

Don't get left behind

An enterprise view of the
low-code automation landscape



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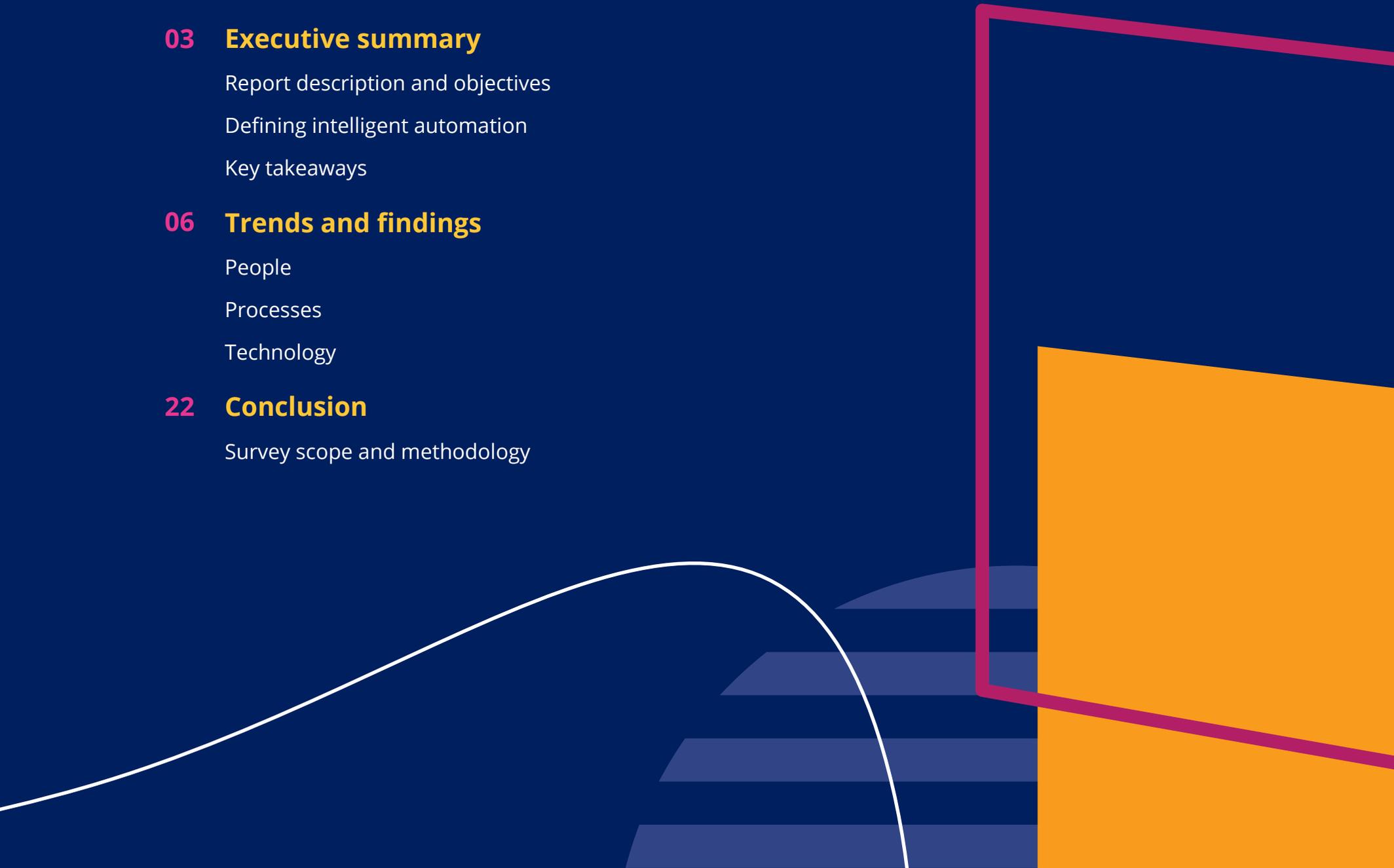
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Executive summary

Executive summary

Enterprises are facing enormous challenges and opportunities created by new streams of data and ever-expanding possibilities for customer engagement. To meet increased demand, reduce inefficiencies, and quickly deploy digital solutions, businesses are turning to intelligent automation.

Intelligent automation powers a seamless **Center-out™ method** for connecting operational processes with customer experiences. Using case management as the foundation, intelligent automation weaves together centralized artificial intelligence (AI), hybrid robotic process automation (RPA), and low-code software development to bridge the gap between the data you have and the experiences you want your customers and teams to have.

But not all approaches to intelligent automation are equally intelligent or effective. Understanding how industry leaders are leveraging intelligent automation, and how other enterprises are being held back, can help an organization find the best way forward in its automation journey that truly serves core business priorities.



Defining intelligent automation: A synthesis of people, processes, and technology

For the purposes of this study, we define **intelligent automation** as the engine for digital transformation that orchestrates processes, improves customer outcomes, and promotes nimble operations.

It typically encompasses elements of AI, RPA, and low-code application development and requires an innovative strategy that balances the value of **people, processes, and technology**, while focusing on specific company needs and industry standards. The level of automated technology deployed will vary tremendously depending on the maturity of the governance strategy within an organization, the specific needs of its operations, and the extent to which its business users employ intelligent automation as a tool.

The Pega intelligent automation survey builds off of the premise that enterprises in most industry sectors are actively pursuing business solutions that synthesize low-code applications and processes. And that they're attempting to pull IT into stronger alignment with other functions. But our research and survey findings confirm a wide spectrum of accomplishment that identifies clear leader and laggard positions. For companies that aspire to use intelligent automation to differentiate from their closest competitors, here are the key takeaways.

Intelligent automation:

The engine for digital transformation that orchestrates processes, improves customer outcomes, and promotes nimble operations.

Key takeaways

Don't get left behind

A leader in the intelligent automation space just a few years ago would be a laggard by today's standards. Our survey data decisively demonstrates that intelligent automation is developing at a breathtaking pace – revealing that companies that do not consistently reevaluate and update their technology and processes are at a disadvantage. AI and RPA might still appear to be on the cutting edge, but this study's leaders say they are now investing aggressively in low-code solutions instead.

Get executive buy-in

The survey contains many data points that confirm a correlation between intelligent automation maturity, buy-in, and collaboration from the enterprise's entire executive wing. When leadership is aligned, processes and governance can turn disparate, uncoordinated intelligent automation into a cohesive strategy for current and future deployments.

Incorporate business strategies into intelligent automation development processes

Laggards may not yet recognize the value of bringing business users into the development process at the earliest stages. By contrast, leaders have recognized that collaboration – starting at the prototype stage – leads to improved user experience, better regulatory compliance, and low-code applications that deliver on business objectives.

