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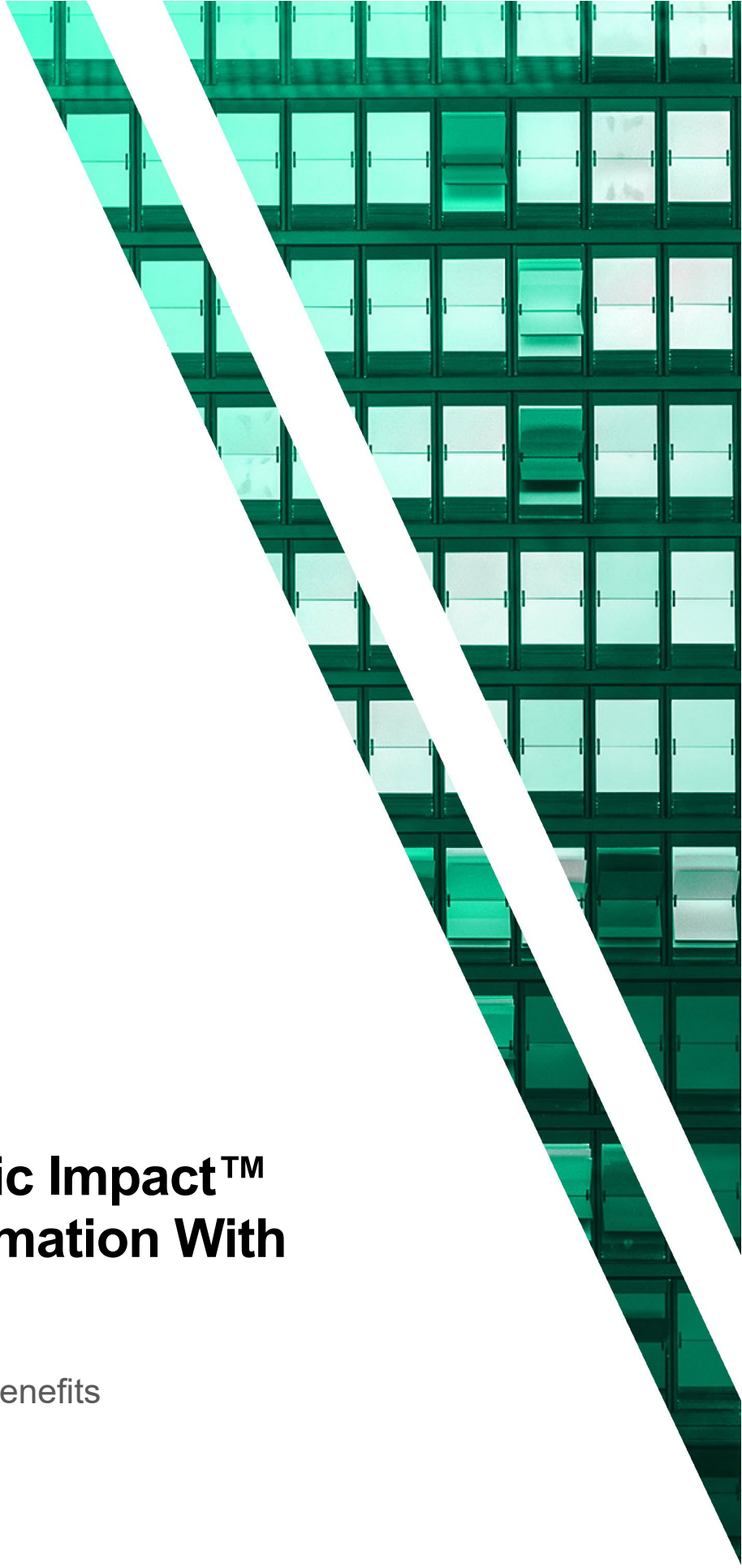

The Total Economic Impact™ Of Intelligent Automation With Pega Platform

Cost Savings And Business Benefits Enabled By Pega Platform

APRIL 2022

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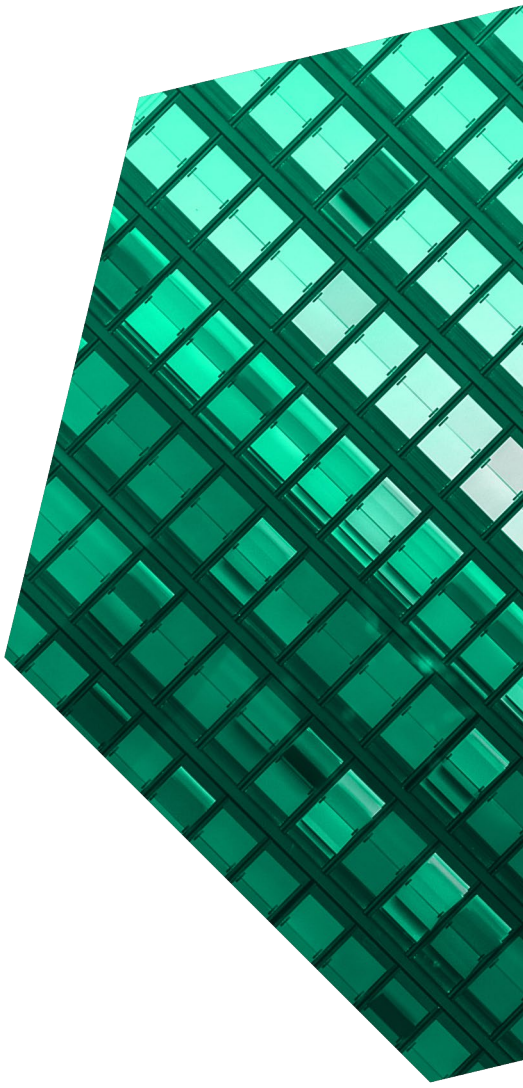
Consulting Team: Sanitra Desai
Julia Fadzeyeva



ABOUT FORRESTER CONSULTING

Forrester Consulting provides independent and objective research-based consulting to help leaders succeed in their organizations. For more information, visit forrester.com/consulting.

Executive Summary

To accelerate digital transformation, enterprises are implementing technologies such as digital process automation (DPA), robotic process automation (RPA), and workflow automation, among others. While each of these technologies may tackle specific process inefficiencies, combining them into a unified toolkit that intelligently automates end-to-end workflows can help simplify the complexity of enterprise operations and drive success[1]. By intelligently automating with the Pega Platform, organizations maximize efficiency, improve customer experience, and enable flexibility and agility.

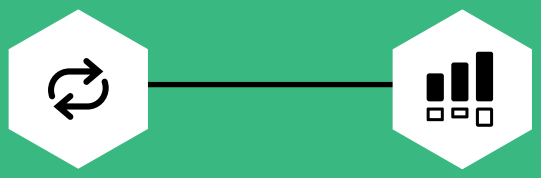
Pega commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying Pega Platform as the backbone of their transformations to becoming digitally modern organizations.[2] Pega's low-code platform for AI-powered decisioning and workflow automation is designed to provide actionable intelligence and automation that drive process optimization and customer engagement at scale. The Pega Platform was created to address the most sophisticated use cases as well as the long tail of automation required to achieve true, adaptable, sustained transformation. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Pega's unified approach to intelligent automation on their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed eight decision-makers from five organizations and surveyed 125 decision-makers with experience intelligently automating with Pega Platform throughout their organizations. For the purposes of this study, Forrester aggregated the experiences of the interviewed and surveyed decision-makers and combined the results into a single composite organization.

Prior to using Pega, most of the interviewees' organizations managed their business processes using legacy mainframe systems and/or unintegrated point solutions paired with email and spreadsheets for collaboration. With these siloed enterprise architectures in place, business processes were manual or only partially automated, time-consuming, and often error-prone. This hindered both employee and customer experience. Additionally, their organizations had no tools in place to provide visibility into people and process performance, making it difficult to pinpoint where the inefficiencies were.

These organizations were looking to transform into digital enterprises to build efficient operations, to better engage customers, and to quickly respond to business needs and changes in the market, while improving collaboration and alignment enterprisewide. They turned to Pega Platform as the foundational tool to accomplish these goals.

KEY STATISTICS



Return on investment (ROI)	Net present value (NPV)
421%	**$62.50M**

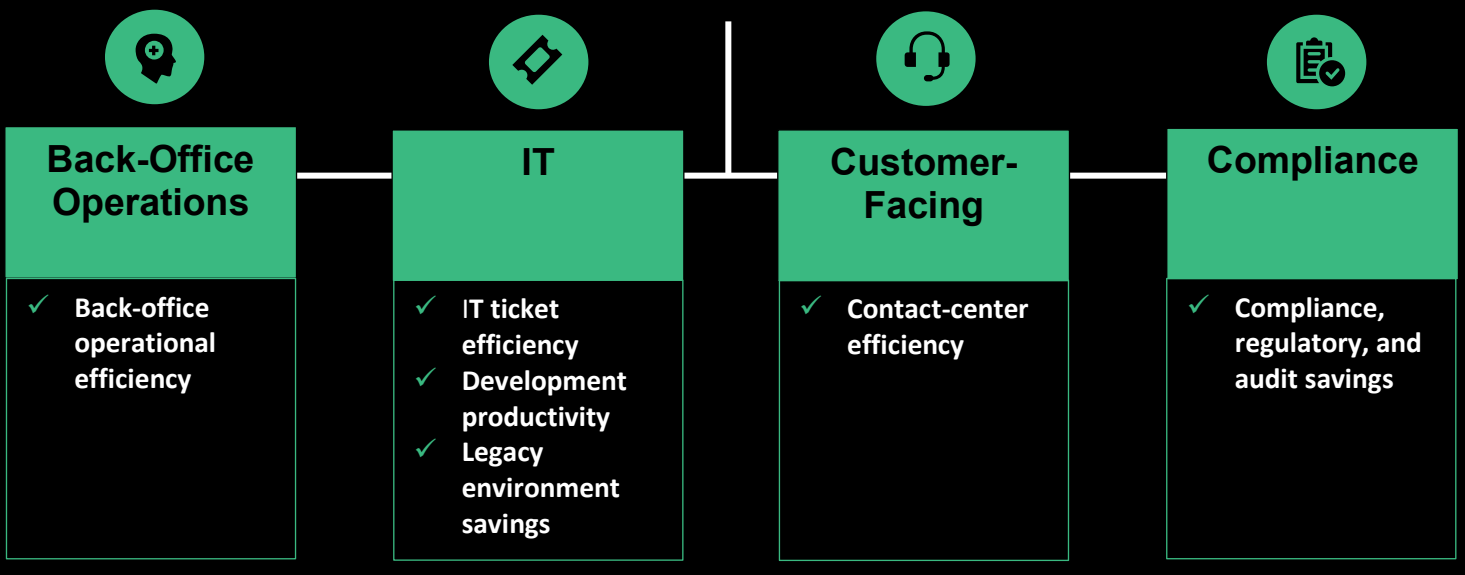
Using Pega Platform capabilities such as digital process automation (DPA), robotic process automation (RPA), end-to-end workflow automation via case management, business rules and AI-powered decisioning in a unified approach, the interviewees' organizations streamlined and automated business processes within their back-office and IT departments and they improved efficiency, agility, and collaboration throughout the organizations. For some interviewed organizations, Pega's task mining capability added a layer of visibility into employee effectiveness. With these processes and this intelligence in place on a standardized platform for building and managing the workflows, employees at most organizations could reallocate their time to more strategic initiatives and tasks to better meet individual and organizationwide goals.

Process efficiencies translated to an improved customer experience on the front end as well. Organizations discovered new ways of connecting with customers, and they streamlined the processes already in place, increasing the speed and quality of interactions and optimizing the customer experience with the organization.

Finally, the flexibility of the platform enabled organizations to adapt in times of rapid change, such as during the COVID-19 pandemic. Relying on Pega as a low-code-based platform with a multitude of automation capabilities within its toolset, organizations could pinpoint gaps in performance, pick the right automation type(s) to fit each of their business processes, and deploy new intelligently automated end-to-end workflows fast, with confidence, and in concert with business end users.

