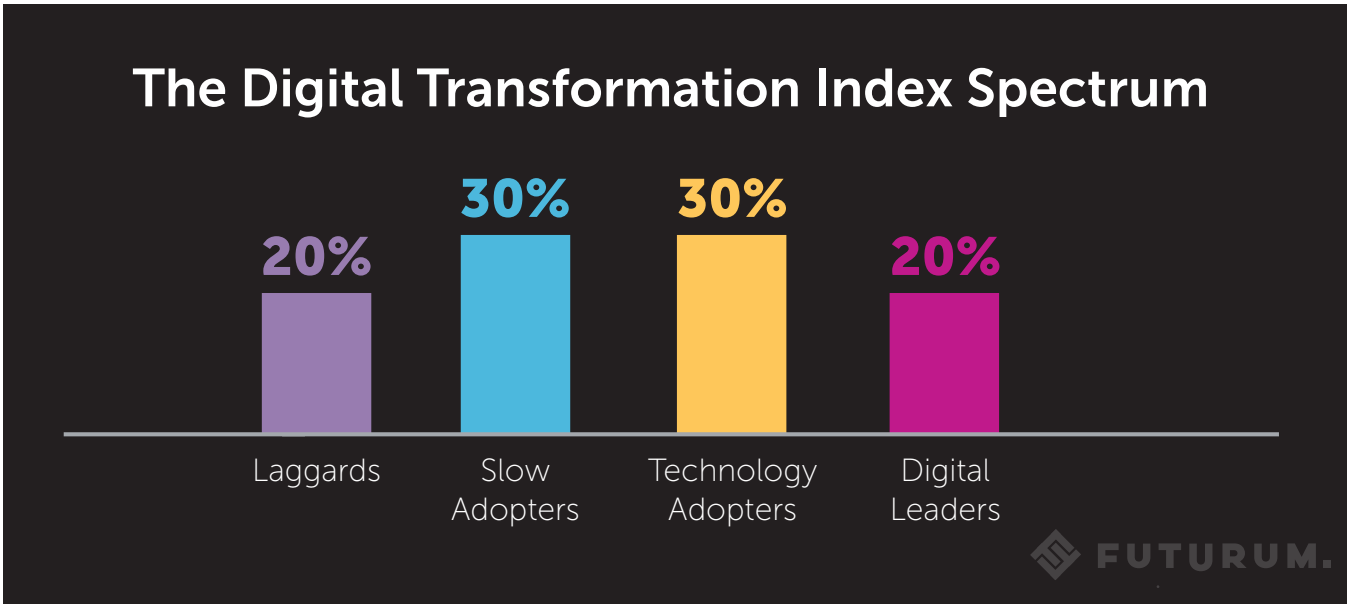
Section 3. What's the deal? Why haven't industries implemented RPA or AI-driven automation?

Our research shows the reasons industries have not yet mostly adopted and implemented RPA or AI-driven automation are threefold: Lack of perceived value, friction in technology partner discovery, and inadequate budgets.

Across all industries surveyed, no single reason emerged as to why organizations had not yet implemented RPA or AI-driven intelligent automation in their daily operations. The most common reason given, however, with 39% of businesses agreeing, was that they were simply not interested in RPA or AI.

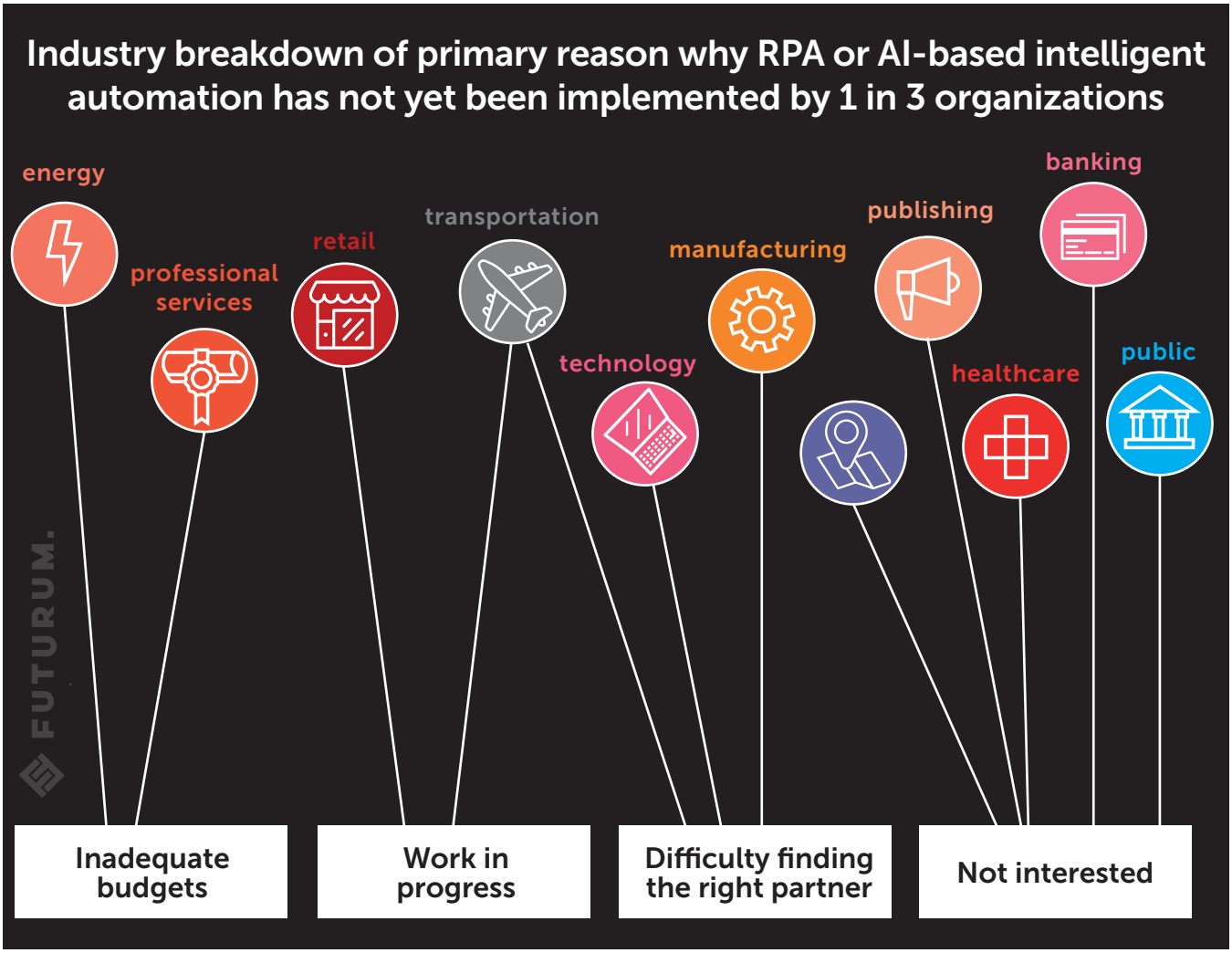
Lack of interest. The fact that 1 in 3 organizations in North America currently do not see the value of automation is somewhat troubling at this juncture, as the benefits of automation should already be clear to all decision-makers, regardless of company size or industry. Category giants and industry disruptors like Amazon, Google, Facebook, Walmart, Uber, Microsoft, and Salesforce have already proven that automation in particular, and AI-driven intelligent automation in particular, delivers layers of competitive advantages to companies by improving velocity and outcomes, cutting operational costs, and allowing companies to become more agile at scale. And yet, one-third of companies report not being interested in incorporating that cluster of value-adds to their business models.

In the aggregate, however (looking at all 1,000 organizations in our study), this lack of interest only amounted to 12% of organizations. This proportion of businesses not currently interested in incorporating automation into business operations reminds us of the bottom 15% of businesses that typically fall in the extreme laggard quadrant of our Digital Transformation Index. Laggards are organizations that generally struggle or fail to adapt to technology disruption and digital transformation like the rest of their industry. For many, this inability to keep up with the pace of change is the result of insular, change-averse cultures which first fail to identify new technology opportunities, and later resist the push to adopt and implement them. For others, the inability to implement new technologies at a competitive pace is not the result of denial or resistance, but rather a matter of operational inefficiency and not having adequate systems in place to easily incorporate new technologies and methods into their operations.



When we explored those organizations within certain industries who reported they were not utilizing RPA and/or AI-based intelligent automation in business operations, lack of interest was the most common reason. Even in industries like Banking and Finance and Media and Publishing, with generally high adoption of automation throughout the industry as a whole, there were still some laggards who simply said they weren't interested in automation solutions.

In fact, a general lack of interest was the top answer for roughly half of the eleven industries our study focused on: Banking and Finance, Healthcare and Pharma, Media and Publishing, the Public Sector, Transportation, and Travel and Hospitality. This suggests a lingering lack of understanding of the operational value of RPA and AI-based automation among laggard organizations in those industries despite the relatively high rate of adoption of their more agile and forward-looking counterparts.



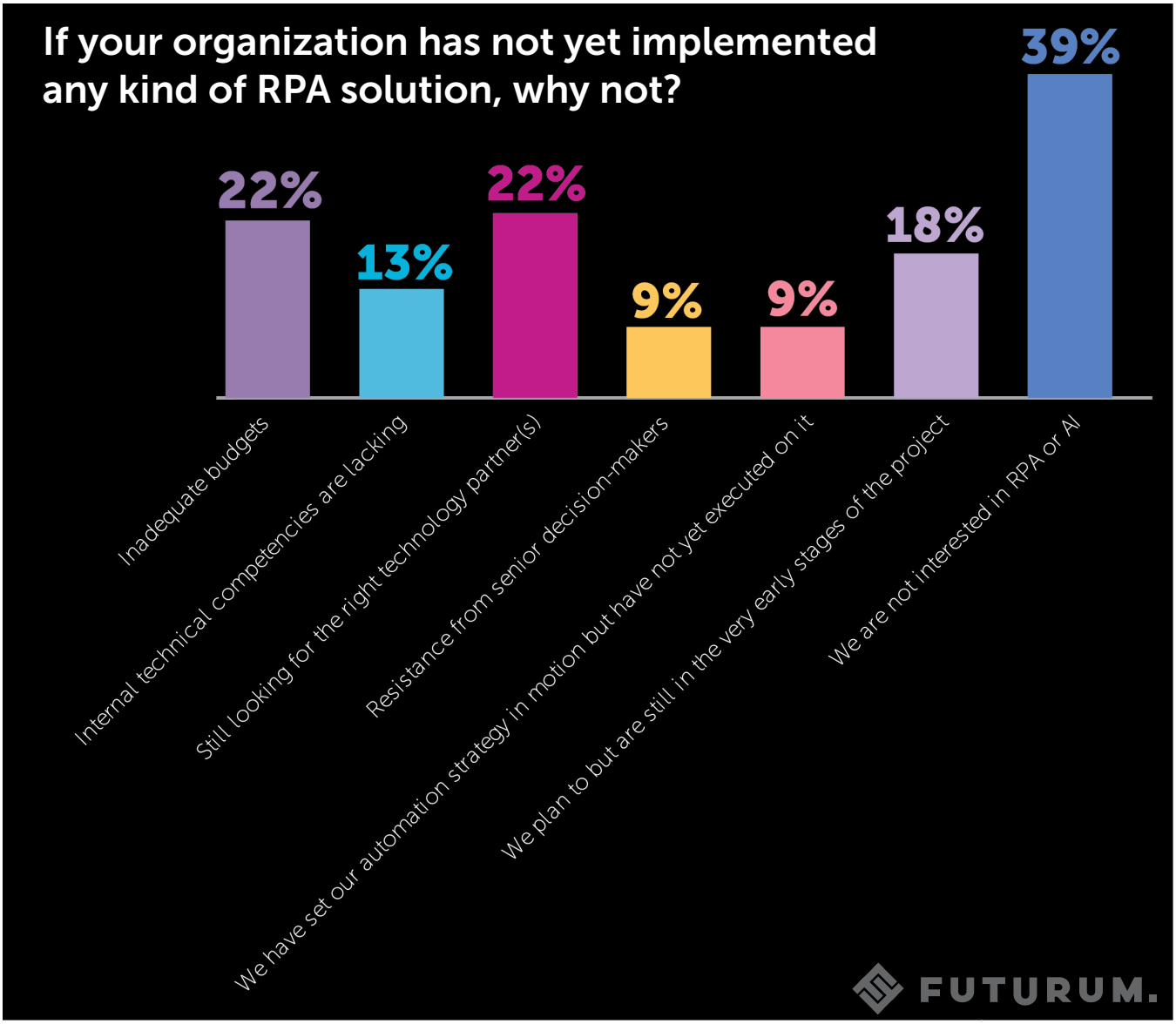
Work in progress. 18% of organizations report being in the process of identifying and selecting intelligent automation solutions but had not yet reached a point where they could actually be implemented. An additional 9% of organizations report having set an automation strategy in motion but have not yet executed it. Combined, these "in progress answers" account for 26% of responses.