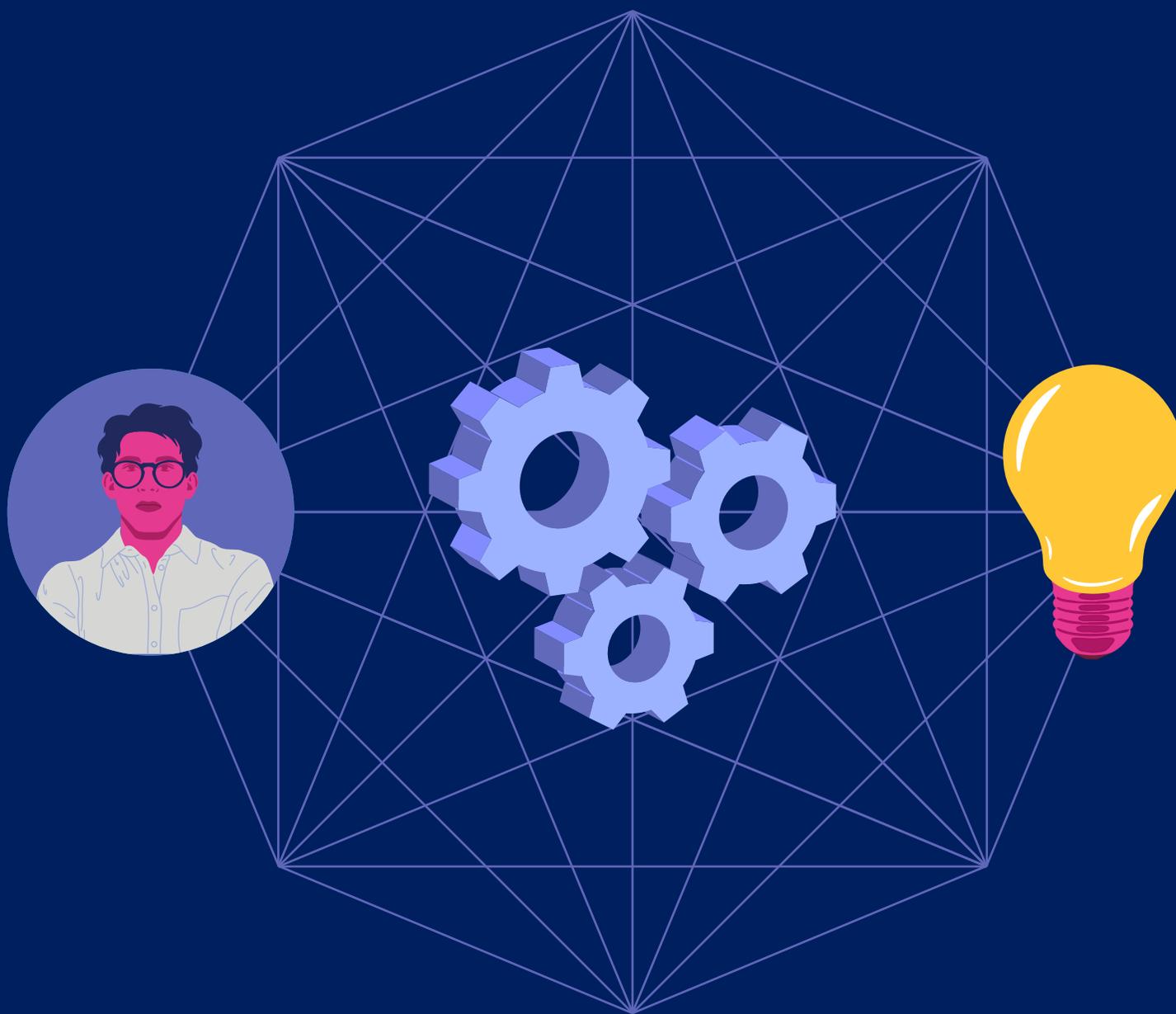
Implement strong processes to achieve enterprise-wide support

Companies that lead in the intelligent automation space do more than merely understand its value. They actively generate support by encouraging participation in all aspects of digital transformation and low-code development – showcasing the business value of such innovations.

Plan and implement a strong governance framework

Leaders recognize that intelligent automation guardrails need to become standardized. To them, intelligent automation deployments adhere to overarching requirements that allow for scale and reusability. Laggards will be working within an informal framework – or lack any such scaffolding.





Trends and findings

The three pillars of intelligent automation

People: Engage IT and multidisciplinary business units for true transformation

The importance of people can be summed up by the fact that every technological advance – along with every process created to utilize the technology – depends on the foresight and commitment of the people who will use it. **Intelligent automation needs many champions, with decision-makers playing an indispensable role at every stage.** One of their primary responsibilities is to create an enterprise-wide culture that helps employees at all levels understand, support, and use the technology.

Gartner predicts that by 2024 organizations where IT has a strong understanding of customer needs will exceed their competitors' customer experience metrics by 20%.¹ This is just one expression of an intelligent automation must-have: Business operations must work alongside IT in every deployment, from the prototype stage to upgrades to compliance requirements. To be successful in solving everyday challenges and adapting when the market demands, collaboration and structure are key.

Enterprises will need two things: a team with the right skills, attitude, and drive; and good governance that fosters a collaborative environment, minimizes risk, and maximizes good business outcomes. Our survey demonstrates that industry leaders are doing the most to fill the low-code space with diverse talent.

Just 18% of respondents in our survey report that they have a digital transformation team that answers directly to an executive board. But this contingent, in aggregate, report more collaboration between the business and technical sides of their enterprise, stronger governance, more cross-department strategies, and more platforms on which to build out new applications. They report less siloed development and more data transparency. And they are more likely to enjoy enterprise-wide support for intelligent automation than respondents from companies where executive support is not total and coordinated. They are even using low code, AI, and RPA to improve legacy or as-is systems at slightly higher rates than other respondents. Leaders are far ahead in the reuse of low-code applications – they're already baking a comprehensive intelligent automation framework into their future plans.

¹ Gartner, "Top Strategic Technology Trends 2021," retrieved from Tech Republic.

"Leaders create a culture and strategic structure that formalizes intelligent automation across the organization and makes processes consistent and repeatable."



When everyone in the enterprise contributes to intelligent automation and its processes, that enterprise is likely to enjoy the leader's advantage today.

The survey leaders who give business users a seat at the intelligent automation table have made the most progress. What separates leaders from the middle of the pack is how many business functions users are touching (only a small percentage of survey respondents stated that business users have "little opportunity" to develop low-code applications and prototypes).

Intelligent automation needs more than one champion, as companies that don't have the buy-in from the entire executive board are at a disadvantage. But the leadership position also requires **across-the-board support** for intelligent automation and **active participation by all** key decision-makers in IT and business operations. In our survey, 53% of respondents with this level of executive oversight and participation report collaboration in application building across all business functions. By contrast, barely a quarter of respondents with just one executive sponsor driving the intelligent automation strategy (and without complete executive board buy-in, oversight, and participation) report that level of business investment.