> **"Pega uncovered inefficiencies we were blind to before. It's been quite transformative for us."**
>
> *Head of workforce planning and operational insights, financial services*

The Pega Platform As The Foundation Architecture For Business Transformation



KEY FINDINGS

Quantified benefits. Interviewees said the effects of standardizing on Pega Platform and utilizing its capabilities to streamline business processes penetrated numerous areas and teams within their organizations. For the purposes of the study, the economic value of intelligently automating with Pega is depicted through examples of the impact felt by the operations, IT, customer-facing, and compliance groups within the enterprise. Risk-adjusted present value (PV) quantified benefits, based on the characteristics of the composite organization, include:

- **An up to 45% increase in back-office operational efficiency due the Pega Platform baseline automation capabilities, and the introduction of RPA and task mining, over three years.** The Pega Platform along with its task mining capability (Workforce Intelligence) enables users to be more productive in their day-to-day responsibilities through process automation and improved insights. With access to a comprehensive, unified automation toolkit with Pega Platform, organizations can utilize multiple automation capabilities in one workflow and experience how each type complements the others to drive success. The composite organization saves $54 million due to improved back-office operational efficiency with Pega over three years.
- **IT efficiencies totaling $15.5M for the composite organization over three years.** Organizations experience an improvement in development productivity by reducing process development timelines and deploying more workflows while involving less resources over time. They can also reduce the burden on IT by intelligently automating the ticket triaging and routing process with the platform. Finally, organizations are able to retire legacy software solutions, avoiding license fees and the time and effort previously spent maintaining those technologies.
- **A 70% reduction in time spent on non-value-add tasks and a 20% reduction in average handle time over three years within the contact center.** Organizations are able to improve contact center agent productivity with process automations through Pega Platform and insights generated with task mining. This saves the composite organization $6.7 million over three years.
- **Compliance, regulatory, and audit savings of nearly $1.4 million over three years for the composite organization through fine avoidance and compliance team productivity savings.** When used for digital process and workflow automation, the Pega Platform improves the transparency and tracking abilities for compliance teams. With enhanced visibility into their workflows and audit trails in place, organizations can demonstrate a strong compliance posture and respond to concerns in a timely fashion.

“We have different workflows for different roles across the organization, but Pega has frameworks for all of these. I don't know any other technologies that have these predefined lists of properties we need to be successful in our business. And we can have everyone across of business on one Platform whose use is just customized and developed to meet people’s individual needs. It’s really simplified things for us.”

Lead system architect, healthcare

Unquantified benefits. Benefits that interviewees observed but that are not quantified for this study include:

- **Increased visibility.** Pega gave the interviewees' organizations newfound insights into their business processes by elevating process visibility to the end-to-end enterprise operational scale, rather than restricting it to individual tasks within a process. With a more expansive view into enterprise operations, organizations were able to use the data to further enhance performance, impact business decisions, and improve data traceability.
- **Growth from improved customer experience.** With Pega, interviewees' organizations could optimize both business processes and employee performance. This led to both faster and better-quality responses to customer needs, which reduced customer frustration and contributed to top line and loyalty.
- **Improved employee experience.** Through personalized training and guided experiences based on insights with task mining and the intelligent automation of mundane tasks with Pega Platform, interviewees described environments in which employees felt supported and were able to spend more time on true knowledge work. This increased satisfaction and retention rates.
- **Closer collaboration between business and IT.** Organizations were able to change the composition of their delivery teams from being very IT-centric to being more balanced between business and IT due to the ease of use of Pega's low-code platform. By involving business users in the development process, IT teams became more responsive to the needs of the business and, as a result, they developed better solutions faster.
- **Organizational restructuring.** Intelligently automating with Pega Platform played a foundational role in the interviewees' organizations' visions of becoming more digitally modern and enabled them to restructure and further optimize their businesses.
- **Avoiding the wrong technical decisions.** Pega improved transparency in the interviewees' organizations and allowed them to make more evidence-backed decisions in ways that decreased rework and improved time-to-value. They avoided making decisions that could increase effort and costs in the long run.

Costs. Risk-adjusted PV costs, based on the characteristics of the composite organization, include:

- **Total costs for annual Pega licensing and implementation fees for 5,000 users totaling $6.0 million for the composite organization over three years.** Licensing fees include those for both Pega Platform and task mining. Pega license fees are based on a per-case or per-user, per-month basis, and they vary depending on the type of user and amount of usage. Pega also charges a one-time implementation fee that encompasses its involvement in the development effort for the initial months of implementation.
- **Internal implementation and ongoing management fees totaling $413,000 for the composite organization over three years.** Interviewees said their organizations required system architects, developers and data analysts for implementation. The composite organization requires two developers providing ongoing support for the platform while two data analysts continue to manage task mining via Workforce Intelligence.
- **Professional services fees for up-front and ongoing automation support totaling $3.4 million for the composite organization over three years.** Interviewees said their

organizations used third-party organizations for assistance during initial implementation and/or process automation identification, setup, and ongoing management.

- **Development costs totaling $4.4 million for the composite organization over three years.** Interviewees' organizations supported process development using teams involving both the business and IT sides of the organizations. Teams were smaller than those used in their legacy environments. Over time, the teams further decreased in size, and project durations shortened as organizations moved up the learning curve on the platform.
- **Training fees totaling $684,000 for the composite organization over three years.** Interviewees said their organizations provided training to education IT resources, data analysts, and end users on how to optimize their use of Pega.

The financial analysis which is based on the decision-maker interviews and survey found that a composite organization that uses Pega to drive workflow automation and transform 100 business processes across 5,000 end users over three years experiences benefits of $77.33 million during that timeframe versus costs of $14.83 million, adding up to a net present value (NPV) of $62.50 million and an ROI of 421%.

Pega has created a platform that allows you to focus on your business processes and mitigating, resolving, and fixing the problems and gaps within them. Instead of working out implementation details, you can redirect your efforts to more value-add activities. It allows you to expose business rules to business owners and allows them to control those business rules quickly and adjust to changes in the business. You can get results faster than you would with most other platforms.

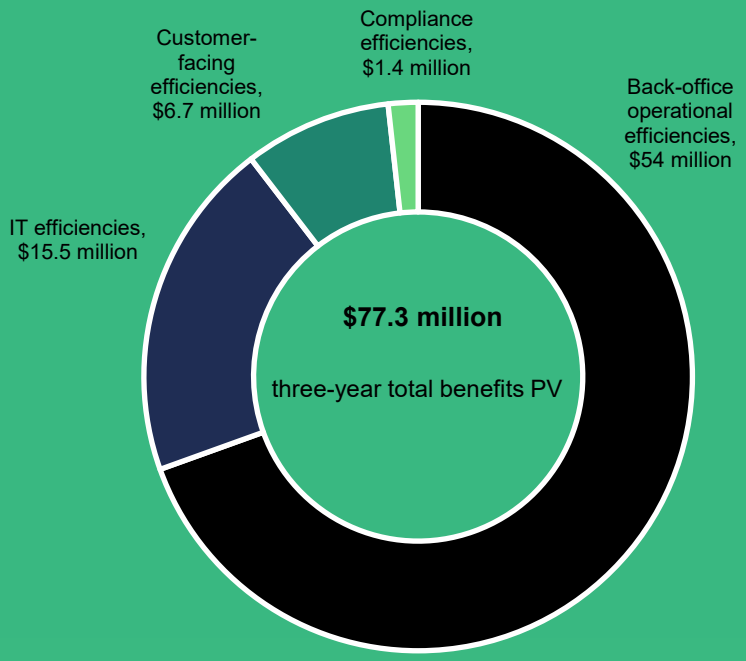
— Technical program manager, software

ROI
421%

BENEFITS PV
$77.33M

NPV
$62.50M

Benefits Felt Across The Organization By Standardizing On Pega Platform (Three-Year)



KEY RESULTS BY PROFILE

Operations benefits from time savings and efficiencies through automation and improved insights with Pega.

IT benefits from IT ticket efficiencies and improved accuracy through automation with Pega.

Contact center benefits from avoided downtime and decreased average handle times with Pega.

Compliance benefits from improved transparency and tracking capabilities with Pega.

Business users and IT benefit from faster release times at a fraction of the cost with Pega.

TEI FRAMEWORK AND METHODOLOGY

From the information provided in the interviews and survey, Forrester constructed a Total Economic Impact™ framework for those organizations considering an investment in Pega Platform.

The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision. Forrester took a multistep approach to evaluate the impact that intelligent automation with Pega Platform can have on an organization.

DUE DILIGENCE

Interviewed Pega stakeholders and Forrester analysts to gather data relative to Intelligent Automation with Pega Platform.

DECISION-MAKER INTERVIEWS AND SURVEY

Interviewed eight decision-makers at five organizations and surveyed 125 decision-makers at organizations intelligently automating with Pega Platform to obtain data with respect to costs, benefits, and risks.

COMPOSITE ORGANIZATION

Designed a composite organization based on characteristics of the interviewed and surveyed decision-makers.

FINANCIAL MODEL FRAMEWORK

Constructed a financial model representative of the interviews and survey using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the decision-makers.

CASE STUDY

Employed four fundamental elements of TEI in modeling the investment impact: benefits, costs, flexibility, and risks. Given the increasing sophistication of ROI analyses related to IT investments, Forrester's TEI methodology provides a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

The Intelligent Automation With Pega Platform Customer Journey

Drivers leading to the Pega investment

KEY CHALLENGES

Forrester interviewed eight decision-makers at five organizations and surveyed 125 decision-makers with experience intelligently automating with Pega Platform at their organizations. For more details on these individuals and the organizations they represent, see Appendix B.

Before the investment in Pega, the interviewees' organizations lacked the insights and tools needed to modernize their workforces and overall organizations. Business processes were either fully manual or only partially automated using antiquated, unintegrated point solutions and/or legacy mainframe platforms, and employees turned to email and spreadsheets for work management and collaboration.

Additionally, organizations had limited insight into employee performance, which made it difficult to understand and optimize an employee's workday. As a result, common business processes were often slow, inefficient, and inconsistent. The interviewees' organizations struggled with several shared challenges, including:

- **Lack of visibility into workflows.** The interviewees' organizations had many different business processes in place, but they had no insight into how these processes and workflows were performing. There was no background logic in place to monitor these workflows, so organizations were unable to measure both workflow and employee performance in a holistic way. Decision-makers knew there were inefficiencies, but they could not pinpoint where exactly those inefficiencies were.
- **Siloed, error-prone processes impacted speed to delivery.** Of the 125 survey respondents, 23% said their organization's legacy tools were not designed to work together, 19% noted that it was difficult to leverage data across the disparate systems in place, and 38% stated that the business and IT sides of the organization did not work together. This led to in suboptimal solutions.

Similarly, in their legacy states, it was challenging for different teams throughout the enterprises to work together due to the number of unintegrated systems throughout the organization, siloed IT and business functions, and the lack of a tool to oversee their projects. This caused delays and rework, and it increased cost and risk to the organizations.

A central product owner at a financial services organization said: "When you are using spreadsheets and email for managing work, things are going back and forth and everywhere, and there's no structure. Colleagues can make mistakes easily and can sometimes even miss vital information. That impacts the speed of when something can be delivered or implemented and its quality."