We feel confident interpreting this data as meaning that **1 in 4 organizations who have not yet implemented RPA or AI-based intelligent automation are in the process of doing so.**

Partnership friction. The third most common reason why organizations have thus far failed to implement automation, with 22.4% of responses, is the inability to connect with the right technology partner(s). This may speak to a general inefficiency by RPA and AI-based automation solutions vendors to articulate the value of their solutions and connect with potential customers during the early stages of their search and selection.

Note that 78% of organizations not reporting this as a problem is encouraging. **For nearly 1 in 4 businesses though, the inability to identify, connect with, and forge a relationship with a technology partner remains a significant hurdle in the adoption and implementation of automation solutions.** This particular obstacle can be overcome by solutions vendors through a combination of targeted marketing, and a proactive approach to building a transparent, low-risk, and user-friendly testing process for prospective customers.

Budgets. Unsurprisingly, **over 1 in 5 organizations (22%) reported that inadequate budgets were a principal reason they had not yet implemented RPA or AI-based automation solutions.**



Inadequate budgets getting in the way of technology adoption is a common and recurring theme in digital transformation studies. What we generally observe is that the vast majority of organizations, having failed to anticipate the operational value of a new or emerging technology, will fall 1 to 2 years behind in budgeting for its testing and deployment. While the 25% of early adopters and technology leaders in any industry will quickly invest in new technologies, the 50% or so of organizations in the next adoption tier will generally be a year behind, and the slowest tier (the roughly 25% of laggards) will either a follow a year after that, or not at all. Typically, inadequate budgets once a technology is no longer new or emerging, suggest laggard behavior.

As our data already shows, over half of North American organizations have already implemented some kind of RPA or AI-based intelligent automation, and one quarter of organizations that haven't yet are already in the process of doing so. This, we believe, helps support our hypothesis that organizations that still struggle to articulate the value of automation internally, and thus fail to justify adequate budgets to test and implement the technology, are likely to fall into the laggard category.

Organizations that struggle the most to quantify the value of a new technology investment are typically the ones that struggle the most to justify adequate budgets for technology investments. This behavior can often be compounded by the ripple effect of slow technology adoption, making these companies less competitive in their respective industries. This typically results in below-average operational efficiency, above average operational costs, and fewer financial resources available for technology investments than their more adaptive, faster-moving, and more operationally efficient competitors.

Internal competencies. Only 13% of organizations which have not yet implemented automation report that internal technical competencies are still lacking. While we would prefer to see that number come down to zero, the fact that over 9 in 10 organizations that have not yet implemented RPA and AI-based intelligent automation solutions feel that this is not a hurdle for them is extremely encouraging. It speaks to the fact that implementing automation solutions is no longer a significant hurdle for the vast majority of organizations, and only a very small percentage of the business world still struggles to adapt to an otherwise manageable corner of the technology adoption landscape. In the aggregate (looking at all

1,000 organizations in our study), inadequate internal competencies only accounted for 4% of responses, meaning that **for 96% of organizations, internal competencies are not a significant hurdle standing in the way of RPA and other automation implementations.**

Resistance from the top. Lastly, we come to the subject of resistance. As we already pointed out, digital transformation laggards tend to be the most change-averse, risk-averse, and technology-skeptical organizations on the technology adoption spectrum. Some of the reasons for their inability to adapt are structural, but they also often demonstrate an unwillingness to invest in new technologies, and that unwillingness usually informs their inability to do so. Here, we find that **8% of organizations that still have not implemented any kind of RPA or AI-based automation have been held back by resistance from senior leadership and decision makers.**

While that number would ideally be zero, the fact that fewer than 10% of decision makers among companies that have not yet implemented automation solutions in their organizations are the reason their companies have fallen behind, is encouraging. Looking at our study in the aggregate (all 1,000 organizations), the percentage of companies whose business leaders are holding them back from automation because of resistance only amounts to 3%.

Section 4. The adoption of RPA, AI, and Intelligent Automation solutions is growing at a rapid clip.

Our research shows that 75% of businesses in North America have already implemented some type of automation solution like RPA or Artificial Intelligence.

An impressive 75% of organizations intend to invest in RPA between now and 2025. These businesses can be broken down into three main categories:

Businesses that plan to invest in RPA/Intelligent Automation solutions in the next 12 months - 44%

Businesses that plan to invest in RPA/Intelligent Automation solutions in the next 12 to 24 months- 18%

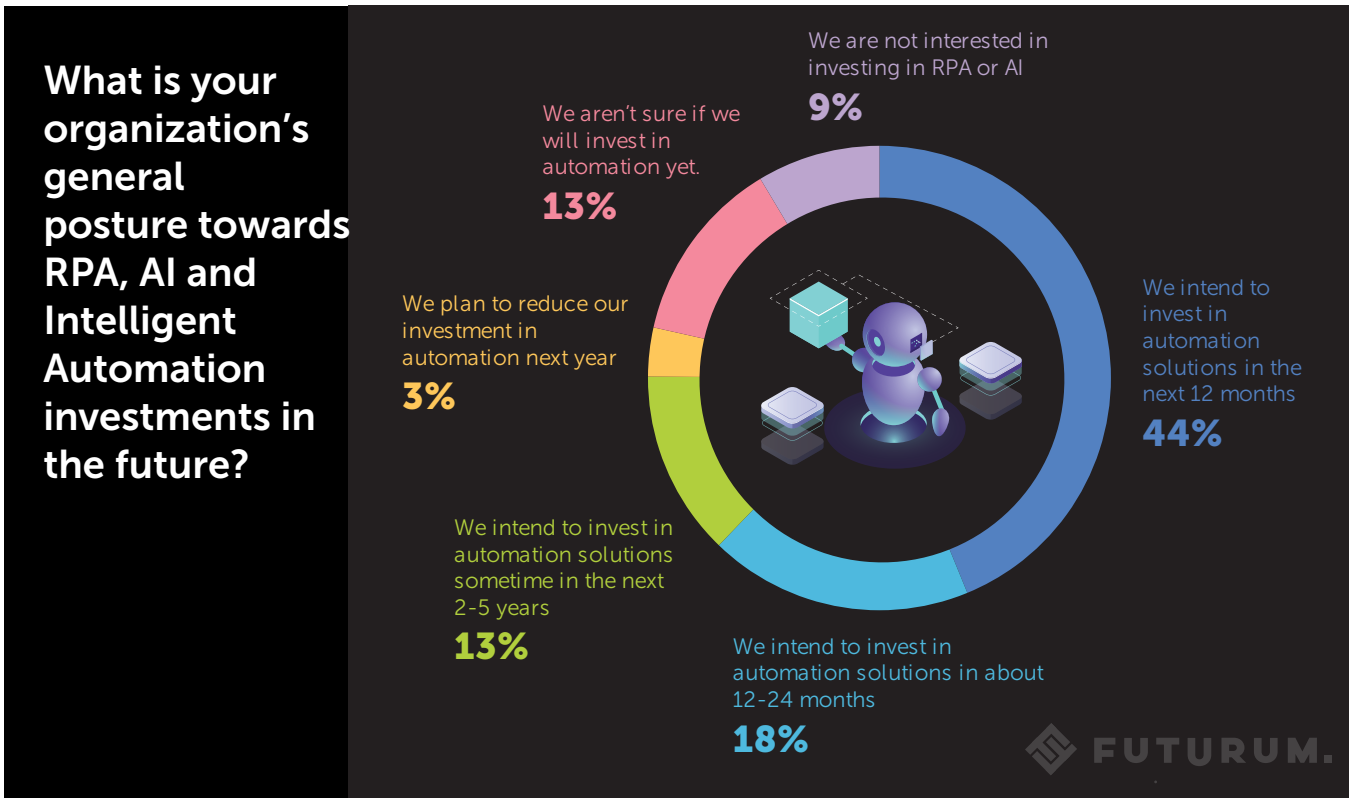
Businesses that plan to invest in RPA/Intelligent Automation solutions in the next 2 to 5 years - 13%

The fact that 44% of businesses do not intend to wait a year, or two, or five, to invest in RPA or AI-powered intelligent automation solutions speaks to the immediacy of the opportunity—and of the risk of not adapting quickly enough—to the wave to the wave of automation currently transitioning businesses away from 20th century operational models to 21st century operational models.

13% of organizations are currently unsure whether or not they will invest in RPA. Unlike organizations that have no interest in investing in RPA, these are businesses that are in the process of evaluating the benefits of the technology to their organizations. it is likely that these businesses will eventually decide to begin automating, and we note that their number matches the number of businesses that report they plan to implement RPA or other automation solutions in 2 to 5 years.

Only 9% of automating organizations report not currently being interested at all in RPA, now or in the future.

Only 3.4% of automating organizations report planning to reduce their investment in RPA next year. This does not necessarily reflect a lack of faith in RPA and is likely to signal instead that their deployments are already maturing, and that they have already reached most of their automation objectives.