Respondents who work in software and engineering roles report the strongest collaboration between business and IT departments, which suggests the motivation behind coordinated intelligent automation may still be coming mostly from the technology side. This suggests that laggards may need to work harder to link the value of intelligent automation to business objectives. They also may need to create a climate in which business and IT are expected to participate in requirements gathering, prototyping, and strategizing around application development.



53% report **collaboration in application building across all business functions**



Does this mean leaders are aggressively recruiting citizen developers from all sectors? Not necessarily. Most survey respondents report five or fewer such developers at their company. Approximately one-third of leaders employ between five and 10, and just 9% employ between 10 and 50. The only respondents who report 100 or more developers were laggards with no executive sponsorship.

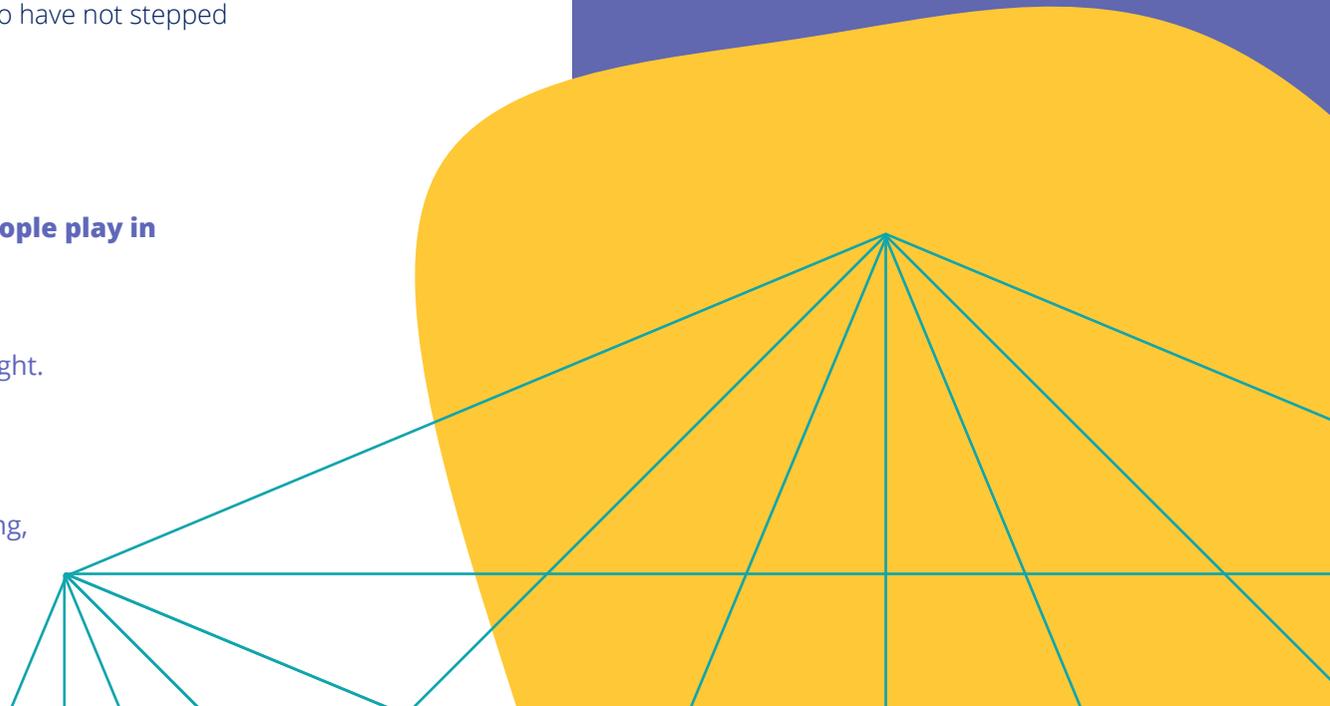
These data strongly suggest the number of developers matters less than the environment in which they work. When intelligent automation is a siloed, uncoordinated process, there is more risk of shadow IT and inefficient investment that does not deliver on business objectives. The leaders' focus on a strong governance structure and coordination may result in a slight increase in developer head count. But the quality and utility of their applications will be factors that more clearly differentiate them from the competition.

Our survey indicates that while laggards may understand intelligent automation, leaders support these deployments by creating space for all types of talent to design, test, and adapt applications. The data also suggest that with many laggards, digital transformation is still a technical exercise. One-fifth of respondents with a CTO who drives intelligent automation report that support for the technology is lacking – likely with business users who have not stepped up to a role in development and planning.

Overall, the survey demonstrates the vital roles people play in intelligent automation initiatives:

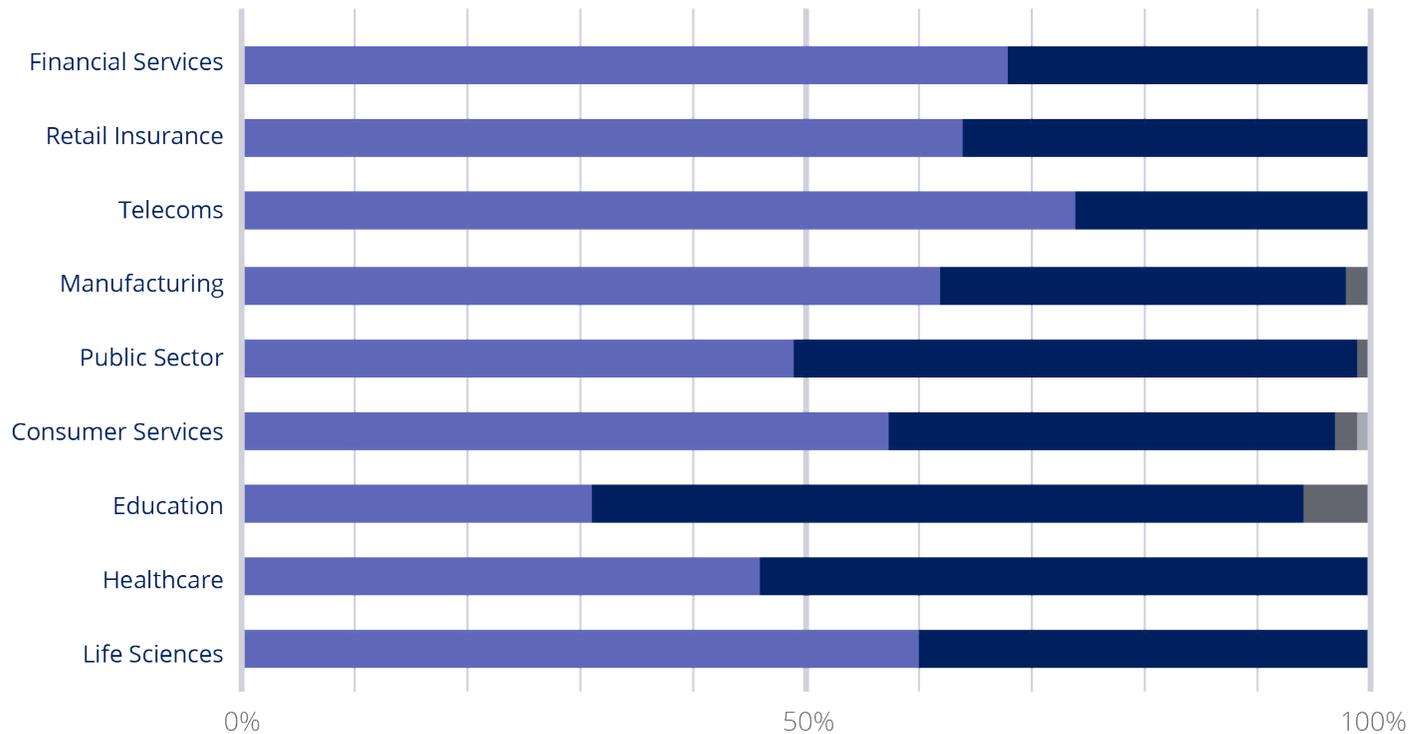
- Leadership sets the tone with their buy-in and oversight.
- Business units and IT must collaborate in application development at all stages.
- Diverse talents must participate in the building, testing, and deployment of low-code applications.