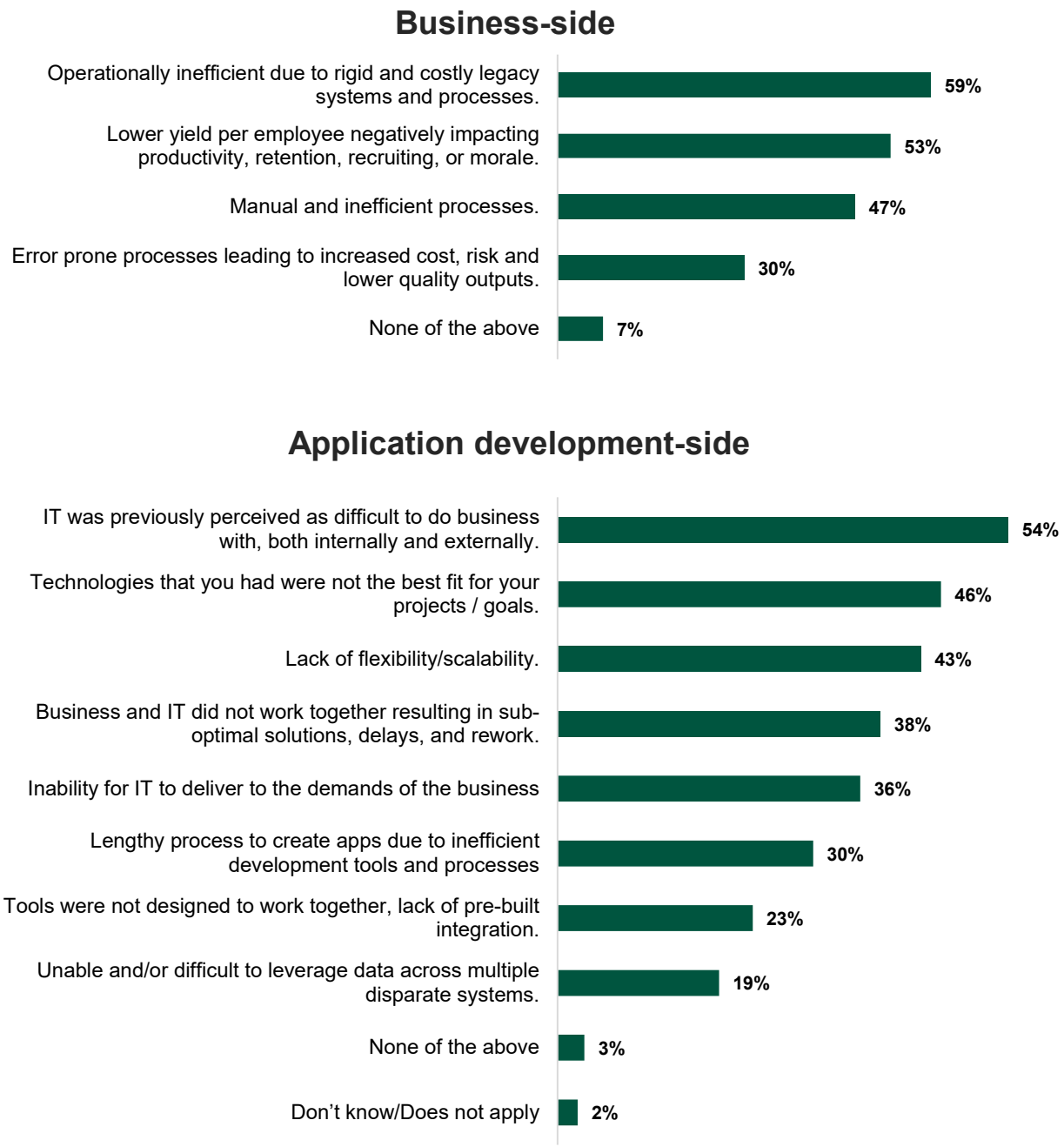
> **"[Before investing in Pega,] we had a bunch of no-touch kind of platforms. They were out of support, and were challenged in terms of our ability to really do much with them to improve how our organization functions."**
> *Head of automation, financial services*

- **Inefficient manual and disconnected processes hindered employee experience.** Business end users were often frustrated by how long it took them to accomplish common tasks, and they said there were too many disparate systems to work with and no direction of where to go for what information. Additionally, most internal interactions were handled through email, and this back and forth further lengthened timelines. Survey respondents mirrored this sentiment: 53% noted that a lower yield per employee negatively impacted productivity and morale (see Figure 1).
- **Slow internal processes hurt the customer experience.** On the customer side, interviewees' organizations were always looking to improve customer service, build efficient customer-facing operations, and quickly respond to changes in the market. But there was an execution gap between how they wanted to engage customers and the capabilities of their existing systems. Internal back and forth and process-quality issues combined with no insight into performance for customer-related workflows created service delays, which hindered customer satisfaction and loyalty.
- **Gaps in security.** The interviewed decision-makers work at organizations with high standards for security, so using tools such as spreadsheets that can be uploaded to local folders did not meet their standards. Organizations were using these types of tools to manage critical work, but they had no way to ensure these files were secure.
- **Obstacles to modernization.** With a number of internal disparate and antiquated technologies, siloed workflows, and gaps in communication between internal teams, the interviewees and surveyed decision makers found it difficult to transform their organizations into modern digital enterprises. A lead system architect at a healthcare organization said, "[Legacy solutions were not] growing and evolving as the times changed." Additionally, 46% of the survey respondents stated the technology in place was not the best fit for their aims (see Figure 1). The lack of flexibility and agility in these technologies did not support these organizations' goals.

"Security is a high priority for us, and the tools we were using had none. We and our organization were at risk when anyone opened a file with privacy data, but [we] had no way of fixing this."

Central product owner, financial services

Figure 1
"What challenges were you experiencing in your previous environment?"



Base: 125 decision-makers responsible for automation and robotics for their organization
Source: A commissioned study conducted by Forrester Consulting on behalf of Pega, January 2022

INVESTMENT OBJECTIVES

The decision-makers searched for a solution that could:

- Improve visibility and transparency within a business process and across the enterprise overall.
- Target the inefficiencies in complicated mission-critical business processes that involve many business-line FTEs or require a significant amount of time to complete.
- Increase operational efficiency by standardizing processes and identifying opportunities within those processes for automation.
- Provide multiple automation capabilities in one solution that could be configured to meet business needs.
- Strengthen business agility by improving the ability to coordinate, track, and prioritize work across teams within the organization.
- Cut down on rework, speed up deployment through improved business and IT co-innovation, and enable scalability through reusable assets.
- Reduce or remove the reliance on email and spreadsheets for work management.
- Uplift both employee and customer experience.
- Support the organization's broader, organizationwide transformation initiative.

After an extensive request for proposal (RFP) and business-case process evaluating multiple vendors, the interviewees' organizations chose Pega and began deployment.

- Most interviewees' organizations chose a phased approach to implementation, beginning with a six-

Figure 2

"What goals/challenges did your organization hope to address by investing in Pega Platform?"

Base: 125 decision-makers responsible for automation and robotics for their organization

Source: A commissioned study conducted by Forrester Consulting on behalf of Pega, January 2022

month development project of a single key business process.

- Interviewees' organizations were able to extend the development effort across to multiple business processes within the first year.
- Over time, as organizations became more mature in their usage of the platform and began to reuse components, development teams shrunk, and project timelines shortened.

"One of the differentiators that pivoted us towards Pega was integration of different methods of automation. As an opportunity, we could leverage all of those tools in combination of each other."

Automation manager, financial services

"Pega has given us control and visibility we've never had before. We know where work is within the enterprise and can really track and measure those SLAs [service-level agreements] and make sure the work is getting done within the agreed timeframes to the agreed standard and quality."

—Automation manager, financial services

COMPOSITE ORGANIZATION

Based on the interviews and survey, Forrester constructed a TEI framework, a composite company, and an ROI analysis that illustrates the areas financially affected. The composite organization is representative of the eight decision-makers that Forrester interviewed and the 125 respondents that Forrester surveyed and is used to present the aggregate financial analysis in the next section. The composite organization has the following characteristics:

Description of composite. The global, multibillion-dollar business-to-consumer organization has 100,000 employees and provides sales and customer support for its consumer products in high volume. The composite organization is looking to automate business processes that are mission-critical in nature, including end-to-end workflows implemented at both the department and enterprise level, such as email sorting or task allocation. These business processes support a high volume of FTE or high usage.

The situation. The composite organization is looking to transform into a modern digital enterprise to better engage with its customers, build efficient operations, and improve internal agility. However, the organization was constrained by the limited capabilities of its previous systems, which were both slow and inflexible. Before investing in Pega Platform, many of the organization's internal practices were still very manual or relied on rigid and unintegrated on-premises point solutions. Processes were time-consuming, inefficient, and inconsistent, and business users struggled to keep up with volume.

The composite organization wanted to improve its internal operations and customer engagement, and decision-makers saw the opportunity to create new business process management (BPM), case management, automation, and analytics capabilities with Pega Platform deployed in the cloud. The composite organization takes advantage of Pega's low-code platform with capabilities such as DPA, RPA, case management, and rules and decisioning, as well as Pega's task mining capabilities.

Key assumptions

- **Pega capabilities in use:**
  - **Low code**
  - **RPA**
  - **Case management**
  - **Rules and decisioning**
  - **DPA**
  - **Task mining**
- **100 different business processes managed**
- **Using Pega Platform in the cloud**
- **5,000 end users supported over three years:**
  - **3,000 operations FTE**
  - **1,500 contact center FTE**
  - **450 IT FTE**
  - **50 compliance FTE**

Deployment characteristics. The composite organization implements intelligent automation with Pega Platform as a strategic initiative, with a clear view of which business processes it initially hopes to analyze and optimize with the solution.

In the initial period, the organization focuses on optimizing a single use case with Pega. The initial implementation, involving the installation of Pega Platform and task mining and configuring these solutions to meet the needs of end users, takes six months to complete. Consulting resources, internal

FTE, and Pega resources are required to complete this initial build.

The organization deploys a high volume of business processes on Pega Platform in Year 1 with both the IT and business sides of the organization involved in the deployments. These processes touch a high number of end users and some of the more integral processes both departmentwide and enterprisewide within the organization.

Following the success of these early process automations, the composite organization continues to increase its Pega usage to enhance other remaining inefficient processes throughout the organization. Over time, as the company optimizes more and more business processes using Pega Platform's various automation capabilities, both development time cycles and project team sizes shrink. The organization optimizes output as it develops more reusable components and deployment teams move up the learning curve with the platform.

Over three years, the platform ultimately covers 100 different business processes and touches 5,000 end-user FTEs within the operations, contact center, IT, and compliance fields of the organization.

I started working with Pega at 4.5, and now it is at 8.6, and I have seen such a big leap of change. Pega somehow understands the pain points every single organization faces every single day, and they start implementing those pain points into the system. They understand the pulse of the market and try to create that particular value in the Pega software, so that they can actually affect the organizations they are implemented in. It's really nice that the platform is evolving every day and will continue to evolve to meet people's needs.

— Lead system architect, healthcare

Analysis Of Benefits

Quantified benefit data as applied to the composite

Total Benefits						
Ref.	**Benefit**	**Year 1**	**Year 2**	**Year 3**	**Total**	**Present Value**
Atr	Back-office operational efficiency	$12,285,900	$23,036,063	$31,335,250	$66,657,213	$53,749,705
Btr	IT ticket efficiency	$956,250	$956,250	$956,250	$2,868,750	$2,378,052
Ctr	Development productivity	$5,752,800	$3,667,410	$2,588,760	$12,008,970	$10,205,709
Dtr	Legacy environment savings	$0	$1,332,000	$2,448,000	$3,780,000	$2,940,045
Etr	Contact center efficiency	$1,395,225	$2,948,400	$3,992,625	$8,336,250	$6,704,799
Ftr	Compliance, regulatory, and audit savings	$545,220	$545,220	$545,220	$1,635,660	$1,355,881
	Total benefits (risk-adjusted)	$20,935,395	$32,485,343	$41,866,105	$95,286,843	$77,334,191

BACK-OFFICE OPERATIONAL EFFICIENCY

Evidence and data. The interviewees' organizations used Pega Platform to improve business processes and back-office employee productivity in numerous ways.

One interviewed organization told Forrester that Pega's task mining capability, Workforce Intelligence, uncovered insights that were previously unknown. The organization was able to act on the data and ultimately improve business performance.

- The financial services organization identified stages within its operations where it could shape the way it went about completing work in order to maximize efficiency. The head of workforce planning and operational insights said: "There were things within operations that would take some people 2 minutes and others 5 minutes just because they were doing something different. We moved the 5-minute people onto other tasks and created a standardized process to use going forward." The organization saved the equivalent of 20 FTEs in time per year based on these insights, which could be reallocated to more value-add work. The interviewee added, "The insights have more than paid for the solution itself."