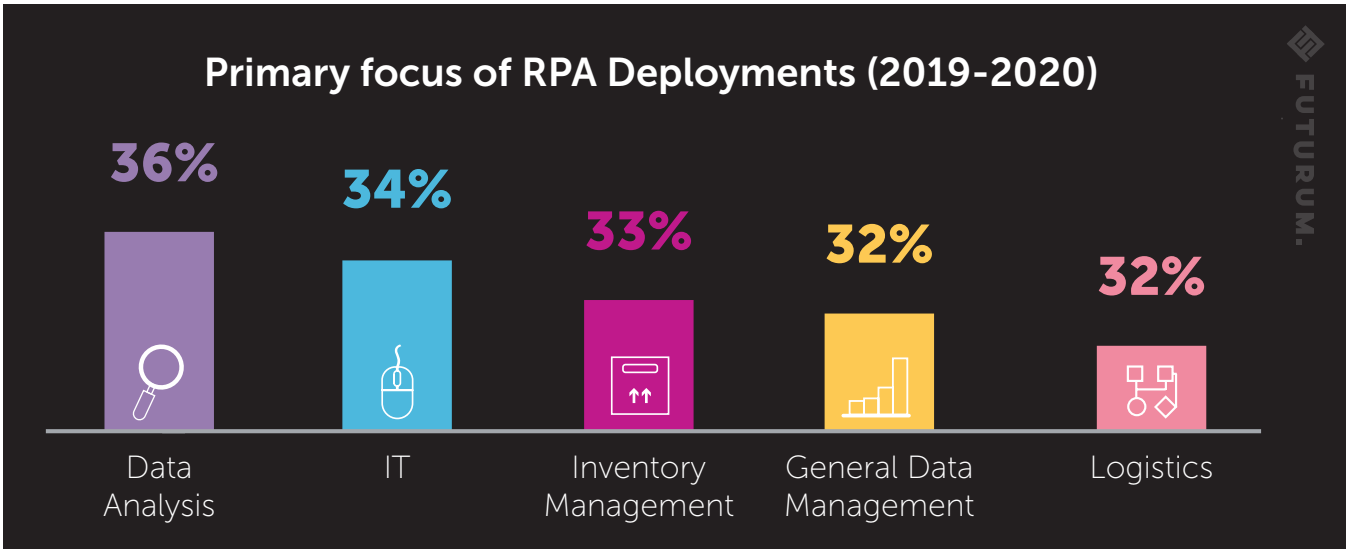
Section 5. Where are RPA/Intelligent Automation investments being made, and by what business functions?

Our data indicated that RPA, AI and IA have already gained broad and relatively even acceptance across multiple key business functions, from Manufacturing and Inventory Management to Marketing and Customer Service.

Primary focus of current RPA deployments: When asked about which business functions RPA deployments already serve, the most common reply by North American organizations was Data Analysis (36%).

Rounding out the top 5 business functions already served by RPA or AI-powered intelligent automation deployments are IT (34%), Inventory Management (33%), General Data Management (32%), and Logistics (32%).

We are not surprised to see businesses report data analytics as the most common business function already served by RPA or intelligent automation, nor are we surprised that IT, Inventory, Logistics, and Data Management took an early lead in RPA deployments.

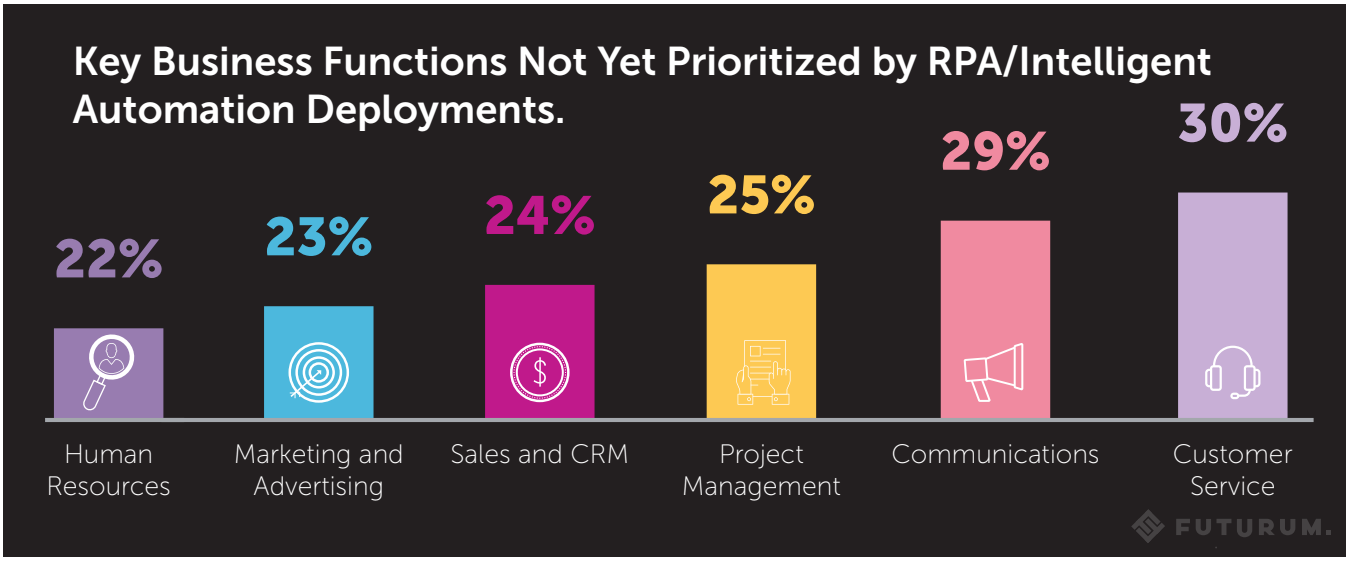


Manufacturing Caveat. The reason why Manufacturing did not make the top five is that a full 16% of organizations with existing RPA or AI-powered automation implementations signal that Manufacturing is not part of their business operations. This figure is almost double the proportion of "not applicable to our business" responses received for other business functions (like Analytics, Project Management, and Marketing, which all came in below 10% of "not applicable" responses).

Note that despite such a high proportion of "not applicable" responses for Manufacturing, a healthy 32% of organizations with existing RPA implementations list Manufacturing as one of their business functions already benefiting from the technology. All things being relative, a flexible read on this data puts Manufacturing at the top of the business function list of RPA deployments. From a net numbers perspective however, Manufacturing is almost on equal standing with Logistics' 32% implementation, in sixth place.

32% of organizations with existing RPA or intelligent automation implementations list Manufacturing as one of their business functions already benefiting from the technology.

Need, Capabilities, and Value. Why some software focused RPA or intelligent automation solutions implementations still trail Data Analytics and General Data Management. Among the business functions already being prioritized for RPA or intelligent automation deployments, the weakest are currently Human Resources (22%), Marketing and Advertising (22%), Sales and CRM (24%), Project Management (25%), Communications (29%), and Customer Service (30%).



Before we dig into why these categories of business functions have met with less enthusiasm than others with regard to RPA/Intelligent Automation deployments, it is important to point out that **nearly 1 in 3 organizations already leverage RPA to improve Customer Service and Communications**, and **roughly 1 in 4 organizations already leverage RPA/Intelligent Automation to improve Project Management, Sales, CRM, Marketing, and Advertising.**

These are exceptionally strong numbers for a technology category that, until very recently, received very little mainstream attention, and tended to be obscured by broader Digital Transformation technology categories like the Cloud, Mobility, AI, and Edge Compute.

Overall, we feel the reasons business functions like HR, Marketing and Advertising, Sales and CRM, Project Management, Communications, and Customer Service have not yet seen as strong of a tendency to adopt RPA or some other form of IA-powered intelligent automation ultimately come down to three simple things: Culture, Complexity, and Priorities.

Culture. In general, nomenclature like "Robotic Process Automation," "automation" or even "intelligent automation" lends more easily to engineering-centrix business functions like Manufacturing, Logistics, and IT than to relational functions like HR, Marketing, and Sales. "Automation" as a technology category is therefore more likely to initially attract the attention of IT engineers, data engineers, manufacturing engineers, and logistics-focused engineers than of Sales, Marketing, HR, and Customer Service managers, who may initially misjudge the technology based on how it is named and branded.

Nearly 1 in 3 organizations already leverage RPA/Intelligent Automation to improve Customer Service and Communications. FUTURUM.

Complexity. It is also more likely for engineering centric business functions like IT, Data Management, Logistics, and Manufacturing to build morelayered, complex, and customized technology ecosystems to manage their operations than for traditionally less engineering centric business functions like Marketing, HR, Sales, and Customer Service.

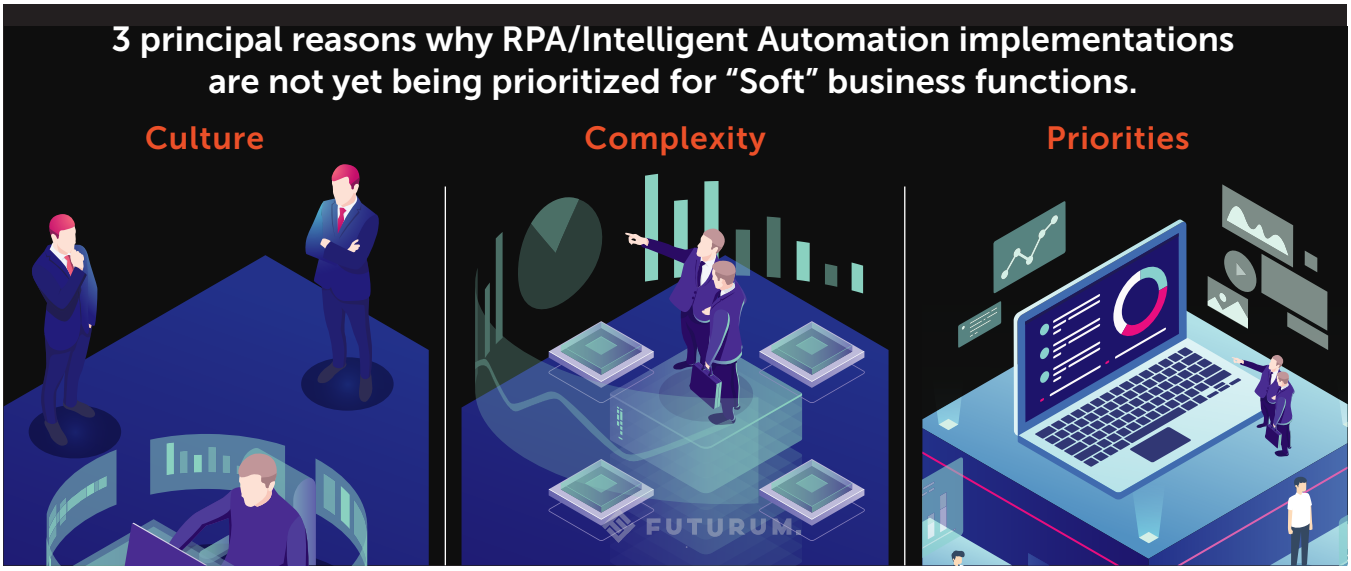
While the former might naturally complement their solutions environment with RPA or AI-powered intelligent automation solutions, the latter are more likely to stick with ready-to-use technology solutions, and endure the limitations of those solutions until something better comes along. Granted, as technology solutions increasingly embed themselves into every business function, and software engineering becomes a core competency within departments that were not traditionally technology dependent, the gap between engineering-centric departments and non-engineering centric departments is quickly eroding.