“When intelligent automation is a siloed, uncoordinated process, there is more risk of shadow IT and inefficient investment that does not deliver on business objectives.”



How effectively do business and IT work together?

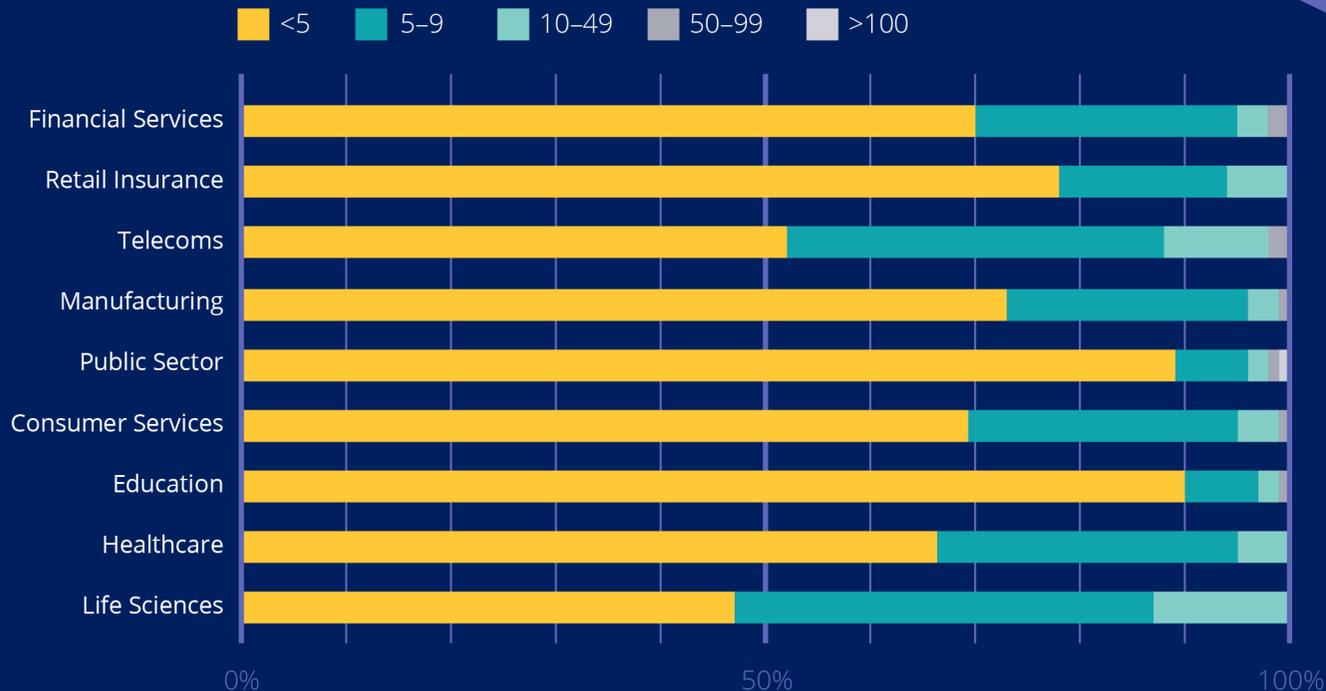
- Effective cross-departmental strategy with strong executive oversight
- Effective, coordinated strategy with many departments/functions
- No overall strategy and mixed cooperation
- Business and IT do not work effectively together



74% of respondents in Media and Communications report effective cross-department digital transformation strategies and strong executive oversight, versus just 49% in Government.

How many people in your organization would you refer to as a "citizen developer" as per the below definition?

A citizen developer is defined as a user who creates new business applications for consumption by others using development and runtime environments sanctioned by corporate IT.



36% of Media and Communications and 35% of Healthcare/Life Sciences respondents have between five and nine citizen developers. Education (2%), Government (7%), and Insurance (16%) are lagging.

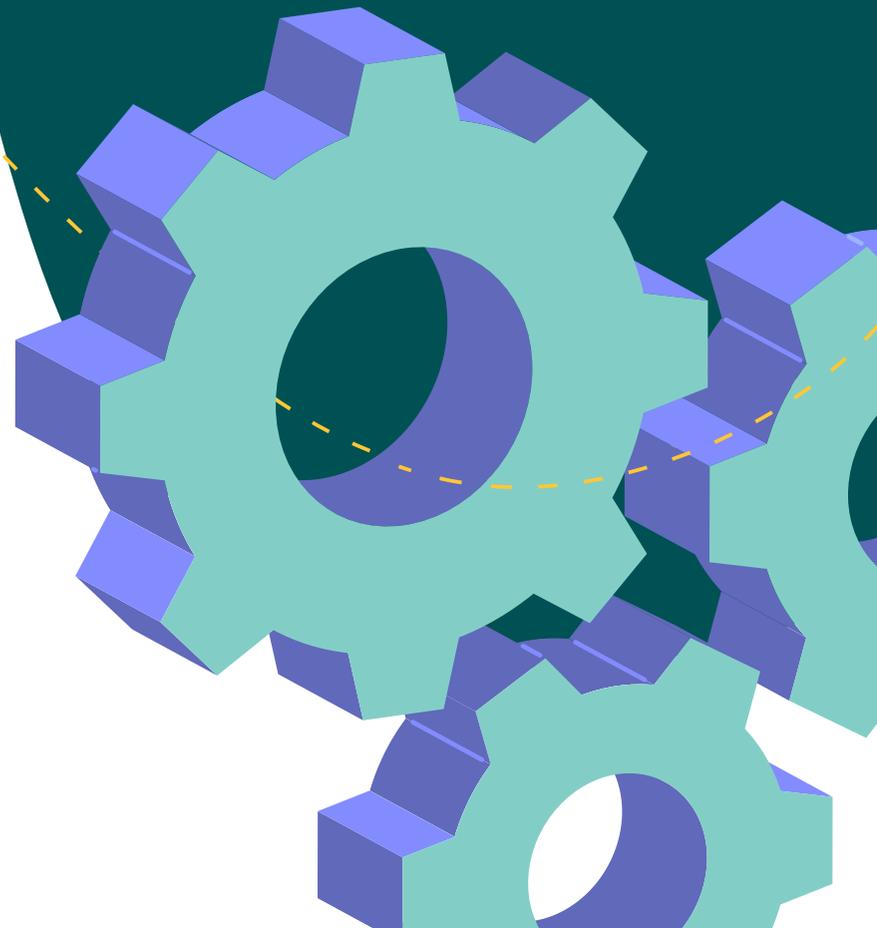
Processes: Use guardrails and governance to keep the enterprise nimble