> **"Some of the improvements are so difficult to quantify because they are small, but the power of Pega's task mining capability is being able to actually quantify exactly how often something happens and what it actually costs as a business."**
>
> *Head of workforce planning and operational insights, financial services*

Through capabilities such as case management, rules and decisioning, and DPA, organizations were

able to streamline and then improve recurring, time-consuming business processes and tasks carried out as part of a back-office employees' day-to-day activities. Previously, employees were dedicating a significant amount of their time to manual, repetitive, and tedious tasks. Using Pega Platform, the interviewees' organizations could intelligently automate these tasks or subtasks throughout the workflow, saving employees significant time and effort that they could reallocate elsewhere.

- A healthcare organization was able to reduce the time it takes to open an account by 70%, from 10 to 3 days. It was also able to improve its first-time right rates (i.e., the rate of successfully accomplishing a task on the first attempt) by 75%. A lead system architect from the organization said: "Pega has reduced the back and forth needed to bring things to approval in general, and all the necessary documents to do it are just available in the platform. It's saved a lot of time, and the speed at which we can deliver has increased immensely."
- A financial services organization used natural language processing (NLP) and self-learning AI within Pega Email Bot to determine the nature of a request and to ensure the work automatically got routed to a person with the right expertise with open capacity to work on it, rather than manually checking capacity through email. This use case improved FTE efficiency by 15%, and it has been applied to multiple teams throughout the organization.
- The same organization also used Pega Email Bot to automatically triage emails in numerous departments throughout the company. The organization receives approximately 4 million emails per year, and 90% of which are auto-triaged through the Pega Platform. An operations program manager said: "On a team with 10 to 20 people, it ended up being one person's role to pretty much look after the mailbox. That person could now completely reallocate their time elsewhere."
- Another financial services organization was able to better handle incoming service requests. An interviewee said that by reviewing requests using an intelligent virtual assistant and then sending them to the correct places, four FTEs could repurpose their time for other activities that "have driven either an uplift in customer experience or an opportunity to drive additional revenue."

> **"By taking a process that was not very well-controlled and putting it into Pega, which enforced rules on the process, we were able to significantly reduce the variability in performance."**
>
> *Technical program manager, software*

Interviewees' organizations were able to ramp up the productivity and efficiency of end users by layering in RPA through Pega on top of their existing workflows.

- An automation manager at a financial services company said their organization gained an additional productivity benefit by using Pega Platform functionality to build a Pega bot on top of its existing workflow to verify, approve, and process third-party checks. The organization was able to develop the process in one week, and it reduced the authorization time by 90%. This process is done more than 150,000 times per year.

- A financial services organization built a Pega bot to speed up the due diligence process for high-risk customers. An interviewee from the organization said: “We have integrated the bot into our case management workflow. The bot acts in the background to open up all our legacy platforms and gather all the necessary data in a tabbed format, and you can just click through it.” The organization has seen an additional 50% efficiency improvement with the bot in place on top of the existing workflow. This process is done more than 125,000 times per year.

“If we bring advanced automation into play, like RPA, which we often do, that’s another layer of efficiency over the baseline automation efficiency with the platform.”

Automation manager, financial services

Modeling and assumptions. For the composite organization, Forrester assumes:

- In the first year, 1,800 back-office employees start to rely on Pega, and the number of employees grows to 3,000 by Year 3.
- The business user average fully burdened rate is $73,000.
- The organization sees a 5% to 8% improvement in back-office operational efficiency through improved insights with task mining.
- The organization sees a 15% to 20% improvement in back-office operational efficiency through baseline automation capabilities, such as case management, DPA, and AI within Pega Platform.
- A subset of the back-office employees on Pega Platform work in workflows with RPA layered in. For the composite organization, the number of RPA-enabled back-office employees increases from 300 to 1,000 over three years.
- The organization sees a 12% to 17% improvement in back-office operational efficiency due to the introduction of RPA for the affected workflows.
- Forrester conservatively estimates that 50% of the total time saved per business user FTE is applied directly back to value-generating tasks, and it is therefore included in the benefit calculation. Individual employees may apply additional time savings toward professional development, training, and work-life activities which were not included in the benefit analysis.

Risks. Back-office operational efficiency may vary depending on the following:

- Total number of Workforce Intelligence, Pega Platform, and RPA-enabled business users within the organization.
- The size, scope, and complexity of the business processes being automated.
- The fully burdened salaries of the affected users.
- The percentage of productivity captured by the affected users.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $54 million.

Back-Office Operational Efficiency					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
A1	Number of back-office employees affected by Pega	Composite	1,800	2,550	3,000
A2	Business user FTE yearly rate (fully burdened)	Composite	$73,000	$73,000	$73,000
A3	**Back-office operational efficiency improvement due to improved insights with Pega**	**Interviews**	**5%**	**7%**	**8%**
A4	Subtotal: Back-office operational efficiency savings due to improved insights	A1*A2*A3	$6,570,000	$13,030,500	$17,520,000
A5	**Back-office operational efficiency due to Pega-enabled automated business processes**	**Interviews**	**15%**	**18%**	**20%**
A6	Subtotal: Back-office operational efficiency savings due the introduction of automated processes	A1*A2*A5	$19,710,000	$33,507,000	$43,800,000
A7	Number of RPA-enabled back-office employees	Composite	300	700	1,000
A8	**Back-office operational efficiency due to the introduction of Pega RPA**	**Interviews**	**12%**	**15%**	**17%**
A9	Subtotal: Back-office operational efficiency savings due to the introduction of Pega RPA	A7*A2*A8	$2,628,000	$7,665,000	$12,410,000
A10	Productivity recapture	TEI standard	50%	50%	50%
At	Back-office operational efficiency	(A4+A6+A9)*A10	$14,454,000	$27,101,250	$36,865,000
	Risk adjustment	↓15%			
Atr	Back-office operational efficiency (risk-adjusted)		$12,285,900	$23,036,063	$31,335,250
	Three-year total: $66,657,213			**Three-year present value: $53,749,705**	

IT TICKET EFFICIENCY

Evidence and data. For interviewees' organizations that used Pega as a backbone for their ticketing systems, the platform reduced the ticket management burden on IT while improving accuracy rates and decreasing rework with automation.

- A software organization used a user-defined rules and decisioning engine to guide a ticket through its full lifecycle. It was also able to integrate an RPA bot into the workflow to automate and manage the full process from triaging and routing through closing for 75% of the service request tickets received. A technical program manager said: "Our engineers don't have to worry about it. It saves them time they can use to do something else."
- With the rules engine in place, the same organization saw an improvement in initial dispatch success rates for tickets related to dispatching on-site technicians. If an engineer was unavailable, the engine would follow a stack rank chain based on user-defined logic to determine the next-best engineer and engage them automatically. The organization saw an 85% accuracy rate with these rules in place through Pega. The interviewee said: "This system improved the initial success rates of dispatches. We were able to respond to more tickets within

SLA and ensure the right type of engineer was sent."

- A financial services organization was able to reduce rework through a 98% first time right rate with a bot in place as well, up 30% from its previous state.

Modeling and assumptions. For the composite organization, Forrester assumes two categories of IT ticket efficiencies:

Savings Through Ticket Automation

- The composite organization receives 3,000 IT tickets per month. It typically takes 30 minutes to triage and route a ticket.
- With an RPA bot integrated into a Pega rules and decisioning workflow, the organization is able to automate the triaging, routing, and closing of 50% of its tickets.
- The IT FTE fully burdened hourly rate is $58.
- Forrester conservatively estimates that 50% of the total time saved per IT FTE is applied directly back to value-generating tasks, and it is therefore included in the benefit calculation. Individual employees may apply additional time savings toward professional development, training, and work-life activities that are not included in the benefit analysis.

Reduction In Redispatching

- For 20% of the IT tickets the composite organization receives, a technician needs to be dispatched to a physical location to fix a problem, such as an infrastructure or network issue.
- Of these tickets, 30% are subject to redispatching. This may happen if the wrong type of technician is sent, if a technician does not show up due to capacity constraints, or if the technician does not have the correct equipment to fix the issue, among other reasons.
- With the rules engine in place, the composite organization reduces its need to redispatch a technician by 80%.
- The cost per technician trip is $500.

> **"The ability to remove human interaction from the dispatching equation saves our engineers time and performance and improves our success rate."**
>
> *Automation manager, financial services*

Risks. IT ticket efficiency may vary depending on the following:

- The number of IT tickets received, and the number associated with dispatching a technician.
- The speed of adopting the Pega Platform and using it for ticket automation.
- The hourly rate of an IT FTE and the cost of a technician.
- The percentage of productivity captured by the affected FTEs.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of $2.4 million.

IT Ticket Efficiency					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
B1	Average number of tickets per year	Composite	36,000	36,000	36,000
B2	Average time to triage and route a ticket (hours)	Composite	0.5	0.5	0.5
B3	**Reduction in tickets being triaged and routed by an IT FTE due to Pega automation**	**Interviews**	**50%**	**50%**	**50%**
B4	IT FTE hourly rate (fully burdened) (rounded)	Composite	$58	$58	$58
B5	Productivity recapture	TEI standard	50%	50%	50%
B6	Subtotal: Savings through ticket automation with Pega	B1*B2*B3*B4*B5	$261,000	$261,000	$261,000
B7	Percent of tickets for which a technician has to be dispatched to a location	Interviews	20%	20%	20%
B8	Percentage of tickets pertaining to redispatching	Composite	30%	30%	30%
B9	**Reduction in the need to redispatch a technician due to improved success rates of the initial dispatch with Pega**	**Interviews**	**80%**	**80%**	**80%**
B10	Cost per technician trip	Composite	$500	$500	$500
B11	Subtotal: Reduction in redispatching due to Pega	B1*B7*B8*B9*B10	$864,000	$864,000	$864,000
Bt	IT ticket efficiency	B6+B11	$1,125,000	$1,125,000	$1,125,000
	Risk adjustment	↓15%			
Btr	IT ticket efficiency (risk-adjusted)		$956,250	$956,250	$956,250
	Three-year total: $2,868,750			**Three-year present value: $2,378,052**	

DEVELOPMENT PRODUCTIVITY

Evidence and data. Interviewees' organizations experienced both faster delivery timelines and a reduction in resources needed to deploy process automations due to the low-code development environment of Pega Platform and the reusability of developed components.

Prior to using Pega Platform, interviewees' organizations used legacy monolithic solutions that relied on traditional, hard-coding programming languages and older development techniques. Development cycles on these platforms were sometimes as long as 12 to 18 months, and the solutions lacked the flexibility and scalability needed to quickly react to changing regulations, shifting market dynamics, or evolving customer expectations.

With the implementation of the Pega low-code platform, these organizations increased collaboration between IT and business, reduced rework, and increased reuse. Development efforts continue to optimize over time to improve output while overall project timelines and resources needed per project decrease.

- A central product owner at a financial services organization reported that with Pega, process release time became two times faster than in its previous state, with some releases taking as little

as two weeks. They said: “The power of Pega Platform is that when you create a connection, you can reuse it next time. And as we reuse more and more, we are seeing our time-to-market become faster and faster.”

- The same interviewee cited the reusability aspect as a reason for decreasing the number of engineers involved per process over time. They said: “If you have several components you have to maintain, you need different engineers to be involved. If you have one single reusable component, it allows a lot of engineers to focus on other projects.” The interviewee’s organization scaled down the number of engineers involved in the deployment process by 15% in one year.
- A financial services organization reorganized its deployment effort into squads, each with a mix of business end users and engineers. It previously relied more heavily on engineers. Over time, as it improved its setup, the organization has been able to shorten delivery times as well. An Automation manager at the organization said: “Business-aligned folks — not the technical people — actually design the process and help build the workflows with the business. As we go through deployment phases, the technical folks get a bit more involved in ensuring we are doing the releases effectively. But honestly, our testing is now pretty heavily automated. Even the amount of time we are having to spend at the back end of the deployment process is getting less and less.”
- Interviewees at a financial services organization noted that deployments now take eight to 10 weeks, compared to 18 months with its previous solution, and it can be done at a fraction of the cost. The head of automation said: “An activity that would have costed more than $1 million with our previous solution costed one-tenth of that with Pega. Pega allowed us to push forward our digitalization effort faster across our company.”

“If we’re trying to automate a new process, with low code, we can just build off what we already made. We don’t have to start from scratch every time.”