Priorities. While our data shows broad and company-wide implementations of RPA or AI-powered intelligent automation solutions, most businesses are likely to begin with areas of highest

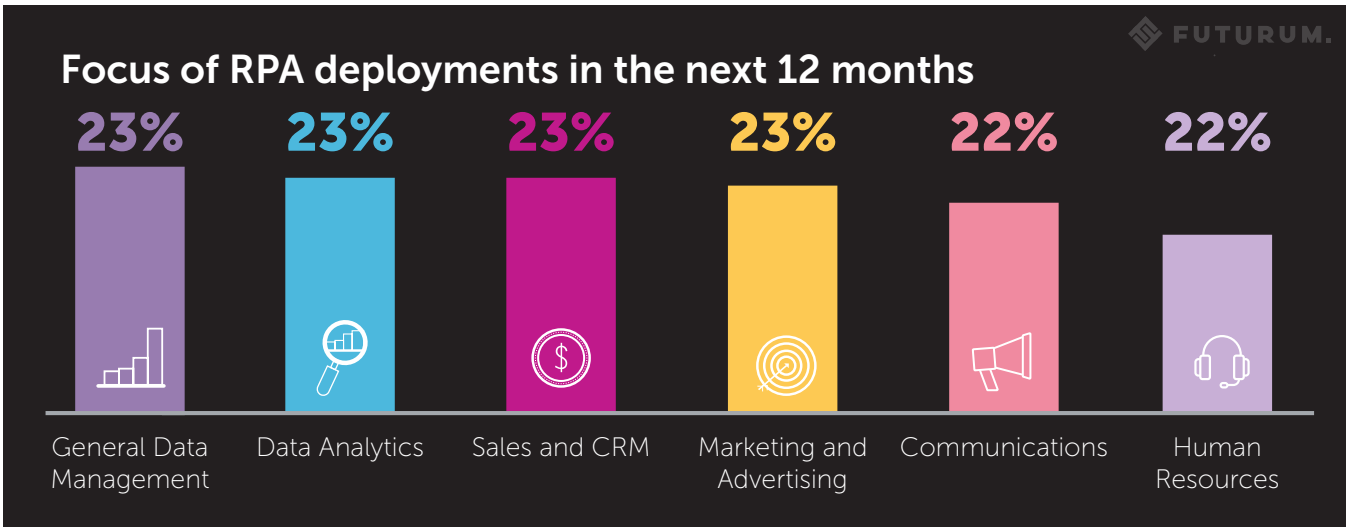
ROI and minimal friction. Our adjacent research on digital transformation investments suggests that businesses tend to first prioritize internal efficiency objectives like operational efficiency and cost-efficiency, and transition to externally-facing objectives like Sales and Customer Support once their internal efficiency improvement objectives have been met.

The general focus on tackling internal efficiency before customer-facing efficiency with technology deployments appears to apply especially well to RPA. This prioritization also makes practical sense, as internally-facing business functions like Logistics, Data Analytics, and Manufacturing tend to already enjoy a higher proportion of technically-savvy resources that can implement RPA or other automation solutions than customer-facing business functions. That disparity in technical staff may also help explain why technology solution implementations, and particularly RPA, may occur faster in internally-facing departments.

1 in 4 organizations already leverage RPA/Intelligent Automation to improve Project Management, Sales, CRM, Marketing, and Advertising.



Looking to the future: Looking forward, we find that the most popular business functions slated to be augmented by RPA implementations in the next 12 months are General Data Management (23% percent), Data Analytics (23%), Sales and CRM (23%), Marketing and Advertising (23% percent), Communications (22% percent), and Human Resources (22%).



Here, we begin to see a shift in focus that we alluded to in the previous section: A transition from internally-facing business functions in the early stages of technology adoption to customer-facing business functions once internal efficiency objectives begin to be met, and the organization is ready to begin shifting its attention to market efficiency.

We note that Data Analytics and Data Management remain extremely strong areas of focus for RPA/IA implementations. This illustrates the extent to which RPA/IA solutions tend to be a natural fit for data analysis and management, but it also speaks to the importance that data now plays in business management as a whole. Organizations are still primarily focused on building their data management, analysis, and distribution infrastructure as fast as they can.

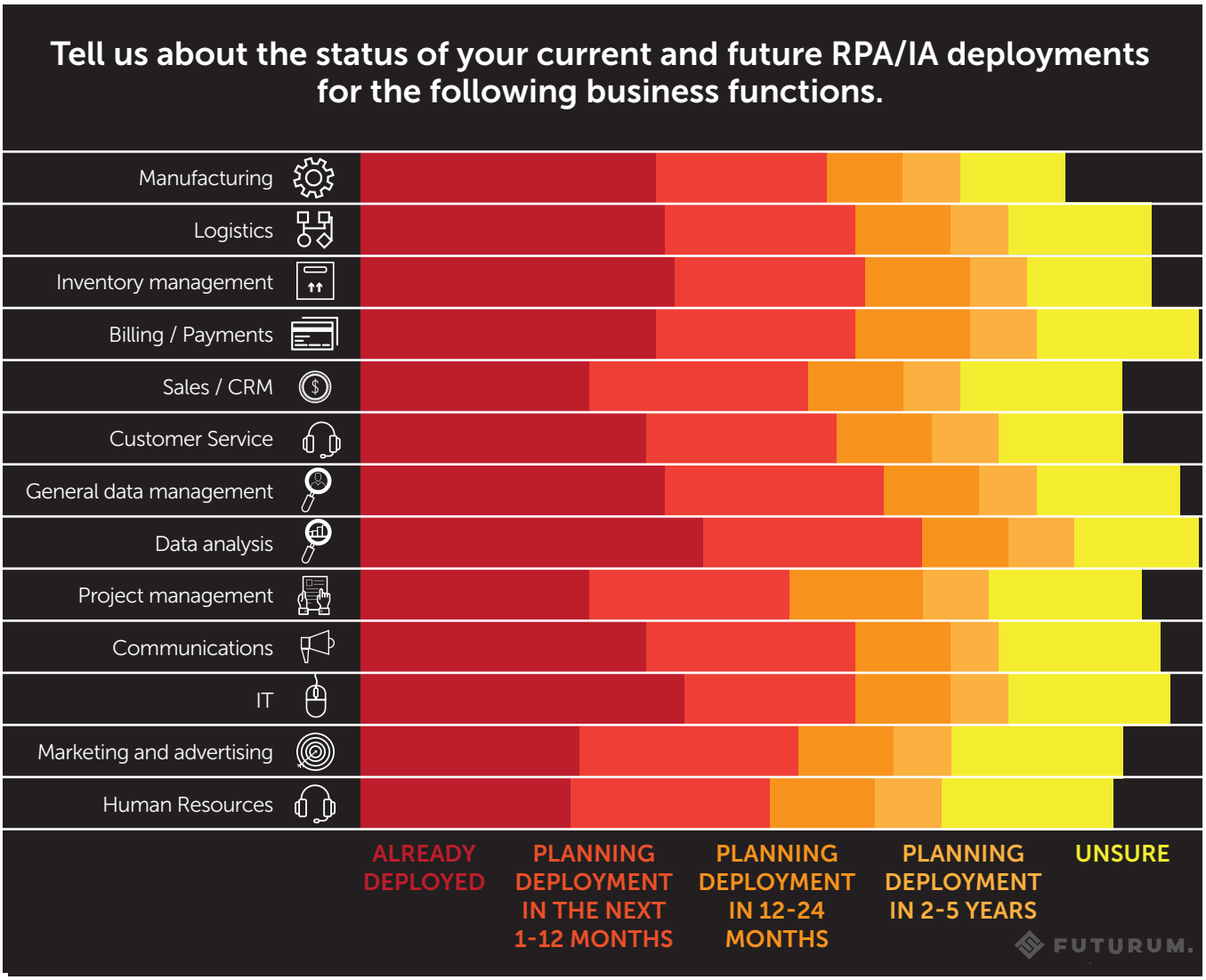
The transition from internal efficiency objectives to customer-facing efficiency objectives is difficult to miss. While business functions like Sales, Customer Service, Marketing, and Communications were among the least prioritized for RPA/IA implementations, we now see a clear focus on augmenting Sales and CRM capabilities with RPA/IA solutions. In fact, **RPA/IA implementation goals in the next 12 months are exactly the same for Data Analytics and Sales/CRM RP: 23% of businesses report plans to deploy RPA/IA for both.** This symmetry between RPA/IA implementations focusing on Sales/CRM and Data Analytics in the coming year represents the clearest sign yet that RPA/IA solutions are gaining traction across the enterprise, and that any perceived limitations of RPA/IA solutions with regard to complexity and versatility are quickly dissipating.

RPA/Intelligent Automation deployments until now have mostly focused on internally-facing business functions. Starting in 2020, these deployments will also begin to focus on customer-facing business functions.

As RPA/Intelligent Automation solutions prove to be increasingly easy to implement, versatile, and effective, it is therefore no surprise that the next wave of automation implementations will focus on Sales, Customer Relationship Management, Marketing, Advertising, Communications, and even HR.

Looking 12 to 24 months into the future, the picture changes again, with Project Management, Inventory Management, Billing, and HR rising to the top of the third wave of implementations, which is to say that these three business functions tend to mark the lowest priority for the majority of businesses with regard to RPA implementations. While we understand the need to prioritize, one area that we feel many organizations may be undervaluing automation is Project Management.

With only 7% of businesses reporting that Project Management does not apply to their business model, we feel that Project Management should be moved from this third tier of RPA/IA implementations to the first tier, alongside Data Analytics, Logistics, and Manufacturing. Here's why: The importance of leveraging RPA and intelligent automation to improve speed to market and operational efficiency cannot be divorced from effective Project Management. This betrays a disconnect between organizations clearly focusing their automation implementations on internal operational efficiency first, and their simultaneous lack of prioritization of Project Management. We caution that any failure to include Project Management in the first wave of automation implementations within the scope of an operational efficiency improvement initiative would be a grave oversight.



Section 6. Best-in-class automation augments, not replaces.

8 out of 10 businesses that have already implemented some form of RPA believe that automation as a whole is most effective when it augments rather than replaces human workers.

Human augmentation, or how human-machine partnerships provide a better value proposition than human replacement: Based on our research, 82% of businesses that have already implemented RPA agree that automation is best leveraged to assist human workers with an eye towards improving operational efficiency, and 81% of those businesses also agree that automation is best leveraged to assist human workers with an eye towards improving their productivity.

In other words, roughly 8 in 10 businesses already in the process of measuring the impact of RPA implementations across their own organizations believe that automation is best utilized to augment human workers rather than replace them. This insight contradicts the widely feared hypothesis that automation is mostly seen as a job killer, or as an opportunity for businesses to replace human workers with machines or automation.

80% of businesses that have already implemented RPA/IA also agree that automation is best leveraged to assist human workers in reducing human error.

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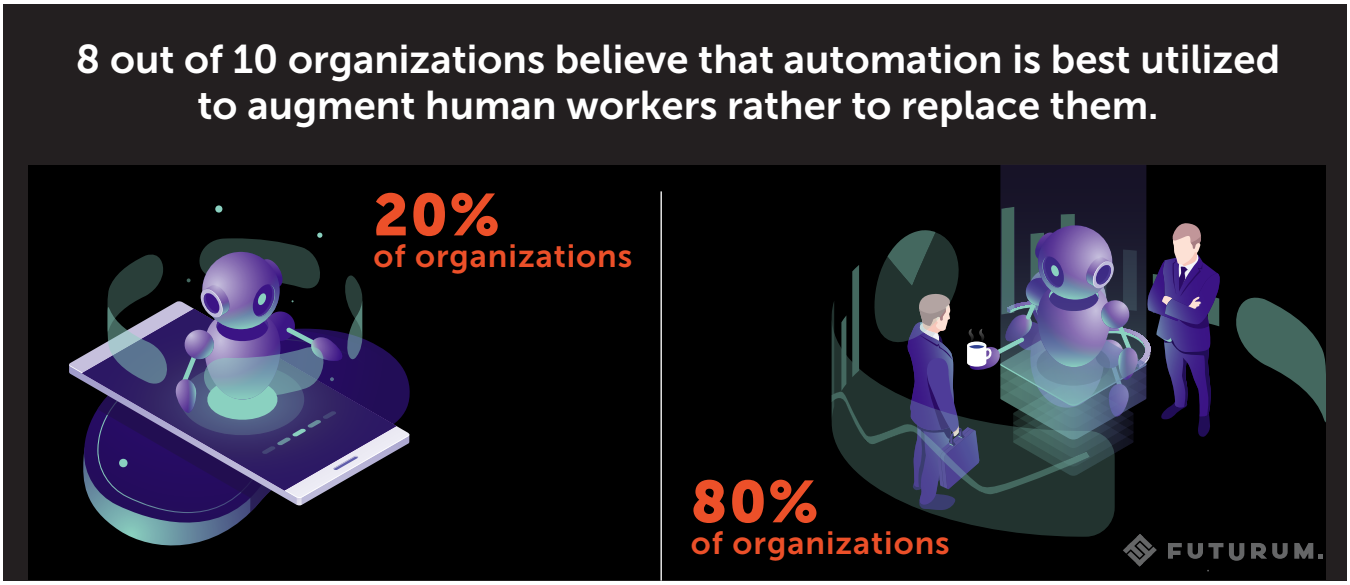


Using automation tactically to shift high value workers away from low-value tasks. In addition to the 8 in 10 ratio of businesses that believe in leveraging automation to augment human worker productivity, efficiency, and outcomes, 75% of businesses that have already implemented RPA/IA solutions also agree that automating processes that human workers shouldn't have to do in the first place, makes a lot of sense.