The low-code revolution is well underway. The global market for development platforms, which topped out just over \$10 billion in 2019, is forecasted to reach \$187 billion by 2030,² and digital transformation is accelerating in every industry vertical. As intuitive interfaces replace the difficult work of software programming, many workers with great ideas – not just highly skilled programmers – can create applications that deliver better results to the business, its partners, and its customers.

The problem? For many companies, the processes through which apps are planned, tested, built, and released remain uncoordinated or dominated by IT developers. Our survey found that for many enterprises, the processes and capacity for low-code development are not firmly fixed. This can result in duplications, quality inconsistencies, and systems that do not empower critical business units. Leaders, by contrast, are building an architecture of processes around the app development space. They have systems that regulate and govern app production and reflect core business priorities.

Strong processes begin with strong governance. Just 30% of all survey respondents report having a formal governance structure in place that encompasses all intelligent automation projects. These results suggest that at many companies, business leaders are not yet exercising complete oversight of the process.

“Strong processes begin with strong governance.”



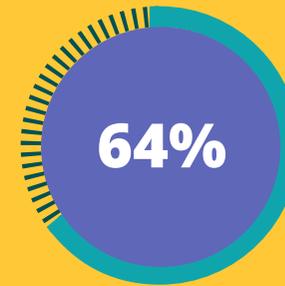
² Research and Markets, “Low Code Development Platform Market Research Report: By Offering, Deployment, Enterprise Vertical, Global Industry Analysis and Market Forecast to 2030,” November 2020.

Requirements gathering is mostly a human (22%) or technology-focused (25%) process, which more often operates on a need-to-know basis. Leaders are also pushing business outcomes into app development at the earliest stages, while laggards – 56% of the survey respondents – report that application building is still mostly based on capabilities or business outcomes, not both. In short, the survey reveals that integrating multiple focus points and information sources over time emerges as a crucial element driving effective advancement.

More evidence of the essential nature of executive team oversight can be seen at the app prototype stage. 64% of respondents in this category report that business objectives are captured in the prototype phase, compared to 49% for CTO-driven companies – and just 36% for CEO-driven companies. Laggards more frequently capture objectives first in other systems, which starts the app development process in a disjointed fashion.

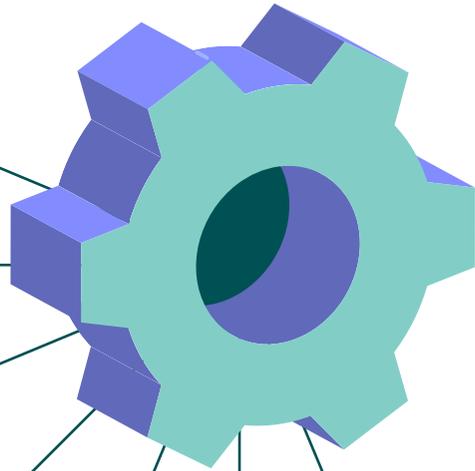
The most notable indicator of a formalized intelligent automation process may be an automated center of excellence – and 64% of the survey respondents report that they have one. However, it's easy to see how the 18% of respondents with executive team oversight are raising the overall average: 81% of these respondents have an established center of excellence, compared to 59% of CTO-driven enterprises and barely half of CEO-driven companies.

Building out a process infrastructure will help all companies stay competitive today, but let's not forget the robust investment forecast for businesses aiming to remain in the lead. **Intelligent automation is a rapidly expanding ecosystem, and the leaders of today must continue to adapt to maintain their edge.**



64% of respondents
**report they have an
automated center
of excellence**

“Diverse talents must participate in the building, testing, and deployment of low-code applications.”



The vast majority – 94% – of survey respondents have established intelligent automation processes for performance monitoring. And 84% have mostly standardized processes for agent training. But for nearly four out of 10 respondents, processes governing go-live readiness are still “mostly informal.” Just 54% have standardized processes for planning new **Microjourneys™** and deployments. Here, too, the parallel between leadership and executive team oversight is clear. 66% of respondents with executive board oversight report standardized processes for planning the future, versus just 46% of respondents with a CEO driving automation.

The leadership position depends on flexible processes that can change as the business finds new uses for intelligent automation and brings more people into every stage of development. With the challenges presented by the performance, security, business risk, and user experience of new applications, decision-makers will continue to face the risk that their technology can't keep up with new business priorities. They need to see the great potential of flexible, but forward-thinking governance, to avoid a disordered state in which low-code development of varying quality and quantity proliferates without oversight.

Altogether, the study indicates leaders must create processes that:

- Establish broad requirements gathering and app prototyping as a de facto hybrid of business objectives and technology capabilities
- Formalize governance through establishment of an automated center of excellence and total executive buy-in
- Apply flexible intelligent automation processes to the planning of future deployments from the start

Are applications built based on capabilities or based on achieving business outcomes?

49% of Manufacturing respondents report that applications incorporate a mix of capabilities and outcomes, closely followed by Media and Communications (45%) and Insurance (44%). Public Sector Administration (38%) is lagging.



Do you have processes in place to ensure the following?

■ Mostly standardized
 ■ Mostly informal
 ■ No processes in place



66% of respondents in Consumer Services and 62% in Insurance report standardized processes are in place for planning their next intelligent automation Microjourney, versus 49% in Government.