Automation manager, financial services

- A lead system architect at a healthcare organization described the value of having a single platform across all teams when it comes to deployments. They said: “Previously, to test one application, we needed 10 different teams all based on different applications [and] all on different timelines. And once we deployed, there would be a bunch of bug fixes and production issues because no one was aligned from the start. But with Pega, I have one platform with streamlined sprints. Every 10 days, something is going to production and there is no downtime. All teams are aligned to the assignment, so everyone knows where we are in the production and deployment phases, and everyone is happier and more collaborative.” The interviewee’s organization was able to bring down its release times from months to days.
- Decreased project timelines enabled organizations to deploy more processes per year than they would have been able to previously. According to the survey, respondents’ organizations were able to increase the number of processes developed per year by 26%. Additionally, respondents reported that developer productivity increased at their organizations because developers were able to spend 15% less of their time and effort on gathering requirements and developing, testing, and

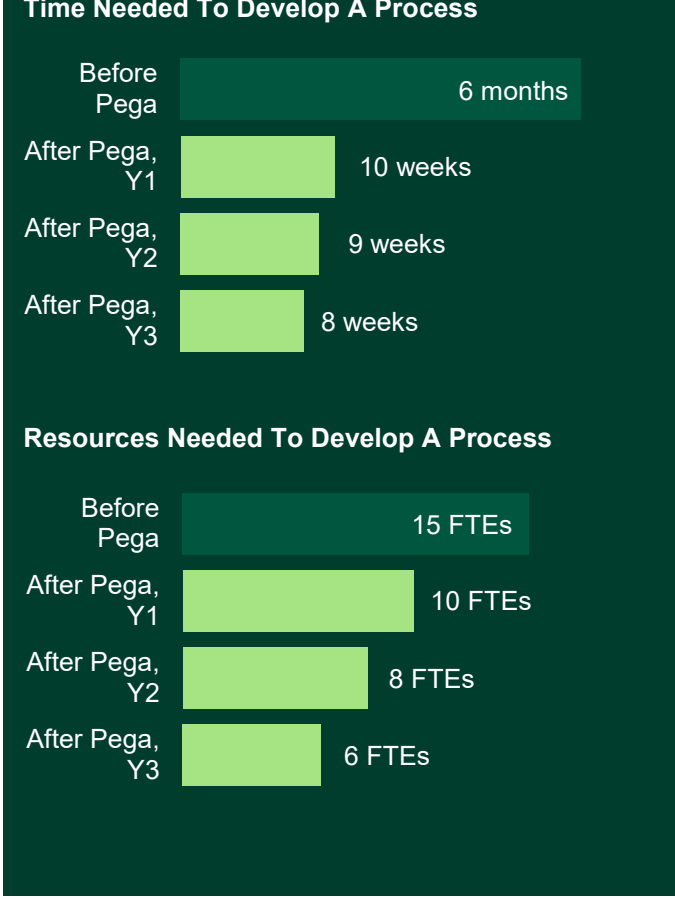
implementing a process and refocused their efforts on value-add activities.

Modeling and assumptions. For the composite organization, Forrester assumes:

- The composite organization uses Pega to automate 100 business processes over three years. The organization automates 50 processes in Year 1. These are the processes the organization was initially looking to target with the Pega investment. In the second and third year, the organization automates 30 and 20 processes respectively.
- With the Pega Platform, it takes the composite organization 10 weeks in Year 1, nine weeks in Year 2, and eight weeks in Year 3 to deploy a business process, compared to six months in the previous state. The time to deploy a process goes down over three years as the reusability of components and internal knowledge on the platform's capabilities increases.
- In the composite's previous state, 15 FTEs spent 30% of their time involved in process development and maintenance. Development teams were a mix of business and IT. This is 50% more than what is needed in the first year with Pega Platform for intelligent automation, as modeled in Cost J: Development Costs. The decrease in resources needed is due to the platform's ease of use, the ability to create a structured, repeatable deployment journey, the reusability factor, and the cloud environment.
- The daily blended rate of business users and IT is $47.

Risks. Development productivity may vary depending on the following:

TIME AND RESOURCES NEEDED FOR PROCESS DEVELOPMENT WITH PEGA PLATFORM



- The size, scope, and complexity of the business processes being implemented.
- The available capacity and skill set of the IT and business personnel working on process automations.
- The salaries of FTEs.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of $10.2 million.

Development Productivity					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
C1	Number of processes released	Composite	50	30	20
C2	Average number of days per process before	Interviews	130	130	130
C3	Average number of days per process with Pega	Interviews	50	45	40
C4	**Days saved per process with Pega**	**C2-C3**	**80**	**85**	**90**
C5	Average number of staff involved per process before	Composite	15	15	15
C6	Time spent per staff per process	Composite	30%	30%	30%
C7	Average hourly blended rate, business user and IT (rounded)	Composite	$47	$47	$47
Ct	Development productivity	C1*C4*C5*C6*C7*8 hours	$6,768,000	$4,314,600	$3,045,600
	Risk adjustment	↓15%			
Ctr	Development productivity (risk-adjusted)		$5,752,800	$3,667,410	$2,588,760
	Three-year total: $12,008,970			**Three-year present value: $10,205,709**	

LEGACY ENVIRONMENT SAVINGS

Evidence and data. As the interviewees' organizations expanded their Pega Platform deployments, they were able to retire legacy software platforms throughout the enterprise and replace the functionality with end-to-end workflows built and intelligently automated with the Pega Platform. By decommissioning legacy technologies, the interviewees' organizations avoided both licensing fees as well as the effort to maintain those legacy applications. Additionally, with Pega, organizations were able to replace legacy platforms gradually rather than all at once, which eased the transition for the organizations as well.

- A healthcare organization saw more than $8 million in savings from retiring its legacy on-premises mainframe platform along with other discrete solutions within two years of deploying Pega Platform.
- A financial services organization was able to sunset a few workflow applications once implementing Pega Platform. An interviewee with the organization estimated that the company saved "well north of $1 million in support costs" as a result.
- According to the survey, respondents' organizations saved more than $500,000 per year by decommissioning or consolidating legacy tools.

Interviewees reported that Pega Platform required less effort to maintain than previous platforms, partly due to the ease of use of the platform, as well as the fact that that it was deployed in the cloud. As a result, the interviewees' organizations supported business process improvements with smaller ongoing management teams, as shown in Cost H: Internal Implementation And Ongoing Management.

Modeling and assumptions. Forrester assumes the composite organization realizes two types of legacy

environment savings: 1) avoided license fees and 2) avoided maintenance effort. For the composite, Forrester assumes:

- In Year 1, the composite organization keeps its legacy solutions as it continues to deploy Intelligent Automation across the organization.
- In Year 2, as Pega deployment expands, the composite organization decommissions a $1 million on-premises mainframe platform.
- In Year 3, the composite organization retires two discrete legacy applications after deploying processes on the Pega Platform to supplant them. These applications covered tasks such as task, data, or document management and monitoring and had never fully met the organization's needs.
- Four IT FTE had maintained the mainframe solution, and two IT staff members managed the retired applications.
- The IT FTE fully burdened rate is $120,000.

Risks. Legacy environment savings may vary depending on the following:

- The size, scope, and complexity of processes being deployed on Pega/processes being replaced.
- License fees and rate of decommissioning of existing solutions.
- Salaries, types, and number of FTEs managing the legacy solutions.
- Legacy solution deployment setup (e.g., on-premises vs. the cloud)

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of $3 million.

"The ability to integrate [Pega Platform] very seamlessly into our overall architecture is key. We are trying to move away from vendor entanglement and are in the process of decommissioning our legacy solutions, and having vendors who can help lighten entanglement is always going to be a beneficial, particularly if I've got the depth of capability and functionality that the Pega Platform has."

Head of automation, financial services

Legacy Environment Savings					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
D1	Total annual license cost savings from decommissioning a redundant legacy DPA Platform	Interviews	$0	$1,000,000	$1,000,000
D2	Number of other redundant legacy software retired	Composite	0	0	2
D3	Annual license cost per other redundant legacy software	Interviews	$0	$0	$500,000
D4	Subtotal: Avoided license fees	D1+(D2*D3)	$0	$1,000,000	$2,000,000
D5	IT reassigned once retiring legacy solutions	Interviews	0	4	6
D6	IT FTE yearly rate (fully burdened)	Composite	$120,000	$120,000	$120,000
D7	Subtotal: Avoided maintenance effort	D5*D6	$0	$480,000	$720,000
Dt	Legacy environment savings	D4+D7	$0	$1,480,000	$2,720,000
	Risk adjustment	↓10%			
Dtr	Legacy environment savings (risk-adjusted)		$0	$1,332,000	$2,448,000
	Three-year total: $3,780,000			**Three-year present value: $2,940,045**	

CONTACT CENTER EFFICIENCY

Evidence and data. Organizations were able to enhance productivity in their contact centers through decreasing downtime, reducing time spent on non-value-add tasks, and shrinking average handle time for agents with automations through Pega Platform and insights generated with task mining.

- RPA provides a tactical fix to digitize common agent tasks and can improve productivity and, ultimately, the bottom line.[3] A financial services organization was able to reduce the time spent by agents on opening different portals and applications needed to begin their workday by 70% by using bots to do the work in the background.
- In a similar vein, the same organization now uses robotics through Pega Platform to consolidate all relevant customer information from legacy systems into a single portal for an operator to use when on a call with a customer. Additionally, the bot effectively re-keys the customer information from the legacy systems into the organization's current CRM system while the customer interaction is still taking place, leaving the information in the single place for the agent if the customer calls back. An interviewee from the organization said: "The bot allows our agents to stay focused on the call and the customer instead of them partly listening because they are trying to gather all the information they need to do their job." This process happens hundreds of thousands of times per year.
- Another financial services organization was able to decrease downtime for its contact center agents by 70% based on conclusions drawn through task mining. An example mentioned was correlating high system downtime to the equipment an agent had in their home working environment at the beginning of the pandemic. A

head of workforce planning and operational insights at the organization said: “We quickly realized that certain headsets died faster or lost connection more than headsets others may have been using, and we were able to equip these agents with the right equipment to improve their productivity. We may have found this out eventually. But with all our agents in different locations, it would have taken much longer, which could lead to agent frustration and negative customer experiences with customers they may be speaking with. No way would we have been able to act and improve as fast as we had.”

- The same organization was able to use data from task mining to improve average handle time for agents by 25%. Task mining uncovered in-depth insights into what particular processes an agent was struggling with. Based on the data, managers and team leaders could focus their trainings on the pain points of the particular agent and make it more targeted. An interviewee from the organization said: “Our agents told us, ‘We love having our managers specifically telling us what was causing our performance to degrade and where we need to focus, as opposed to just saying, ‘Here’s a metric you’re really failing on.’ It’s been transformative for us.”

Reduction in non-value-generating time for contact center agents over three years

60% to 70%

Modeling and assumptions. For the composite organization, Forrester assumes:

- The composite organization increases its Pega-enabled contact center agents from 900 to 1,500 over three years.
- Before using Pega, each agent spent 30 minutes on non-value-add activities, such a reconciling data across different platforms.
- Each agent sees a 60 to 70% reduction in time spent on such tasks over three years with Pega. The average agent works 260 weeks per year.
- Each agent handles 50 contact center interactions per day. The average handle time is 7 minutes.
- Agents reduce their average handle time by 10 to 20% over three years due to improved insights through task mining.
- The fully burdened hourly rate of a contact center agent is $15 per hour.
- Forrester conservatively estimates that 50% of the total time saved per agent is applied directly back to value-generating tasks, and it is therefore included in the benefit calculation. Individual employees may apply additional time savings toward professional development, training, and work-life activities that are not included in the benefit analysis.

Risks. Contact center efficiency may vary depending on the following:

- The size of the Pega-enabled contact center workforce.
- Time spent on non-value add tasks by contact center agents.
- The volume of contact center interactions per agent per year.
- Average handle times experienced before and after the investment. For the composite

organization, targeted training and personalized coaching reduces average handle times for agents. However, interactions (e.g., for a sale or recommendation) may become more complex, which may cause average handle times to extend.

- Average fully burdened hourly rates for contact center agents and the percentage of productivity captured by the impacted agents.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of $6.7 million.