Again, **the objective here is not to replace humans with automation, but rather to free human workers from having to perform low value and time-consuming tasks.** Through a careful application of automation aimed at tackling low-value tasks, **these workers can see their bandwidth expanded and their focus shifted to higher value tasks.**

The objective for organizations should not to be to replace humans with automation, but rather to free human workers from having to perform low value and time-consuming tasks, so that their focus can be shifted to higher value tasks.

Automating project management tasks, for example, or departmental communications, or billing, or multichannel content publishing, can increase the productivity and bandwidth of high value human workers by automating tasks that would have otherwise taken up hours of their day. Think of this shift in terms of opportunity costs: Does it make sense to have a project manager spend ten hours of her week creating and managing project timelines manually, or does it make more sense to automate these processes so that she can instead spend those ten hours managing more projects, supporting her team, and improving outcomes?

The fact that 3 in 4 businesses already understand that using automation tactically in order to optimize their employees' time and help them create more value, as opposed to simply replacing them, is extremely encouraging.

Nevertheless, replacing humans with automation remains an option. While nowhere near as popular as human-machine partnerships and worker augmentation, 67% of businesses that have already implemented RPA still believe that automation is best leveraged to replace human workers when that replacement improves operational efficiency. Similarly, 63% percent of those businesses also believe that replacing human workers with automation makes sense when it can help them cut operating costs.

Replacing human workers with intelligent automation is most justified when improving operational efficiency and/or cutting operational costs are prioritized above all other internal initiatives

For the most part, we interpret this mostly as a tactical calculation rather than a purely ideological one: Where it makes financial sense to replace humans with automation, for-profit businesses may have no choice but to do so. We continue to see the job-eroding impact of that type of automation scheme in manufacturing, as the repetitive and precise nature of production lines favors the reliability, speed, precision, and high productivity of machines over the fallibility of human workers.

Increasingly, with the advent of RPA and AI-based intelligent automation, we have observed a shift from blue-collar job automation to white-collar job automation. Data analytics, for example, used to be the responsibility of human data analysts. Now, data analysis is mostly handled by software. Likewise, functions like billing, payment processing, shipping, quality control, even fleet management, can be reliably automated. Based on our research, as many as 2 in 3 companies believe that where automation could help cut operating costs and/or improve operational efficiency, replacing a human worker with an automation solution may be worthwhile.

The replacement versus augmentation equation ultimately boils down to ROI: Looking at the above value calculus through the prism of opportunity cost once again, the question becomes this: Cost for cost, and value for value, does it make more sense to replace human worker A with an automated solution, or does it make more sense to augment worker A with automation solutions that will help increase his productivity, lower operational costs, and improve outcome. If the value of augmenting that worker through select automation is higher that replacing that worker altogether with automation, then augmentation should be the outcome. If, however, it is not, replacement is probably the most likely outcome.

On the bright side, more companies with experience implementing automation across their business feel that augmentation is a preferable strategy than companies that feel that replacement is.

Case in point: Only 55% of businesses that have already implemented RPA feel that automation is best leveraged to replace humans wherever and whenever possible.

Tell us how you feel about the following statements regarding the general role of process automation in business.

	STRONGLY AGREE	SOMEWHAT AGREE	UNSURE	SOMEWHAT DISAGREE	STRONGLY DISAGREE
Automation is best leveraged to replace human workers in order to cut operating costs.	26%	37%	12%	18%	79%
Automation is best leveraged to replace human workers in order to improve operational efficiency.	28%	38%	13%	14%	6%
Automation is best leveraged to assist human workers in order to improve operational efficiency.	43%	39%	10%	4%	4%
Automation is best leveraged to assist human workers and improve their productivity.	42%	39%	11%	5%	3%
Automation is best leveraged to assist human workers and reduce human error.	44%	36%	11%	6%	2%
Automation is best leveraged to automate processes that human workers should not have to waste time on in the first place.	37%	37%	14%	9%	3%
Automation is best leveraged anywhere a human worker can be replaced by a machine.	23%	32%	17%	17%	11%

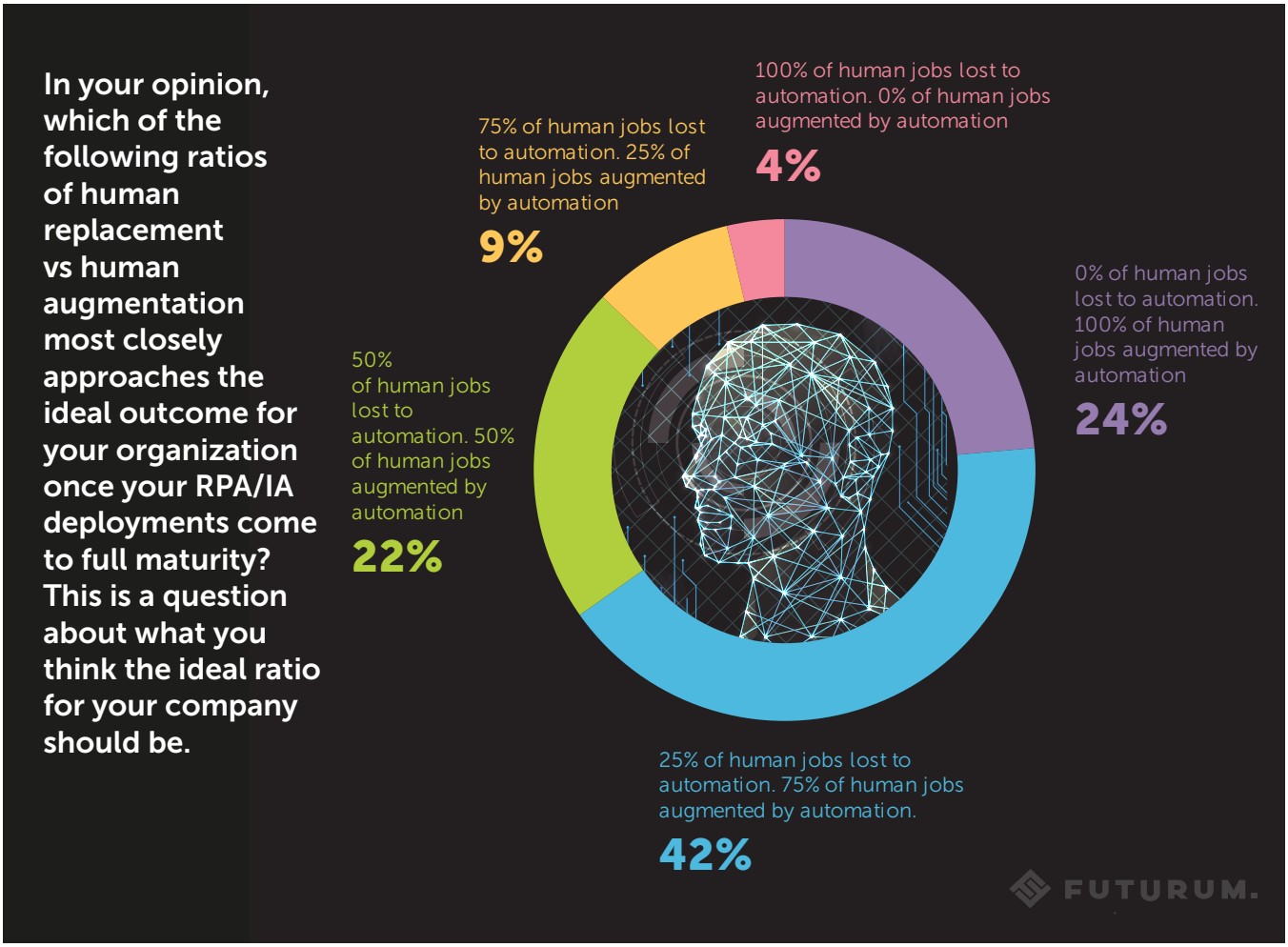
In fact, when asked which ratio of human replacement versus human augmentation they would consider ideal at the end of their RPA/IA deployment journey, 65.2% of organizations reported that 100 to 75% augmentation and 0 to 25% of human replacement would be ideal. In other words, **a full two-thirds of organizations feel that minimizing human replacement and maximizing augmentation is the ideal RPA/IA deployment model.**

More encouraging still, **nearly 1 in 4 businesses feel that the ideal automation deployment model replaces zero human workers, and instead augments 100% of them.**

In contrast, only 22% of organizations feel that the ideal ratio of augmentation to replacement is 1:1.

On the other side of the augmentation versus replacement ratio calculus, only 9% of organizations feel that a 75% rate of replacement versus a 25% rate of augmentation is the ideal automation deployment model.

Lastly, only 4% of businesses declare pursuing a 100% human replacement RPA strategy as a business goal.



Automation-mature businesses expect to see far more human augmentation than human replacement in their future. When asked which ratio of human replacement versus human augmentation they expect to actually see once their automation deployments come to full maturity, 60% of businesses responded that they would fall somewhere between 75 and 100% augmentation and between 0 and 25% replacement.