Technology: Integrate AI, RPA, and low code for the best outcomes

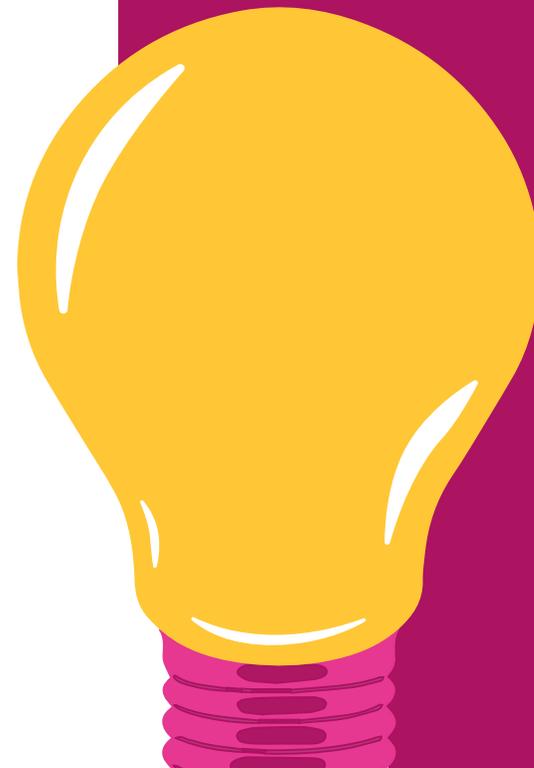
The technical piece of intelligent automation blends AI, RPA, and low-code software development – each depends on platforms to become fully operational and flexible. We still have a long way to go in each component, but the ecosystem is expanding rapidly here too. Gartner predicts 50% of enterprises will be using AI-operationalizing platforms by 2025, a fivefold increase from the number in 2020.³ Our survey shows that **leaders are making smarter choices about where they invest and deploy technology, how often they reuse it, and how it can improve user experience and manage critical data.**

In our survey, 50% of respondents reported “mature” investment in AI. That percentage increases to 65% for leaders and shrinks to 38% for laggards (typically enterprises where the CEO drives intelligent automation). The leadership position is defined more by investment in low-code applications and processes, which just 17% of respondents rated as mature, as well as by investment in RPA for the automation of as-is operations (19%). In both cases, leadership is well ahead of the average, with 28% rating their low-code investments and 39% rating RPA of their as-is system as “mature” deployments.

This maturity extends to platforms; leaders are running a higher average of internal platforms for AI, RPA, and low-code development than the mean. The study confirms that while intelligent automation is not solely a function of technology, leaders aren't losing sight of its importance – and they're investing accordingly.



50% of enterprises will be using AI-operationalizing platforms by 2025³



³ Gartner, “Our Top Analytics and Predicts for 2021,” January 12, 2021.

But at a time when businesses must be agile and develop new applications rapidly, it's essential to use, reuse, and extend assets in the toolkit. Companies that can utilize existing resources and systematically record use case types can save themselves time and money and more quickly scale applications. Leaders in our survey reflect this: At least 80% of respondents with executive board oversight rate the reuse of integrations, templates, security artifacts, and service-license agreements as "very feasible." The leader-laggard spread is narrower by this metric, but we gain additional context by considering UX design systems. 73% of executive-team-led respondents report they utilize a universal templated design system, while just 40% of CEO-led and 49% of CTO-led respondents have taken this step. Leaders also assign more value to business involvement and customizability in the app development process.

Another key factor that determines the usefulness of technology is how much it helps an enterprise streamline processes and comply with best practices and regulatory frameworks. Here again, the survey

revealed that leaders are getting more mileage out of their investments. A strong majority of respondents with executive team oversight report their enterprises ahead of the competition in localization, accessibility, and consistent user experience (78%, 76%, and 62%, respectively). By contrast, enterprises with CEO-driven intelligent automation are much less optimistic about their position, with 10% of these respondents rating themselves as "laggards," as they exhibit little consistency in UX.

Upcoming advances in technology will generate huge amounts of new data and unprecedented potential value. Enterprises that control and analyze their data – and keep it accessible and compelling to their stakeholders – will find innumerable opportunities. But how can automation technology intelligently exploit promising prospects? **The companies that focus on data transparency and analytics, as well as centralized control of data management, are best able to take advantage of the potential value of their data.**

Survey respondents with executive team oversight report stronger showings in data analytics and data transparency – with 89% and 88%, respectively, evaluating their enterprises as a “leader.” 18% of CEO-driven enterprises consider themselves laggards in analytics, and 14% lagged in transparency. Overall, respondents in business strategy and operations rate data transparency as less important than those in IT, software, and engineering.

Leaders are also working to push overall control of data into centralized or overarching roles. An impressive 71% of respondents with executive teams focused on intelligent automation have given a chief data officer control over the enterprise’s most critical data. Laggards are much more likely to keep controls with heads of departments (34%) than leaders (20%), while only half provide their chief data officer with the most critical enterprise data.

Investment in intelligent automation is essential. But if it is not aligned to the pillars of people and processes, technology can create more chaos than opportunity – creating high costs and little return on investment.

To attain and keep their position, leaders in our study are following these guidelines with technology:

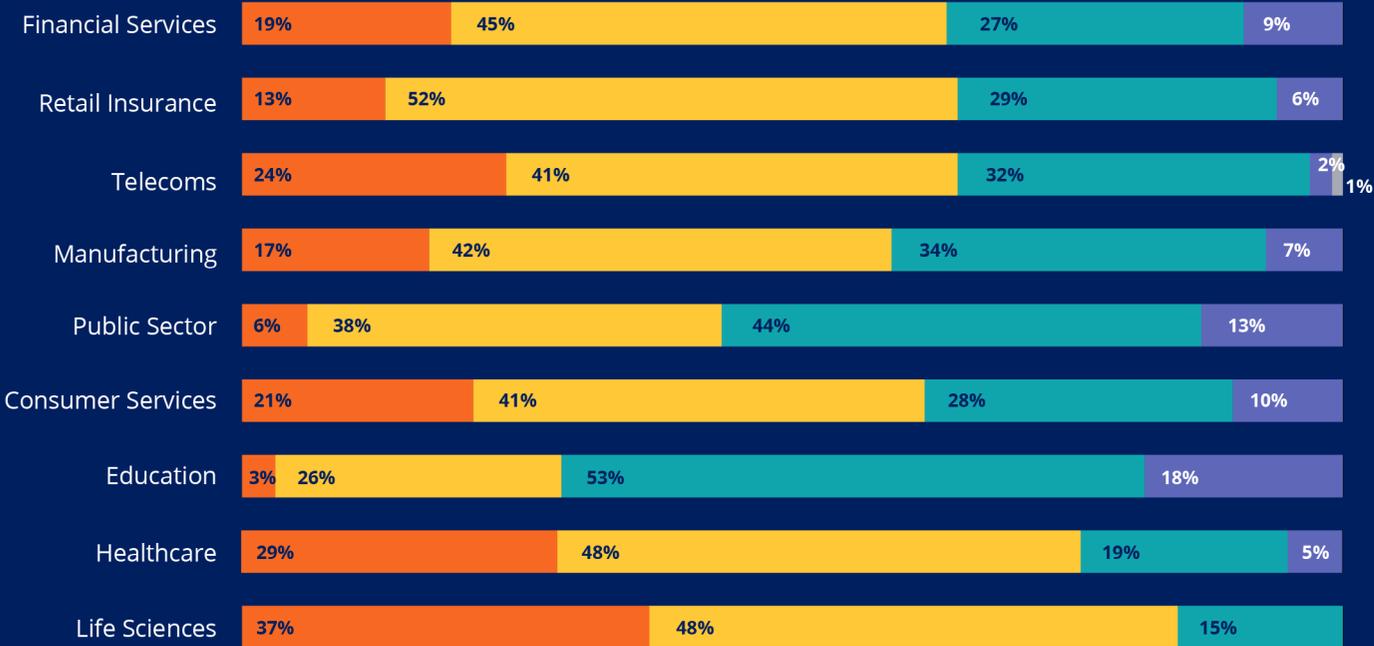
- Invest as needed, but always look to reuse and extend assets that have performed well.
- Design systems that harness best practices for the purposes of better governance and user experience.
- Push for greater data transparency and analytics to deliver more value.