Contact Center Efficiency

Ref.	Metric	Source	Year 1	Year 2	Year 3
E1	Number of Pega-enabled contact center agents	Composite	900	1,400	1,500
E2	Time spent on non-value add tasks before (minutes)	Interviews	30	30	30
E3	**Reduction in time spent on non-value-add tasks due to Pega**	**Interviews**	**60%**	**65%**	**70%**
E4	Average number of workdays per year	Composite	260	260	260
E5	Subtotal: Hours saved on non-value-add tasks per agent with Pega	E2*E3*E4/60 minutes	78	85	91
E6	Total number of interactions handled per agent per year	Composite	13,000	13,000	13,000
E7	Average handle time before Pega (minutes)	Interviews	7	7	7
E8	**Reduction in average handle time with Pega**	**Interviews**	**10%**	**15%**	**20%**
E9	Subtotal: Time saved per agent from a reduction in average handle time with Pega (hours)	E6*E7*E8/60 minutes	152	228	303
E10	Contact center agent FTE hourly rate (fully burdened) (rounded)	Composite	$15	$15	$15
E11	Productivity recapture	TEI standard	50%	50%	50%
Et	Contact center efficiency	(E5+E9)*E1*E10*E11	$1,550,250	$3,276,000	$4,436,250
	Risk adjustment	↓10%			
Etr	Contact center efficiency (risk-adjusted)		$1,395,225	$2,948,400	$3,992,625
	Three-year total: $8,336,250		**Three-year present value: $6,704,799**		

COMPLIANCE, REGULATORY, AND AUDIT SAVINGS

Evidence and data. Interviewees' organizations were able to demonstrate a strong compliance posture and respond to actions in a timely fashion due to improved transparency and tracking abilities with Pega Platform.

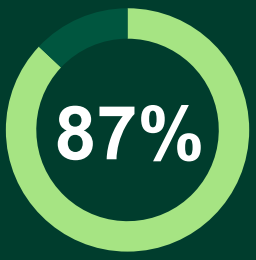
Interviewees said their organizations previously were challenged with improving and maintaining ongoing compliance across a variety of regulations and frameworks, as well as providing proof to auditors and regulators that their environment was under control. In their previous environments, with disparate systems and ineffective processes, meeting audit requirements was an arduous process.

After implementing Pega, organizations gained consolidated visibility into their compliance postures. With structure and clarity regarding data and audit-trail reporting through the platform, organizations experienced a reduction in regulatory fines and increased efficiencies in ensuring, proving, and demonstrating compliance in regulated environments for their compliance teams.

- A financial services organization was able to avoid compliance fines by enabling its internal audit department to resolve findings within a specific period of time using Pega's tracking abilities before being audited by external parties. The organization saved hundreds of thousands of dollars.
- The same organization was able to move data and processes from underperforming, non-secure tools, into Pega. An interviewee from the organization said: "We now have proper access management in place, better data privacy, a proper data model, and clear visibility over the data. These things have always been important but were nonexistent [before]." The organization's compliance/governance team saved 10% of its time previously spent on trying to manage data.
- A financial services organization built a remediation-specific framework on Pega, which created an overarching governance flow. The head of automation at the organization said: "It absolutely ensures that we know where the work is. We can track it, we can report to the regulator to make sure they are aware that we are doing it, and, also, we can ensure the customers are getting timely outcomes and getting the responses they require. We're able to demonstrate to our regulators and auditors the fact that this process is managed in this particular way. [It's the] same time every time. Here's how long it takes. Here's whose hands it goes through. It's orderable and referenceable and that was the key." The organization was able to avoid fines that could have been several millions of dollars, partly due to the improved transparency with Pega.

COMPLIANCE SAVINGS

Survey respondents reported that Pega helped optimize the internal compliance environments at their organizations.



indicated that Pega has made it easier to ensure and demonstrate compliance with reporting requirements/deadlines.

stated that improved compliance with Pega has reduced staff time to manage the regulatory process.

Base: 125 decision-makers responsible for automation and robotics for their organization

Source: A commissioned study conducted by Forrester Consulting on behalf of Pegasystems, January 2022

Modeling and assumptions. For the composite organization, Forrester assumes two categories of compliance, regulatory, and audit savings:

Fine Avoidance

- The composite organization avoids paying $2 million worth of fines. Forrester's approach to valuing the avoided fine is conservative, reflecting an array of incident types and costs. Depending on an organization's industry, geographic focus, and operational processes, both risk and cost will vary.
- Based on interviewee responses, the composite organization attributes 20% savings to Pega Platform.

Productivity Savings

- The composite organization has 50 employees dedicated to information security and governance.
- Each employee saves 4 hours per week on compliance efforts due to improved tracking abilities in Pega. The average employee works 49 weeks per year.
- The fully burdened blended hourly rate of information security and governance employees is $42 per hour.
- Forrester conservatively estimates that 50% of the total time saved per employee is applied directly back to value-generating tasks, and it is therefore included in the benefit calculation. Individual employees may apply additional time savings toward professional development, training, and work-life activities which are not included in the benefit analysis.

Risks. Compliance, regulatory, and audit savings may vary depending on the following:

> **"The unknowns are greatly reduced because we now have audit history and a clear timeline of events."**
>
> *Lead system architect, healthcare*

- The prevalence, nature, and average cost of fines in the organization's industry.
- The geographic scope of the organization's operations.
- Regulatory and compliance measures the organization is required to follow.
- The organization's prior state and maturity level for compliance and information security.
- The number of employees dedicated to information security and governance.
- The fully burdened compensation of those in charge of compliance and the percentage of productivity captured by the impacted employees.
- The speed of Pega adoption into the organization.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of $1.4 million.

Compliance, Regulatory, And Audit Savings					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
F1	Fines avoided	Interviews	$2,000,000	$2,000,000	$2,000,000
F2	Percentage attributable to Pega	Composite	20%	20%	20%
F3	Subtotal: Avoided fines due to Pega	F1*F2	$400,000	$400,000	$400,000
F4	Number of employees dedicated to information security and governance	Composite	50	50	50
F5	Time saved per employee due to improved transparency and tracking abilities with Pega (hours)	Interviews	196	196	196
F6	Information security and governance blended hourly rate (fully burdened) (rounded)	Composite	$42	$42	$42
F7	Productivity recapture	TEI standard	50%	50%	50%
F8	Subtotal: Information security and governance productivity savings with Pega	F4*F5*F6*F7	$205,800	$205,800	$205,800
Ft	Compliance, regulatory, and audit savings	F3+F8	$605,800	$605,800	$605,800
	Risk adjustment	↓10%			
Ftr	Compliance, regulatory, and audit savings (risk-adjusted)		$545,220	$545,220	$545,220
	Three-year total: $1,635,660			**Three-year present value: $1,355,881**	

UNQUANTIFIED BENEFITS

Additional benefits that customers experienced but were not able to quantify include:

- **Increased visibility.** Using capabilities such as task mining and case management under Pega Platform's intelligent automation umbrella, organizations gained insight into what was unknown in their previous environments. The interviewees' organizations were able to analyze their processes, track workflows, and gather and extract relevant reporting data. For some organizations, they were able to enhance performance based on these insights. A lead system architect said: "We were able to see how many minutes [a particular process] was taking, what step was taking the most time, and what service changes we needed to make to decrease

"One of our core values and priorities is putting customers first, and Pega has allowed us to really help our employees be as good as they possibly can to help our customers."

Head of workforce planning and operational insights, financial services

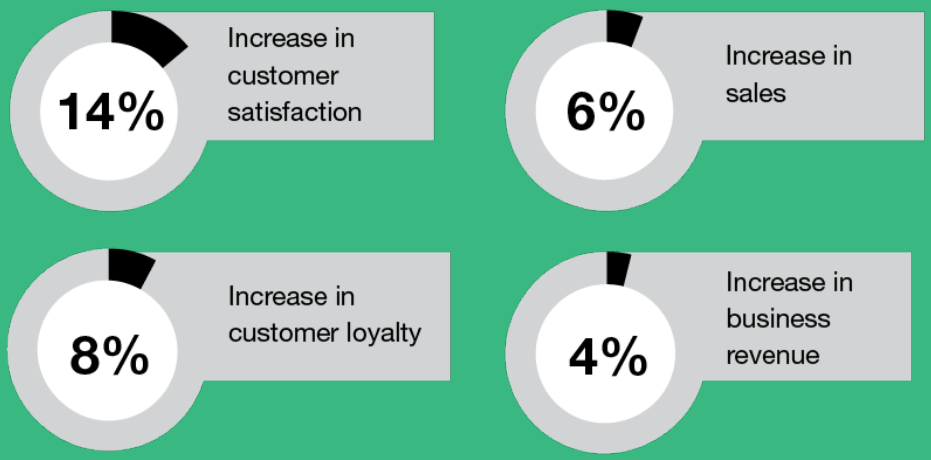
the time spent on these steps, all based on data in user-friendly pie charts and graphs."

A head of workforce planning and operational insights at another organization used the data to impact companywide decisions. They said: "My planners absolutely love it because it gives them visibility of all of the offline, back-office work, as well as the online work, like taking calls. The transparency we have with Pega has helped them improve their annual budgetary plans and how we move forward as an organization."

- **Growth from improved customer experience.** According to the survey, nearly two-thirds of respondents' organizations have experienced an increase in customer satisfaction and an improvement in competitive positioning since implementing Pega Platform for intelligent automation. The solution has helped their organizations develop business models faster and more efficiently through both process and people optimization. By streamlining external processes that help accelerate the fulfillment of customer requests, speeding up the resolution of customer inquiries, and introducing features such as self-service portals with around-the-clock access, organizations are able to provide more modern and pleasing experiences for customers. Internally, having the ability to monitor processes in a centralized place decreased back and forth and resulted in better quality outcomes and faster delivery. In conjunction, the organizations are now able to identify where customer-facing employees may struggle and what their training needs may be and develop them to better deliver to customers based on those insights.

Faster action as a result of automation and improved insights optimizes customer experiences, and survey respondents noted that these outcomes contribute to top line and loyalty.

The Impact Of An Improved Customer Experience Through Intelligent Automation With The Pega Platform



"We have a record of all of our inbound customer requests, and we were able to use that information to check in with our customers at the six-month mark and actually drive that one-to-one customer engagement and ensure we were still supporting them in the manner that they needed. We were the only bank that was proactively reaching out to our local customers and driving those conversations as opposed to the customers themselves having to contact the bank, because we were able to get all of that inbound stuff digitized with Pega, leverage those records, and use them to drive those outbound recontacts." [Head of robotics and automation, financial services]

Base: 125 decision-makers responsible for automation and robotics for their organization
Source: A commissioned study conducted by Forrester Consulting on behalf of Pega, January 2022

“We had a certain SLA for some issues because identifying, triaging, understanding, and ultimately solving them involved multiple different teams to. It was difficult to coordinate and track the issue through closing the case. We used to have a 50% SLA-met percentage for these issues. Once we started using Pega, we were able to raise that to 75% SLA met”

Technical program manager, software

- **Improved employee experience.** One interviewee noted that employee satisfaction at their organization rose by 13 points with the implementation of task mining. The organization was able to strengthen its employee relationships through performance-based training based on the insights generated by the solution. An interviewee at the organization said, “It enables employees to feel truly supported with no sense of 'big brother.'"

  Additionally, by automating some of the more mundane, non-value-adding tasks within processes with the Pega Platform, interviewees collectively described employee experiences where users in different areas of the organization spend more time on true knowledge work and learning skills for future responsibilities. According to the survey, this drove increased satisfaction and retention rates. Respondents noted a 17% increase in developer satisfaction and an 18% increase in developer retention rates on average at their organizations.

- **Closer collaboration between business and IT.** Siloed IT and business functions delivered mixed quality in organizations’ legacy environments, and 38% of survey respondents noted that this resulted in suboptimal solutions, delays, and rework. The development work done by internal IT professionals required intensive coding knowledge in the before state.