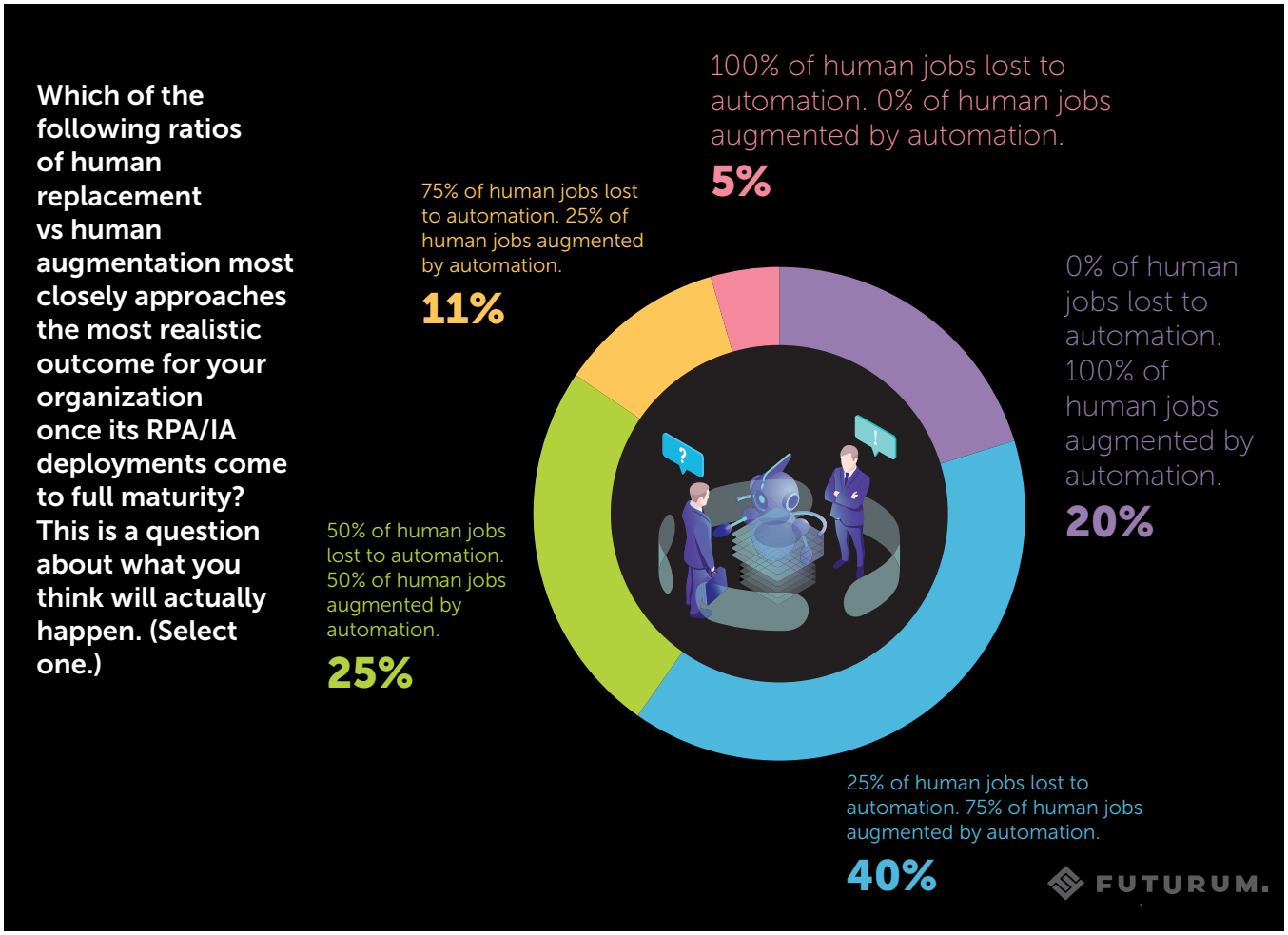
Only 28% of businesses believe that they will see an even 1:1 ratio of augmentation to replacement.

Only 11% of businesses expect that they will see a 75% rate of replacement against a 25% rate of augmentation.

Lastly, only 5% of businesses expect that 100% of their human workers will have been replaced by automation at the conclusion of their RPA implementation journey.

While these numbers are slightly more pessimistic than the ones provided by the same businesses when asked about the augmentation versus replacement ratios they considered ideal for their organizations, the difference between ideals and expectations can be measured in low single digits, and remain very much aligned.

In the end, **nearly 5x more businesses expect to see mature RPA/IA deployments result in 100% human worker augmentation as businesses expect to see mature RPA/IA deployments result in 100% human worker replacement, and roughly twice as many businesses believe that human augmentation will generally prevail over human replacement.**



Section 7. Resistance driven by fear is a significant obstacle.

Fear of being replaced by automation appears to be the biggest source of pushback against automation.

When asked to rate the level of resistance to RPA by role, 30% of businesses reported high resistance from general blue-collar staff, versus 24% from general white-collar staff, 21%from blue-collar middle managers, 18% from white-collar middle managers, and only 12% and 14% respectively from senior leaders and C-level executives.

The progression here is abundantly clear:

- With the exception of C-level executives, the lower on the corporate ladder, the higher the resistance to automation.
- At similar seniority levels, blue-collar roles show a higher degree of resistance to RPA than their white-collar counterparts.

Internally, rate the level of resistance specifically to RPA that you are encountering from the following categories of stakeholders.

	HIGH RESISTANCE	SOME RESISTANCE	UNSURE	SOME ENTHUSIASM	HIGH ENTHUSIASM	NOT APPLICABLE TO MY ORGANIZATION
Senior Leadership (C-level) and Board	14%	23%	21%	18%	17%	5%
Senior leadership but not C-level	12%	25%	25%	18%	15%	5%
Middle Management: White collar	18%	24%	23%	20%	12%	4%
Middle Management: Blue collar	21%	26%	23%	16%	9%	5%
General staff: White collar	24%	28%	21%	16%	7%	3%
General staff: Blue collar	30%	28%	21%	9%	6%	5%

Shifting the topic from RPA to AI-based automation, we asked the same question, and saw a similar pattern, with 24% of general blue-collar staff expressing the highest degree of resistance, followed by 20% of general white-collar staff, 17% of blue-collar middle managers, 15% of white-collar middle managers, and only 13% and 16 % respectively from senior leaders and C-level executives.

Internally, rate the level of resistance specifically to Artificial Intelligence solutions that you are encountering from the following categories of stakeholders.

	HIGH RESISTANCE	SOME RESISTANCE	UNSURE	SOME ENTHUSIASM	HIGH ENTHUSIASM	NOT APPLICABLE TO MY ORGANIZATION
Senior Leadership (C-level) and Board	16%	20%	22%	18%	20%	5%
Senior leadership but not C-level	13%	21%	24%	20%	18%	4%
Middle management: White collar	15%	23%	23%	22%	13%	4%
Middle management: Blue collar	17%	27%	24%	17%	9%	6%
General staff: White collar	20%	28%	22%	18%	8%	4%
General staff: Blue collar	24%	30%	23%	11%	7%	6%

Lastly, we asked the same question again, but this time, we moved away from RPA and AI-based automation to a more generic "automation in general."

The same pattern repeated itself again: 22% of businesses reported high resistance from general blue-collar staff, compared to 20% from general white-collar staff, 16% from blue-collar middle managers, 15% from white-collar middle managers, and only 12% and 15% respectively from senior leaders and C-level executives.

All three versions of the question saw higher degrees of resistance from the bottom of the corporate ladder, and progressively less resistance as we climbed toward senior leadership roles. Curiously, in all three instances, we also saw a higher degree of resistance from C-level executives than we had from senior leaders under their authority.

Resistance to automation is mainly a product of fear. We interpret the higher rate of resistance to automation from general staff and blue-collar roles as a reflection of the fear from individuals in these roles of being replaced or disrupted by automation solutions. The lower in seniority, the higher the fear of being replaced or disrupted. The nearer to blue-collar tasks, the higher the fear of being replaced or disrupted.

With regard to the uptick in resistance from the C-Suite, we also suspect that fear is the culprit, though fear of a different kind: Automation is technology, technology is change, change is an unknown variable, and unknown variables are risks. Therefore, C-suite executives naturally feel that investments in disruptive technologies that are likely to lead to significant changes in their organizations present a risk of failure that exceeds the threshold of their comfort zones. This is natural, and to be expected. Note that high enthusiasm always trumps high resistance for C-level roles, no matter how the question is asked, or what type of automation is being discussed. We feel it likely that high levels of resistance from C-suite executives with regard to automation may be an indicator that the organization they lead falls into

the laggard or slow-adopter quadrant of digital transformation adaptability.

Most roles seem more comfortable with AI-based, intelligent automation than RPA. Looking at these numbers, we notice a roughly 1 to 5% higher degree of resistance to RPA than to AI-based intelligent automation. Indeed, while 30% of general blue-collar staff is highly resistant to RPA, only 24% are highly resistant to AI-based automation. Likewise, 24% of general white-collar staff is highly resistant to RPA versus only 20% being highly resistant to AI-based automation, and so on. We interpret this resistance gap against AI-based automation versus RPA as an indication of the degree to which each category of role fears being replaced or disrupted by these two categories. Clearly, RPA presents a marginally bigger threat (at least perceived) to the vast majority of roles outlined in this section of our study than AI-based automation.

We do note that senior executives and C-level executives appear to be more highly resistant to AI-based automation than to RPA, however, which is a departure from the trending seen across the rest of their organizations. The most likely conclusion to be drawn from this data is that senior and C-level executives may feel that their tenures are more threatened by AI-based automation than by RPA solutions, particularly with regard to analytics and AI-assisted decision-making. It could be argued that for roughly 1 in 10 senior decision-makers, high level AI-based analytics solutions may be perceived as encroaching on their decision-making responsibilities and, therefore, a threat. This would be especially the case should those solutions decision-making algorithms outperform their human counterparts. While 20% of C-level executives welcome the assistance of AI-based automated solutions with a high degree of enthusiasm, it is not all that surprising that 16% would perceive these same tools as threats to their value and tenure more than as augmentation and outcome optimization vehicles.

Internally, rate the level of resistance to automation in general from the following categories of stakeholders.

	HIGH RESISTANCE	SOME RESISTANCE	UNSURE	SOME ENTHUSIASM	HIGH ENTHUSIASM	NOT APPLICABLE TO MY ORGANIZATION
Senior Leadership (C-level) and Board	15%	19%	23%	18%	22%	5%
Senior leadership but not C-level	12%	22%	20%	25%	17%	4%
Middle management: White collar	15%	21%	24%	23%	13%	4%
Middle Management: Blue collar	16%	23%	27%	18%	9%	6%
General staff: White collar	20%	25%	23%	18%	10%	5%
General staff: Blue collar	22%	31%	21%	12%	7%	6%

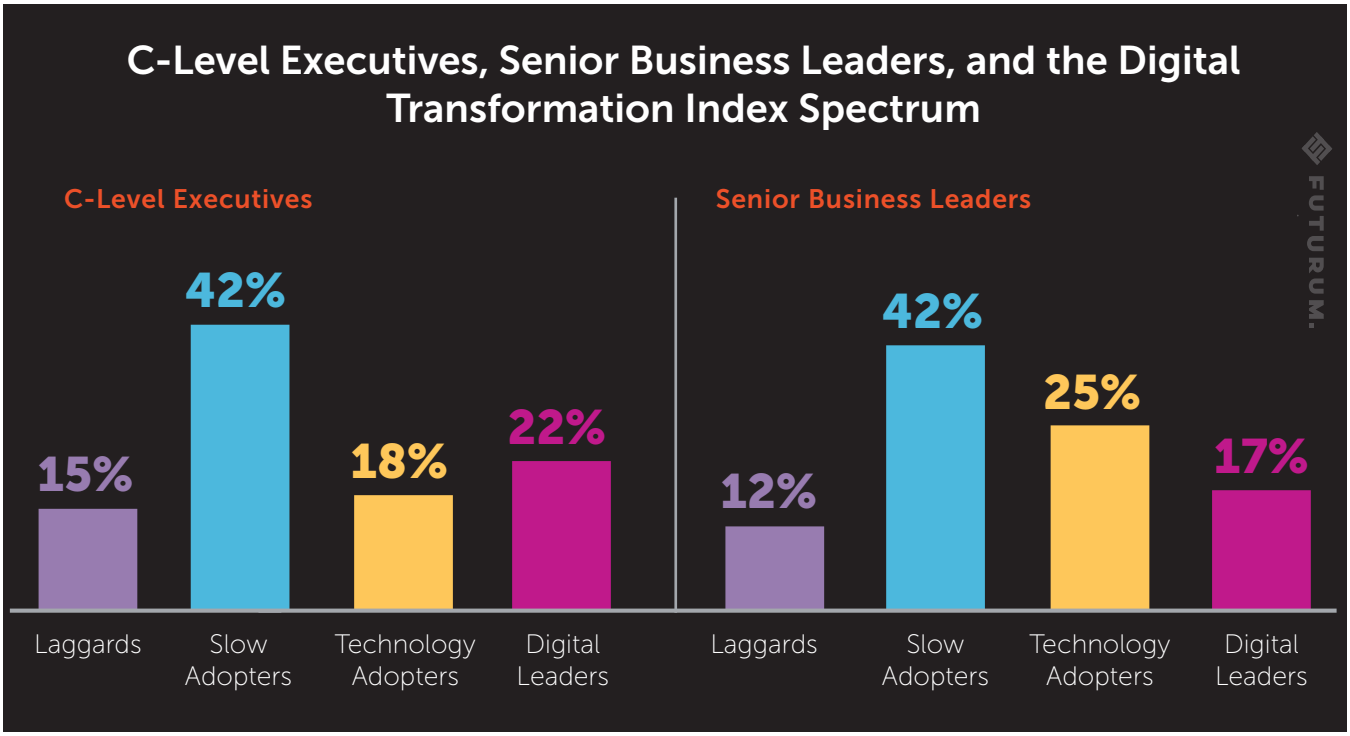
"Automation in general" is less threatening than RPA and AI-based automation. Our data suggests a marginally lower rate of resistance against "automation in general" than more specific types of automation—in this case RPA and AI-based intelligent automation. This suggests that human workers, whether blue-collar, white-collar, low-wage or high wage, tend to view various types of automation differently, based on how each will directly impact them. Essentially, their reaction to a particular type of automation is, at least in part, based on their expectation of that technology's direct impact on their job function. The more a worker believes that a particular type of automation threatens his or her job, the higher the resistance. Conversely, the more a worker believes that a particular type of automation may help him or her become more productive or valuable to their organization, the higher the enthusiasm for it.