“Leaders are making smarter choices about where they invest and deploy technology, how often they reuse it, and how it can improve user experience and manage critical data.”

What is the current state of your organization's investments in the following areas?

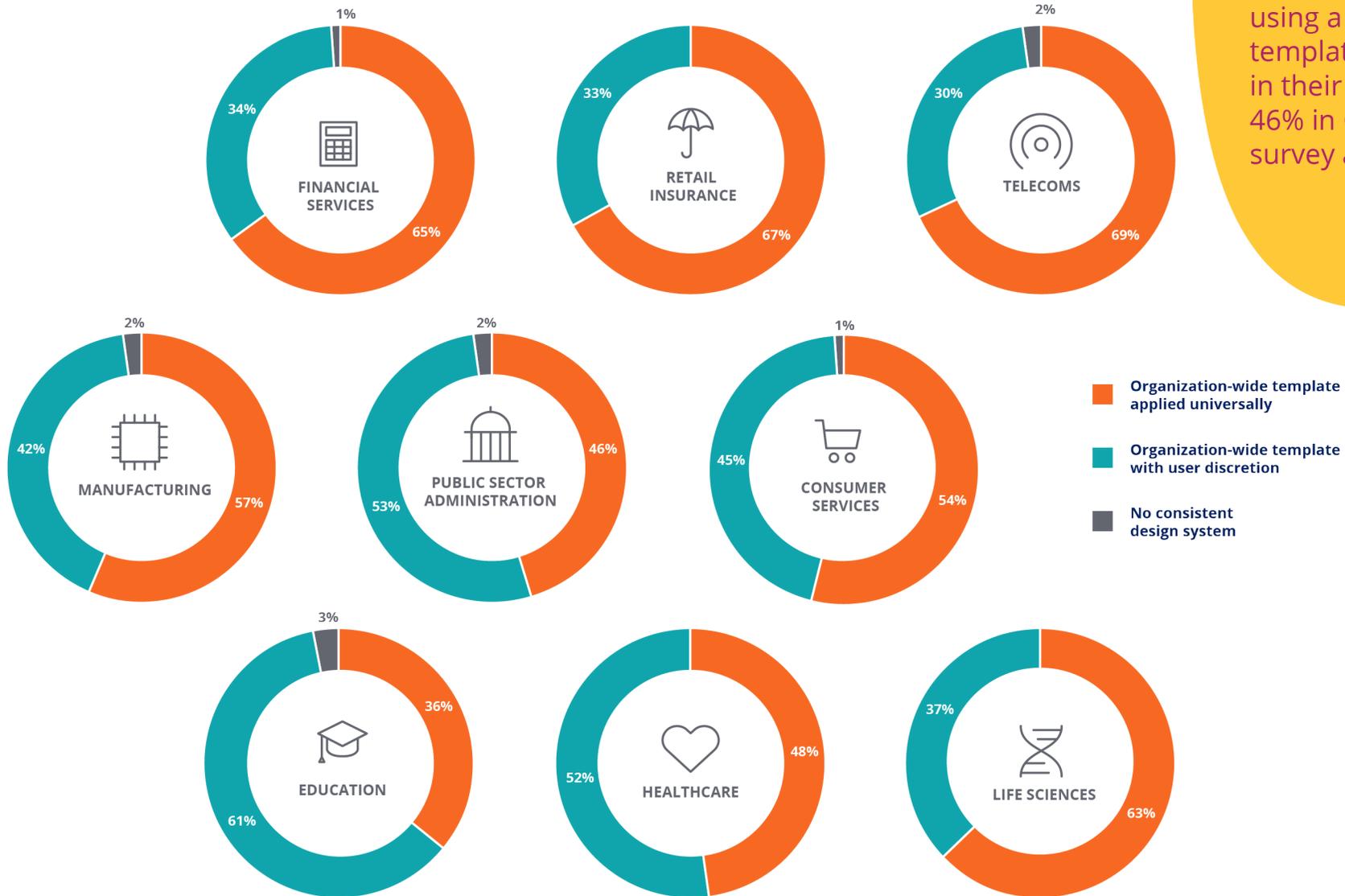
■ Intelligent/Mature
 ■ Integrated
 ■ Emergent
 ■ Exploratory
 ■ Not applicable

Low code for development of new processes/apps



33% of respondents in Healthcare/Life Sciences rate low-code development of new processes and apps as mature, versus 19% in Financial Services and 6% in Government. The survey average is 17%.

Do you make use of a consistent design system?



69% of respondents in Media and Communications, 65% in Retail, and 64% in Financial Services report using a universal templated design system in their enterprise, versus 46% in Government. The survey average is 56%.