  Meanwhile, end users of the workflows being built who did not have this knowledge were often separated from the development effort. This system resulted in output that had mixed results in terms of quality and success in the business lines. With Pega Platform, the interviewees’ organizations were able to change the composition of their delivery teams to be more balanced between business and IT, rather than IT-centric. This collaborative approach created more successful output and alleviated the pressure on IT to deliver a quality result. Business users became more heavily involved in the development process and they could provide input and suggest changes, which changes the dynamics around issue resolution. Additionally, as initial specifications became clearer and less time was wasted on back and forth communications, workflows were developed faster, and organizations became more agile.

- **Organizational restructuring.** With the automation of certain tasks within processes, organizations are better able to follow through with their visions of becoming more digitally modern organizations. Intelligent Automation with Pega Platform promotes reorganization that further improves efficiencies: The head of automation at a financial services organization said: “The main driver for rolling to Pega Platform was to do a significant reorganization. To drive efficiencies in the way our system worked, we wanted to shift our associates to a pooled method rather than the individual assignment

method we currently had. The challenge with that is making those associate pools actually work, which is where Pega came in. We could build a whole set of workflows that allowed the work to flow business workers and customers into those associate pools using natural-language processing to make sure the work gets routed correctly. This has allowed us to do that reorganization relatively seamlessly."

- **Avoiding the wrong technical decisions.** Interviewees said that through access to a wide breadth of workflow automation capabilities with Pega Platform, their organizations were able to avoid going down the wrong strategic route when making business decisions. For instance, a financial service organization used RPA layered into case management to improve a certain business process. Without Pega, the organization's IT team would have had to spend weeks creating a complex solution that may not have stood up to the test of time as the organization and market continues to change. Additionally, through improved monitoring and tracking, organizations could take more evidence-based actions, rather than blindly making a decision, which saves time, effort, and costs.

"[With Pega], we were able to create delivery squads, each consisting of developers, operations, business people, and an administrative representative. They are able to collaborate, develop, and deliver together because the software is flexible, clear, and easy to use. We're able to have some sort of output in as little as two weeks."

Central product owner, financial services

Business In The COVID-19 Era

Through the uncertainties of the global pandemic, interviewees' organizations uncovered opportunities to promote digital transformation and improve both customer and employee engagement by intelligently automating with Pega Platform.

> A financial services organization saw a huge influx of customer requests regarding payment deferrals at the start of the pandemic. Working with Pega, the organization digitized the experience. The customer information was processed and interrogated through Pega Platform and directed to the correct teams. As the process matured, a series of robotic process automations were built on the back end of the workflow to automate the payment deferrals rather than getting relationship managers involved. The organization was able to **automate 50% of inbound requests.**
>
> On the customer side, the organization used Pega to gather the necessary contact points and case reference numbers to help customers self-service. The platform actively monitored email as well. If customers continued to provide information via email, Pega filtered the content and attached the data to the necessary reference number, creating an end-to-end chain for the case. With this system in place, the organization **reduced the time to resolution from two to four weeks down to 24 hours.**

FLEXIBILITY

Flexibility and scalability were key requirements for the interviewees' organizations. All of their organizations were challenged by the relative rigidity of their legacy systems and tools, and they recognized the need for a more flexible solution that could quickly adapt to changing external market imperatives or internal needs. However, the value of flexibility is unique to each customer. The interviewees' organizations predict that future usage of Pega will amplify existing cost savings and productivity benefits already realized in the following ways:

- **Expanding use.** Interviewees expressed interest in expanding their organization's use of Pega Platform. Some interviewees described this in terms of trying out different capabilities that may not currently be in use. One interviewee stated: "Now that there's significant capability in the tool, we're certainly looking to leverage it more broadly by building a tight integration between the Pega Platform capabilities we currently use and Pega Robotics. That is the next untapped opportunity that will be a key focus for us over the next 12 to 24 months."

  Others mentioned enabling more automated processes throughout the organization or extending the effects of the platform to more users. An interviewee at a healthcare organization stated that they hoped to double their organization's number of teams on the platform within the next year. Similarly, an interviewee at a software organization was optimistic about expanding the number of people and use cases on the platform. They said: "Pega allows us to understand the state of different operational processes and critical paths in different systems and elevate that to an orchestration layer. We want to take Pega's capabilities of case management, process orchestration, and other things, and expand the scope of use cases to not only just be limited to

our division of the company, but to any team within the organization. We have been building out this orchestration layer and piloting it across the company for two months. We are excited to see where this will go."

Business In The COVID-19 Era (cont.)

In the era of remote work, a financial services organization used task mining to help contact center employees understand their performance. An interviewee said: "Traditionally, in a contact center, team leads would sit next to someone when they're struggling and coach them. Remotely, you can't see what they're doing. You only see an abnormal metric with no background on the number. But Workforce Intelligence can empower employees to understand where they are struggling, right down to the specific process in a metric." The interviewee said they believe their organization **avoided an extra 20% of operational costs** with the targeted training approach based on Pega insights while improving employee morale.

- **Further optimizing output with the reusability of developed components.** As the investment and use of Pega Platform increases, so does the pool of components available for reuse and the availability of internal resources available to put them into action. Interviewed organizations expect to further optimize output using their growing pools of developed components, which enables them to avoid adding headcount.
- **Further consolidation of legacy systems.** Interviewees' organizations had begun their journeys of decommissioning legacy systems, and they looked forward to continuing to replace these solutions to further streamline their technical architectures. This can happen over time as more business processes are supported with the platform and there is less reliance on the systems of the past.

> **"We are processing 50% of our data in [a legacy system] and 50% in Pega. We want to have it 100% on Pega. That's the visual path."**
>
> *Lead system architect, healthcare*

- **Introducing citizen developers.** Interviewees' organizations looked toward taking advantage of the intuitive UI of the Pega low-code platform by introducing citizen developers in the upcoming years. Since the platform does not require hard-coding to develop and adapt process automations over time, organizations were optimistic about empowering business users to build their own workflow automations rather than relying on IT for the development work. By reallocating a portion of the development work from IT to citizen developers, organizations can further alleviate the burden on IT while potentially improving the ability of completed projects to reach strategic business goals.

Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in Appendix A).

Analysis Of Costs

Quantified cost data as applied to the composite

Total Costs							
Ref.	**Cost**	**Initial**	**Year 1**	**Year 2**	**Year 3**	**Total**	**Present Value**
Gtr	Fees to Pega	$110,000	$1,742,400	$2,555,520	$2,904,000	$7,311,920	$5,987,818
Htr	Internal implementation and ongoing management	$216,150	$79,200	$79,200	$79,200	$453,750	$413,109
Itr	Professional services fees	$550,000	$1,650,000	$1,100,000	$550,000	$3,850,000	$3,372,314
Jtr	Development costs	$0	$3,102,000	$1,340,064	$595,584	$5,037,648	$4,374,962
Ktr	Training fees	$65,164	$425,150	$198,935	$89,815	$779,064	$683,552
	Total costs (risk-adjusted)	$941,314	$6,998,750	$5,273,719	$4,218,599	$17,432,382	$14,831,755

FEES TO PEGA

Evidence and data. The interviewees' organizations paid annual fees to Pega that combine licensing fees and ongoing support. There is also a one-time fee for Pega professional services during the initial deployment period. License fees are based on a per user per month basis and is a blended rate that scales based on:

- The number of IT development resources using the platform to develop business processes.
- The number of business-line end users of those processes.
- The number of high-touch versus low-touch users.
- The Pega products the organization currently has deployed because bundling is available.

Modeling and assumptions. For the composite organization, Forrester assumes:

- The cost of Pega includes support as well as the platform and task mining capabilities.
- The composite organization pays $100,000 for Pega development resources and professional services over the six-month initial implementation period.

Risks. Fees to Pega may vary depending on the following:

- The size of the organization and the number of developers, end users, and high-touch users versus low-touch users, as well as the cases handled using the platform.
- The timeline of the initial implementation period and amount of assistance needed during that time.
- The other Pega solutions the organization currently has deployed.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $6 million.

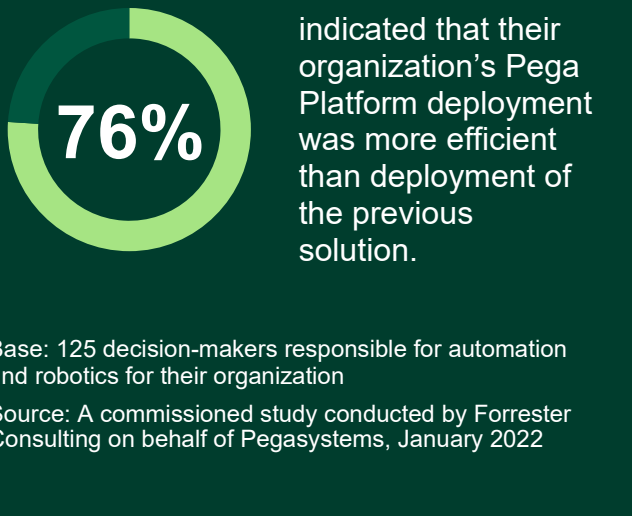
Fees To Pega						
Ref.	**Metric**	**Source**	**Initial**	**Year 1**	**Year 2**	**Year 3**
G1	Number of end users	Composite	0	3,000	4,400	5,000
G2	Annual Pega license fee	G1*$44 per end user per month	$0	$1,584,000	$2,323,200	$2,640,000
G3	Pega installation fee	Composite	$100,000	$0	$0	$0
Gt	Fees to Pega	G2+G3	$100,000	$1,584,000	$2,323,200	$2,640,000
	Risk adjustment	↑10%				
Gtr	Fees to Pega (risk-adjusted)		$110,000	$1,742,400	$2,555,520	$2,904,000
	Three-year total: $7,311,920			**Three-year present value: $5,987,818**		

INTERNAL IMPLEMENTATION AND ONGOING MANAGEMENT

Evidence and data. Interviewees described their organizations' implementations and ongoing management experiences with Pega Platform.

- Most organizations took an average of six months to implement Pega Platform, integrate it into existing systems, set up the initial use case, and deploy task mining through Workforce Intelligence.
- The organizations involved both system architects and developers for the initial platform planning and installation. When using task mining, data analysts were engaged to identify and map out the preliminary business processes.
- Developers provided ongoing upkeep of the solution infrastructure and ensured continued releases were effective. Data analysts continued to maintain and monitor task mining through Workforce Intelligence, analyze the data, and look for opportunities for efficiency.

Modeling and assumptions. For the composite organization, Forrester assumes:



- Two system architects dedicate 50% of their time during the initial six-month implementation period.
- Six developers spend 30% of their time on implementation. After that, two developers dedicate 15% of their time per year to manage the solution
- Two data analysts spend 50% of their time on implementation of Workforce Intelligence and dedicate 30% of their time per year to continue to manage the solution.

- The average fully burdened salary of a system architect is $130,000.
- The average fully burdened salary of a developer architect is $110,000.
- The average fully burdened salary of a data analyst is $65,000.

Risks. Internal implementation and ongoing management may vary depending on the following:

- The size, scope, and complexity of operations.
- The available capacity and skill sets of teams.
- The salaries of FTEs.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of $413,000.

Internal Implementation And Ongoing Management

Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
H1	System architect FTEs involved in implementation and ongoing management	Interviews	2	0	0	0
H2	Time dedicated by system architect FTEs (months)	Interviews	6	0	0	0
H3	Percent of system architect FTEs' time dedicated to Pega implementation and ongoing management	Interviews	50%	0%	0%	0%
H4	System architect FTE annual salary (fully burdened)	Assumption	$130,000	$130,000	$130,000	$130,000
H5	Subtotal: System architect cost of implementation and ongoing management	H1*H2*H3* (H4/12 months)	$65,000	$0	$0	$0
H6	Developer FTEs involved in implementation and ongoing management	Interviews	6	2	2	2
H7	Time dedicated by developer FTEs (months)	Interviews	6	12	12	12
H8	Percent of developer FTEs' time dedicated to Pega implementation and ongoing management	Interviews	30%	15%	15%	15%
H9	Developer FTE annual salary (fully burdened)	Assumption	$110,000	$110,000	$110,000	$110,000
H10	Subtotal: Developer cost of implementation and ongoing management	H6*H7*H8* (H9/12 months)	$99,000	$33,000	$33,000	$33,000
H11	Data analyst FTEs involved in implementation and ongoing management	Interviews	2	2	2	2
H12	Time dedicated by data analyst FTEs (months)	Interviews	6	12	12	12
H13	Percent of data analyst FTEs' time dedicated to Pega implementation and ongoing management	Interviews	50%	30%	30%	30%
H14	Data analyst FTE annual salary (fully burdened)	Assumption	$65,000	$65,000	$65,000	$65,000
H15	Subtotal: Data analyst cost of implementation and ongoing management	H11*H12*H13* (H14/12 months)	$32,500	$39,000	$39,000	$39,000
Ht	Internal implementation and ongoing management	H5+H10+H15	$196,500	$72,000	$72,000	$72,000
	Risk adjustment	↑10%				
Htr	Internal implementation and ongoing management (risk-adjusted)		$216,150	$79,200	$79,200	$79,200
	Three-year total: $453,750			**Three-year present value: $413,109**		

PROFESSIONAL SERVICES FEES

Evidence and data. Several interviewees said their organization has paid or is paying a third-party organization for support of their modernization efforts. Interviewees mentioned initial implementation, initial automation identification and setup, and/or ongoing automation setup and management as areas where support from a third party is or has been used.