Thus, "automation in general" allows workers to project their own optimism or pessimism onto the subject of automation in their own workplace and provides us with an honest view of their general disposition toward automation in general.

What we find is that 53% of general blue-collar staff and 45% of general white-collar staff are apprehensive towards automation in general, while only 14% and 15%, respectively, feel enthusiastic about it. Between 1 in 4 and 1 in 5 general staff workers are unsure how to feel about automation in general.

39% of blue-collar middle managers and 36% of white-collar middle managers are apprehensive toward automation in general, while 28% and 17% respectively, feel enthusiastic about it. Roughly 1 in 4 are unsure how to feel about automation in general.

Only 34% of senior business leaders and 35% of C-level executives—or only one-third of the senior leadership tier in North American organizations—feel apprehensive toward automation in general. Conversely, 42% of senior business leaders and 39% of C-level executives feel enthusiastic about it. Roughly 1 in 5 business leaders and C-level executives are still unsure how they feel about automation in general. This data tracks with our Digital Transformation spectrum which separates businesses into three main groups: Digital leaders (high enthusiasm for new technology solutions, and fast adoption), digital laggards (high resistance to new technology solutions, and slow adoption), and everyone else (methodical adopters of new technology solutions).



Section 8. Good News: More positive than negative.

On the whole, the projected impact of RPA or AI-powered intelligent automation implementations on all business roles is expected to be more positive than negative.

When asked if RPA deployments over the course of the next 5 years would have a positive or negative effect on 11 key categories of business roles ranging from C-level executives to general blue-collar staff, the response overwhelmingly leaned toward the positive. Even the most at-risk category, general blue-collar staff, is expected to be positively affected by RPA at a rate of 30% versus negatively affected at a rate of 29%. As we go through the rest of the list, the ratio of positive to negative significantly improves from here.

For instance, 47% of IT professionals expect to be positively affected by RPA deployments between now and 2025 versus 12% being negatively affected. Similarly, 44% of engineers and technical staff outside of IT can be expected to be positively impacted by RPA deployments in the same timeframe versus 10% being negatively impacted. In fact, all roles except for general blue-collar staff fall somewhere between 35% and 48% positive outcomes, and below 20% negative outcomes. These numbers reflect a high degree of enthusiasm for RPA and other automation deployments, and a relatively low degree of apprehension or fear with regards to automation threatening to kill or effectively disrupting jobs in the mid to long term.

Impact of RPA deployments on key business roles by 2025

In your opinion, how will the following categories of roles be impacted by RPA in the next 5 years?

	POSITIVELY AFFECTED	NOT SURE	NOT AFFECTED	NEGATIVELY AFFECTED
Senior Leadership (C-level) and Board	44%	25%	25%	6%
Senior leadership but not C-level	41%	29%	25%	5%
Middle management: White collar	41%	27%	22%	10%
General staff: white collar	38%	28%	17%	18%
Middle management: Blue collar	37%	27%	17%	20%
General staff: Blue collar	30%	30%	12%	29%
IT professionals	47%	26%	15%	12%
Engineering and technical staff outside of IT functions	44%	30%	16%	10%
Marketing professionals	38%	30%	25%	7%
Customer Service professionals	39%	26%	20%	14%
Sales professionals	39%	27%	23%	11%

We also note that 1 in 4 senior leadership and C-level executive roles expect to be affected not at all by RPA and AI-powered intelligent automation in the next five years, and a near equal number isn't sure one way or the other.

Speaking of the ultimate impact (positive or negative) of automation deployments between now and 2025, we note a dangerously high degree of uncertainty regarding the matter: Between 25 and 30% of senior business leaders, managers, and staff are uncertain as to whether the impact of RPA and other intelligent automation deployments will ultimately be positive or negative. We feel that this uncertainty presents an opportunity for RPA and other automation vendors to articulate the value of their solutions in a more proactive and empirical manner.

Section 9. The role RPA, AI, and Intelligent Automation will play is significant.

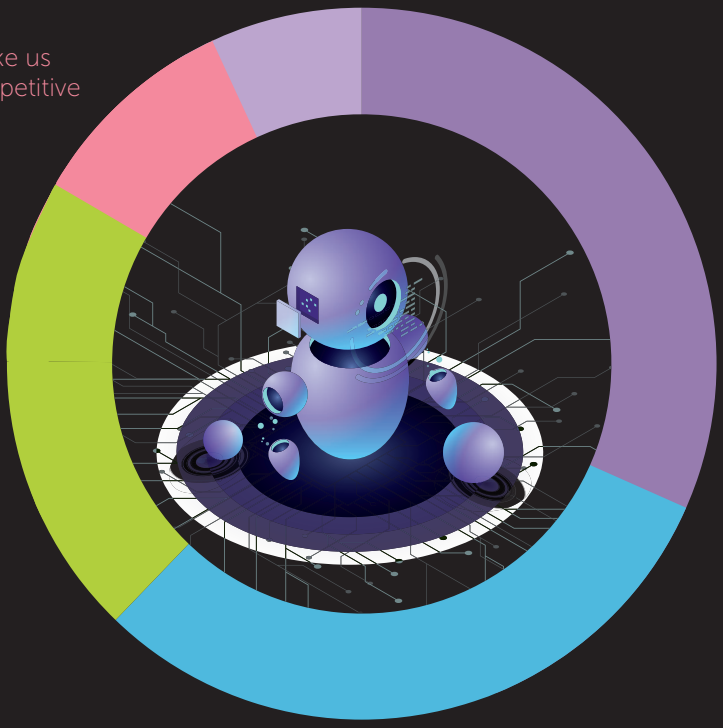
3 out of 4 businesses feel that RPA, AI, and intelligent automation will make them more competitive than they are today.

75% of businesses feel that automation will make them more competitive than they are today. In contrast, only 8% of businesses feel that automation will make them less competitive than they are today. Somewhere in the middle, 17% of organizations feel that automation won't have much impact on how competitive they ultimately are.

These numbers illustrate just how clear the operational value of RPA, AI, and intelligent automation is to the vast majority of today's businesses. The fact that three-quarters of businesses understand this already speaks for itself, but the fact that less than 10% of businesses feels that automation does not provide a competitive advantage all but closes the book on whatever debate may have once existed on the matter: **9 times more businesses believe in the value of RPA, AI, and automation than businesses that don't.** As automation solutions continue to improve, and they continue to demonstrate measurable value across an expanding landscape of business functions, we expect that the 8% of companies that fear becoming less competitive because of automation will dwindle down toward zero, either because they will cease to exist, or because they will learn to leverage automation to become more competitive than they used to be.

With regard to the 17% of companies that still feel neutral toward automation, and don't see automation as making them more or less competitive, we feel that they, too, will eventually shift either toward obsolescence or toward operational improvements via automation. While not making an argument for or against business Darwinism, we find it difficult to envision a future in which any company, no matter the industry, choosing not to leverage automation to improve operational efficiency, lower operational costs, minimize human error, augment the capabilities and productivity of its human employees, and improve customer experiences, would be able to remain competitive in the long term against companies that do. In our view, this number, too, will erode in the coming years, as businesses either fail altogether or manage to adapt to the new realities of business automation.

Generally, how do you feel about the potential impact of RPA, AI, and automation in general on your organization?



Automation deployments will make us far less competitive than we are today.

3%

Automation will make us somewhat less competitive than we are today.

5%

Automation will have little to no impact on how competitive we are.

17%

Automation will make us much more competitive than we are today.

37%

Automation will make is somewhat more competitive than we are today.

38%

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Section 10. The Role of Automation in Culture.

2 out of 3 businesses feel that automation will change their company culture for the better in the next 5 years.

66% of organizations feel that automation will change their company culture for the better in the next five years. Conversely, only 12% believe that automation will change their company culture for the worse, and 16% of organizations do not believe that their culture will be changed by automation one way or the other. The remaining 5% aren't sure what the cultural impact of automation will be on their company.

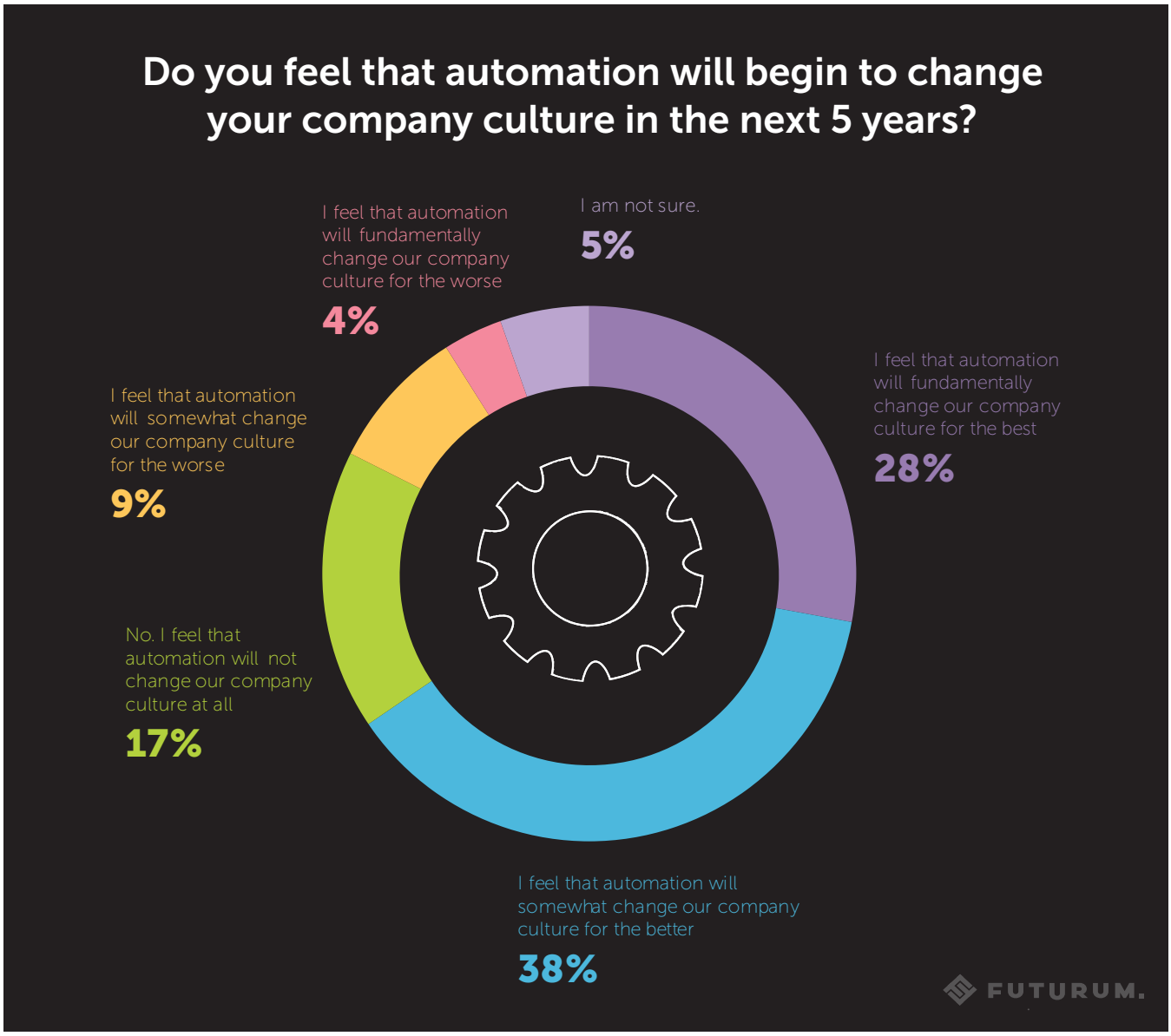
What this data suggests is that two-thirds of businesses don't just feel that automation will make them more competitive, but that it will also improve their organization's business culture. The question is why. Why would automation, which focuses on improving operational efficiency and optimizing cost reductions, and is often seen as a threat to human workers, improve a business culture? And why do two-thirds of companies feel this way? One clue that points us to the answer is an earlier data point about human augmentation versus human replacement. As you will recall, 65% of organizations reported that the ideal ratio of augmentation to replacement via automation was somewhere between 4:0 and 4:1. In other words, 0 to 25% replacement, and 75 to 100% augmentation.