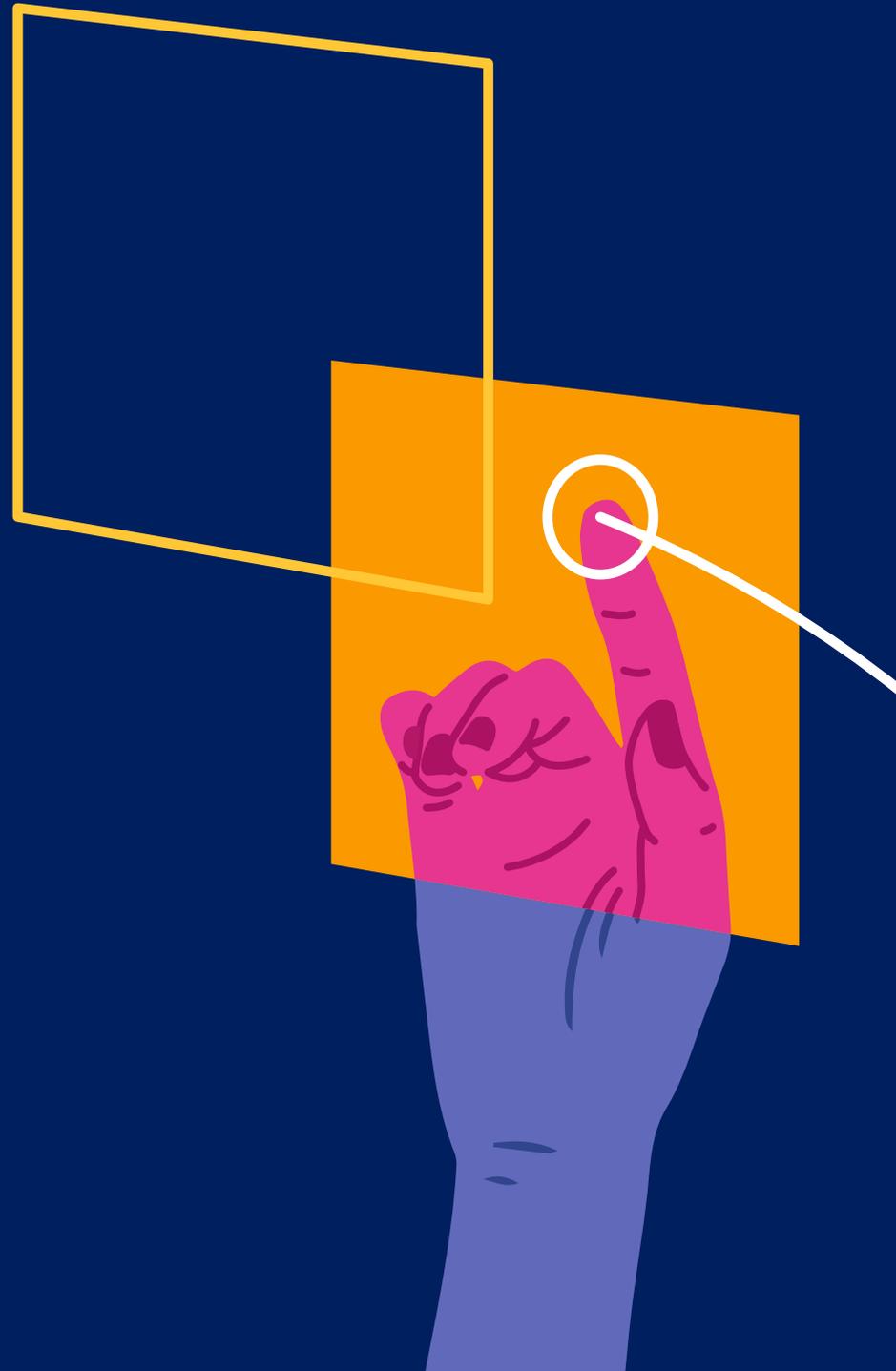
Conclusion

Our study demonstrates that leaders recognize true intelligent automation is a complex undertaking that depends on enterprise-wide support and a systematic process to govern deployments and fuse them with business outcomes.

It's also no longer a question of whether or not to automate. Enterprises must embrace intelligent automation to adapt, transform, and survive. To meet increased demand, reduce inefficiencies, and quickly deploy end-to-end digital solutions that meet customers' and internal team needs, enterprises must embrace case management and intelligent automation. **Case management** can help capture and manage work across applications and people, while AI can automate decisions and eliminate tedious manual work. And with the power of low-code development, business users and IT can deliver applications and drive results – fast.

In short, **people, processes, and technology** isn't just a useful framework. It's the combination that will keep enterprises agile and ready for whatever comes next.

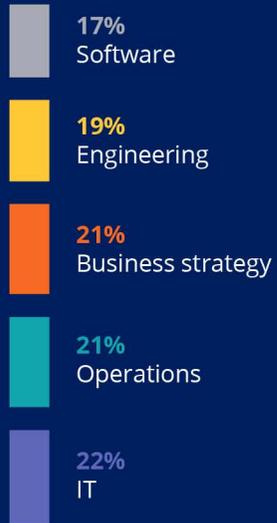
Are you ready for what comes next?



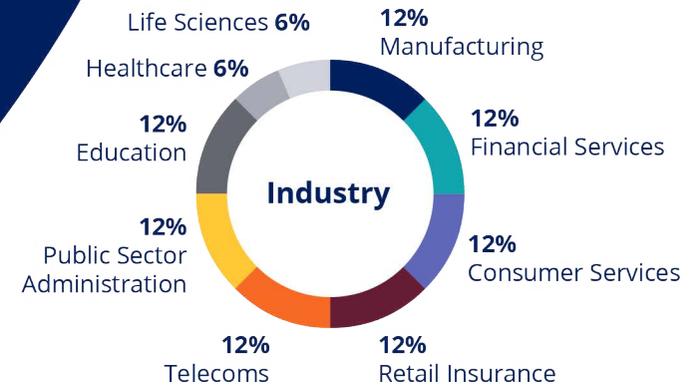
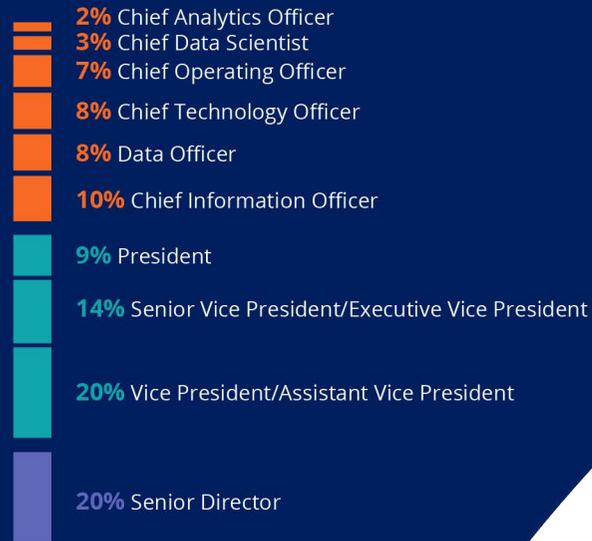
Methodology

Each respondent answered a slate of 25 multiple choice questions that gauged the level of their intelligent automation and digital transformation efforts within the three pillars of people, processes, and technology.

Principle role



Job title



Company revenue



Organization region



About Pegasystems

Pega delivers innovative software that crushes business complexity. From increasing customer lifetime value to streamlining service to boosting efficiency, we help the world's leading brands solve problems fast and transform for tomorrow. Pega clients make better decisions and get work done with real-time AI and intelligent automation. And, since 1983, we've built our scalable architecture and low-code platform to stay ahead of rapid change. Our solutions save people time, so our clients' employees and customers can get back to what matters most.