Here, we see an almost identical proportion of organizations (66%) expecting automation to bring about cultural improvements in business culture in the next five years. We believe that these responses are connected. For starters, they both speak to hope and expectations: 65% of organizations feel hopeful about automation, not just as it relates to competitiveness, but with regard to improvements —improvements in productivity, improvements in business outcomes, improvements in quality control, and also improvements in working conditions.

Consider the positive impact on a human worker's psyche resulting from being augmented by automation solutions: The message sent by a company's augmentation strategy is "You matter, we want

you to keep your job here, and we are investing in solutions that will help you be more productive and valuable and also quite likely enjoy your work more." The alternative, should a company choose to replace workers with automated solutions, would be "You don't matter, we don't care about you or your job, and we are not going to invest in you." Is it any surprise that the 65% of organizations that lean most heavily toward worker augmentation instead of worker replacement would also expect augmentation-focused automation to improve their business culture? It doesn't seem like a stretch. Optimism is optimism. Organizations that view the value of automation through a prism of human augmentation are most likely to expect automation to improve their business culture. Conversely, organizations that view automation as a threat to gainful employment and job security will likely think of it as a negative influence on company culture.

Other ways that company culture is likely to be improved by augmentation-focused automation: Less time spent performing low value tasks, fewer errors to have to answer for, less operational friction between workers and the organization, less risk of failure, smoother processes, and more effective decision-making. If nothing else, knowing that your company is competitive in its industry can also alleviate fears, lower stress, and boost morale.



Section 11. Methodology: Which operational changes lead the way when it comes to facilitating the adoption of automation solutions?

39% of organizations with current automation deployments report having already implemented company-wide forums in which they articulate their vision for the role that automation will play in their organization. An additional 24% plan to implement similar forums in the next 12 months. **This brings to 63% the number of businesses that have already or are in the process of clearly communicating their strategy to their employees.**

61% of automating organizations have also adopted a department-focused approach to this type of forum, with 32% having already implemented it, and 29% planning to do so in the next 12 months.

59% of automating organizations have also taken care to share a strategy document with employees to further articulate the company's vision for its automation journey. 33% of organizations have already done so, and 26 % are preparing to do so in the next 12 months.

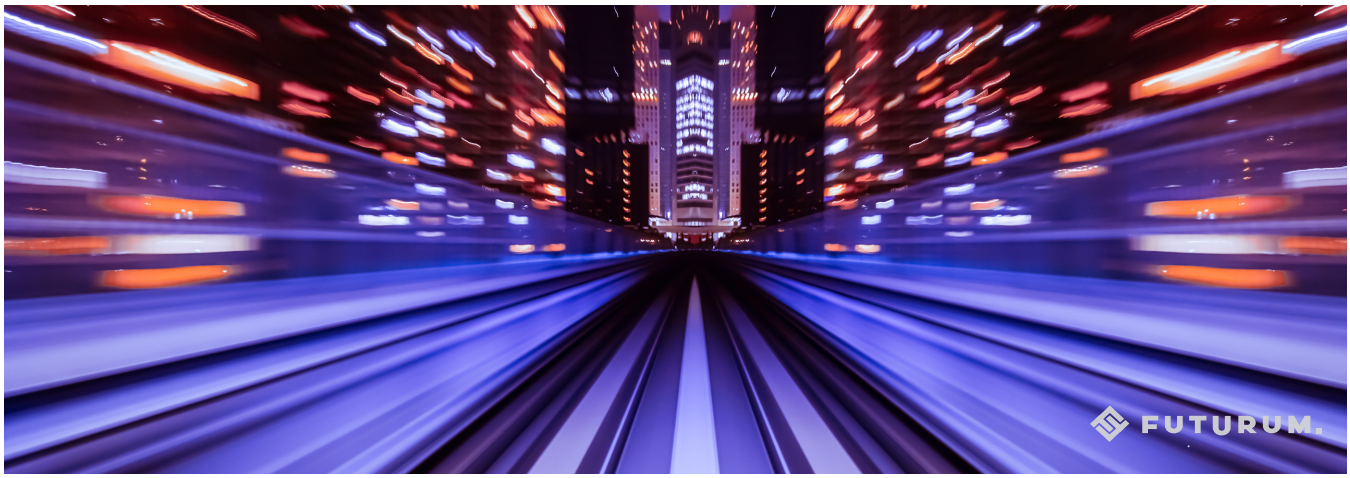
Switching from communications to more proactive action, **59% of automating organizations are also focused on delivering employee training to assist workers in adjusting to the automation processes they will be working with.** 28% of organizations are already in the process of doing so, with 31% preparing to do so in the next 12 months.

In parallel, 55% of automating organizations are also focused on employee retraining programs and/or assistance for employees being displaced by automation deployments. 28% of organizations have already begun implementing these reskilling programs, and 27% plan to do so in the next 12 months.

Beyond training and employee assistance, many automating organizations also plan to hire specialized staff to help accelerate and facilitate their transition. 51% of them are focused on filling business leadership roles with new hires. 22% have already begun, and 29% plan to do so in the next 12 months. 53% of automating organizations are also focused on hiring specialized operational staff. 24% have already done so, and 29% plan to do so in the next 12 months.

58% of automating businesses are also leaning on their automation technology partners to help their staff transition to a more automated business culture. Only 27% have already begun this process, but 30% plan to do so in the next 12 months.

Not all initiatives are internally facing, however. Our research showed that 56% of automating companies are also focused on creating dedicated content and marketing campaigns to assist their customers' transition towards a more automated version of their company. 26% have already begun this process, while 29% plan to do so in the next 12 months.



What kinds of internal changes have you introduced (or are you planning to introduce) to facilitate automation adoption?

	ALREADY IMPLEMENTED	PLANNING TO IMPLEMENT IN NEXT 12 MONTHS	PLANNING TO IMPLEMENT SOMETIME IN THE FUTURE	NOT IMPLEMENTED, AND UNSURE IF WE WILL	NOT PLANNING TO IMPLEMENT
Company-wide forums in which we articulate our vision for the role of automation across our organization.	39%	24%	13%	14%	11%
Department-wide forums in which we articulate our vision for the role of automation within the department.	32%	29%	14%	13%	12%
A company-wide email or strategy document circulated to employees, articulating the company's automation strategy.	33%	26%	17%	14%	11%
The implementation of employee training to assist workers in adjusting to the automation processes they will be working with.	28%	31%	18%	13%	11%
Employee retraining and/or assistance for employees being displaced by automation deployments.	28%	27%	18%	15%	12%
Lean on our automation technology partners to help our staff transition to a more automated business culture.	28%	30%	17%	14%	11%
Create dedicated content and marketing campaigns to assist our customers in transitioning towards a more automated version of our company.	26%	30%	16%	17%	12%
Hire more automation talent to fill business leadership roles.	22%	29%	17%	17%	14%
Hire more automation talent to fill mid-to-low level operational roles.	24%	29%	18%	16%	13%

CONCLUSION AND RECOMMENDATIONS

The outlook for RPA and AI-Powered, Intelligent Automation (IA) adoption is positive. The outlook for RPA and AI-powered Intelligent Automation (IA) adoption in North America between now and 2025 is positive, with over 50 percent of businesses already using some sort of RPA or intelligent automation solution, 75 percent of organizations of all sizes planning to invest in automation technologies, and an equal proportion feeling that intelligent automation, RPA, and AI solutions will make them more competitive than they are today.

RPA investments will shift outward. While RPA investments have mostly been focused on optimizing internal business functions like Manufacturing, Logistics Management, Data Analytics, and IT, the shift toward applying intelligent automation to outward-facing, customer experience-focused business functions (like Customer Service and Customer UX) is ongoing. This shift from inward use cases to outward use cases should help drive RPA and intelligent automation adoption among industries that were initially uncertain about the value of the technology to their particular business operations. Retailers, Transportation, Travel, and service-focused industries especially should begin to catch up to Manufacturing, Media & Publishing, Energy, and Banking & Finance sectors, which were the earliest adopters of the RPA solutions.

Automation will impact culture. Plan for that and facilitation that transformation. Without question, automation will have an impact on company culture. Organizations position themselves for success with they focus on creating a culture in which automation augments humans rather than automation replacing humans. Successful automation implementations start with a strategy, and communications are an integral part of that strategy.

Getting out in front of understandable trepidation on the part of employees with communication, discussion forums, and the offering of training and reskilling opportunities will help ease the transition from manual, people-driven processes to processes where automation works in tandem with people and, as a result, collectively they realize greater business efficiencies, outcomes, and job performance and enjoyment.

Organizations will also need to communicate a shift to automation to customers and others who might be impacted by a shift in operational practices. This communication plan should also be a component of your corporate automation journey strategy.

For best results, don't go it alone. More than 50% of our survey respondents reported working closely with their automation technology partners to aid in the transition to a business culture personified by humans and automation working together. When you work with a trusted vendor partner they bring deep expertise at working with other organizations to the fore and can help minimize missteps along the way, and maximize the benefits realized in the shortest possible time.

The future will belong to the companies who understand the power of technology and who put automation: RPA, AI, and Intelligent Automation, to work alongside their human counterparts, to help deliver the best possible business outcomes, to remain competitive, and to deliver the very best in customer experience, customer service, and customer outcomes. It is an exciting time for business leaders who see the possibilities ahead. We hope you can put the insights in The Title of this Paper that I can No Longer Remember

We can't wait to see what you make of them!

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APPENDIX, METHODOLOGY & DEMOGRAPHICS