Modeling and assumptions. For the composite organization, Forrester assumes:

- The composite organization pays $500,000 for the initial six-month implementation period for assistance with automation identification, setup, and design.
- The composite organization pays for continued assistance with automations and platform management over the three years. Professional services fees diminish over time as core processes and reusable assets are built and as skills transfers take place.

Risks. Professional services fees may vary depending on the following:

- The size, scope, and complexity of operations.
- The available capacity and skill set of teams.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of $3.4 million.

Professional Services Fees

Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
I1	Fees paid to third party	Interviews	$500,000	$1,500,000	$1,000,000	$500,000
It	Professional services fees	I1	$500,000	$1,500,000	$1,000,000	$500,000
	Risk adjustment	↑10%				
Itr	Professional services fees (risk-adjusted)		$550,000	$1,650,000	$1,100,000	$550,000
	Three-year total: $3,850,000			**Three-year present value: $3,372,314**		

DEVELOPMENT COSTS

Evidence and data. Following the success of initial process automations, the interviewees' organizations progressively added more processes onto the Pega Platform. Involvement from both the IT and business sides of the organization was necessary to identify, develop, and execute the automations.

- Interviewees said that after initial implementation, ongoing deployments took anywhere from two to three months, with some taking as little as two weeks.
- Several interviewees stated that their organizations used agile development teams consisting of both IT and business-aligned personnel to design the processes, conduct testing, and manage the workflows through fruition.
- Interviewees reported that, over time, the project teams decreased in size and project durations shortened, due to both the reusability of components within the platform and the fact that it was cloud-based. As the organizations moved

up the learning curve with the platform, setting up new automations became faster and cheaper.

Modeling and assumptions. For the composite organization, Forrester assumes:

- The composite organization uses the Pega Platform to develop 50 new processes in Year 1, 30 in Year 2, and 20 in Year 3
- The number of staff members involved in each process deployment consisting of both IT and business-aligned personnel decreases from 10 to six over three years. Each employee dedicates 30% of their time per business process.
- Deployments in Year 1 take 50 days to complete. Employees move up the learning curve as they use Pega Platform to build more processes, and deployment time decreases to 40 days by Year 3.
- The average daily blended rate of business users and IT staff is $47.

Risks. Development costs may vary depending on the following:

- The size, scope, and complexity of the business processes being implemented.
- The available capacity and skill set of the IT and business personnel working to identify and set up the organization's process automations.
- The salaries of FTEs.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of $4.4 million.

The time taken to deploy a new process decreases from 10 weeks to 8 weeks over three years.

Development Costs

Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
J1	Number of new business processes	Assumption		50	30	20
J2	Average number of staff per business process	Interviews		10	8	6
J3	Percent of time dedicated per staff per business process	Interviews		30%	30%	30%
J4	Average number of days per process	Interviews		50	45	40
J5	Average hourly blended rate, business user and IT (rounded)	Assumption		$47	$47	$47
Jt	Development costs	J1*J2*J3*J4*J5*8 hours	$0	$2,820,000	$1,218,240	$541,440
	Risk adjustment	↑10%				
Jtr	Development costs (risk-adjusted)		$0	$3,102,000	$1,340,064	$595,584
	Three-year total: $5,037,648		**Three-year present value: $4,374,962**			

TRAINING FEES

Evidence and data. The Interviewees' organizations educated IT resources, data analysts, and end users on how to optimize their use of Pega Platform.

- Select groups of internal IT resources required training to effectively participate in development and platform management efforts. The biggest training initiative occurred during the initial period, when Pega Platform was being implemented and as the first few automations were deployed. As deployment expanded, a few more IT resources were trained for ongoing upkeep. Interviewees said their organizations used free courses offered in Pega Academy for IT training, and they highlighted its flexibility and ease of use.
- When using Workforce Intelligence for task mining, data analysts were trained on how to use the software during the initial period. These resources used Pega Academy as well.
- End users required minimal training to use the automations, tools, and capabilities associated with their day-to-day tasks within the platform and to get involved in future process deployments. Several interviewees mentioned using a templated training approach for end users that involved sending workflow-relevant training resources to end users out of an assortment of pre-prepared materials. A train-the-trainer approach was often used as well. Using this method, targeted individuals within the role could engage and teach other team members who also interact with the platform automations.

Modeling and assumptions. For the composite organization, Forrester assumes:

- Internal IT resources require 125 hours of development training to become an expert on the platform and to begin developing process automations.

> **"[Pega Platform] is very, very straightforward to adopt. Any reasonably savvy user is able to pick it up pretty quickly. It's not something that we find takes a long time."**
>
> *Head of automation, financial services*

- Two data analysts require 20 hours of training on how to use Workforce Intelligence during the initial implementation period.
- End users spend four hours understanding how to use the platform for their day-to-day tasks and how to assist in ongoing automation deployments.
- The average hourly rate of an IT FTE is $58.
- The average hourly rate of a data analyst is $31.
- The average hourly rate of end users is $31.

Risks. Training fees may vary depending on the following:

- The size, skill, and prior experience of the organization's affected workforce.
- The salaries of FTEs.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of $684,000.

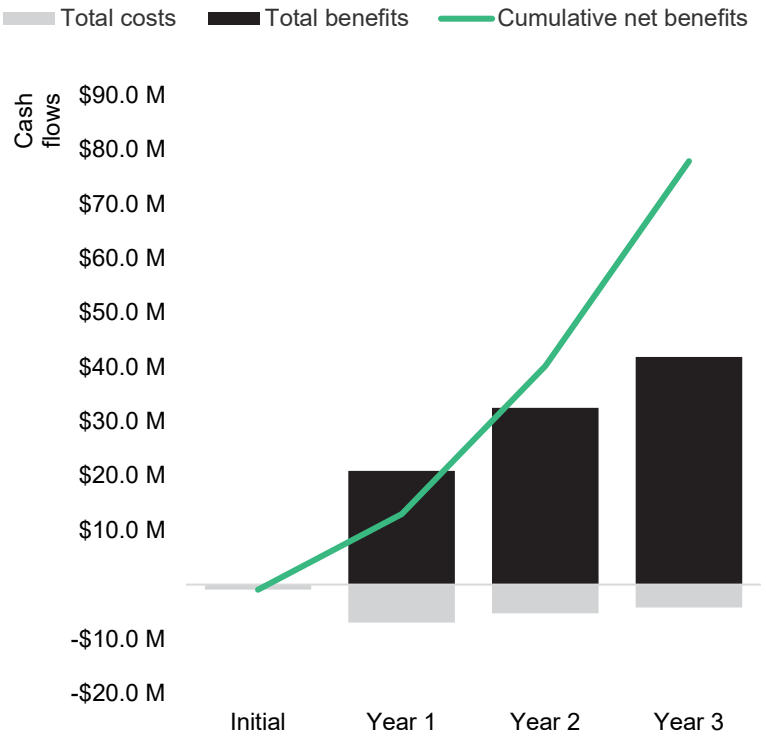
Training Fees

Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
K1	Number of IT FTEs (net new)	Interviews	8	2	1	1
K2	Hours of training per IT FTE	Interviews	125	125	125	125
K3	IT FTE hourly rate (fully burdened), rounded	Composite	$58	$58	$58	$58
K4	Subtotal: Training fees, IT	K1*K2*K3	$58,000	$14,500	$7,250	$7,250
K5	Number of data analysts (net new)	Interviews	2	0	0	0
K6	Hours of training per data analyst	Interviews	20	0	0	0
K7	Data analyst hourly rate (fully burdened), rounded	Composite	$31	$31	$31	$31
K8	Subtotal: Training fees, data analyst	K5*K6*K7	$1,240	$0	$0	$0
K9	Number of end users (net new)	Interviews	0	3,000	1,400	600
K10	Hours of training per business user	Interviews	4	4	4	4
K11	End user hourly rate (fully burdened)	Composite	$31	$31	$31	$31
K12	Subtotal: Training fees, business user	K9*K10*K11	$0	$372,000	$173,600	$74,400
Kt	Training fees	K4+K8+K12	$59,240	$386,500	$180,850	$81,650
	Risk adjustment	↑10%				
Ktr	Training fees (risk-adjusted)		$65,164	$425,150	$198,935	$89,815
	Three-year total: $779,064			**Three-year present value: $683,552**		

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

Cash Flow Chart (Risk-Adjusted)



The financial results calculated in the Benefits and Costs sections can be used to determine the ROI and NPV for the composite organization's investment. Forrester assumes a yearly discount rate of 10% for this analysis.

These risk-adjusted ROI and NPV values are determined by applying risk-adjustment factors to the unadjusted results in each Benefit and Cost section.

Cash Flow Analysis (Risk-Adjusted Estimates)

	Initial	Year 1	Year 2	Year 3	Total	Present Value
Total costs	($941,314)	($6,998,750)	($5,273,719)	($4,218,599)	($17,432,382)	($14,831,755)
Total benefits	$0	$20,935,395	$32,485,343	$41,866,105	$95,286,843	$77,334,191
Net benefits	($941,314)	$13,936,645	$27,211,624	$37,647,506	$77,854,461	$62,502,436
ROI						421%

Appendix A: Total Economic Impact

Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

TOTAL ECONOMIC IMPACT APPROACH

Benefits represent the value delivered to the business by the product. The TEI methodology places equal weight on the measure of benefits and the measure of costs, allowing for a full examination of the effect of the technology on the entire organization.

Costs consider all expenses necessary to deliver the proposed value, or benefits, of the product. The cost category within TEI captures incremental costs over the existing environment for ongoing costs associated with the solution.

Flexibility represents the strategic value that can be obtained for some future additional investment building on top of the initial investment already made. Having the ability to capture that benefit has a PV that can be estimated.

Risks measure the uncertainty of benefit and cost estimates given: 1) the likelihood that estimates will meet original projections and 2) the likelihood that estimates will be tracked over time. TEI risk factors are based on "triangular distribution."

The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1 that are not discounted. All other cash flows are discounted using the discount rate at the end of the year. PV calculations are calculated for each total cost and benefit estimate. NPV calculations in the summary tables are the sum of the initial investment and the discounted cash flows in each year. Sums and present value calculations of the Total Benefits, Total Costs, and Cash Flow tables may not exactly add up, as some rounding may occur.

PRESENT VALUE (PV)

The present or current value of (discounted) cost and benefit estimates given at an interest rate (the discount rate). The PV of costs and benefits feed into the total NPV of cash flows.

NET PRESENT VALUE (NPV)

The present or current value of (discounted) future net cash flows given an interest rate (the discount rate). A positive project NPV normally indicates that the investment should be made, unless other projects have higher NPVs.

RETURN ON INVESTMENT (ROI)

A project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits less costs) by costs.

DISCOUNT RATE

The interest rate used in cash flow analysis to take into account the time value of money. Organizations typically use discount rates between 8% and 16%.

PAYBACK PERIOD

The breakeven point for an investment. This is the point in time at which net benefits (benefits minus costs) equal initial investment or cost.

Appendix B: Interview And Survey Demographics

Interviewed Decision-Makers

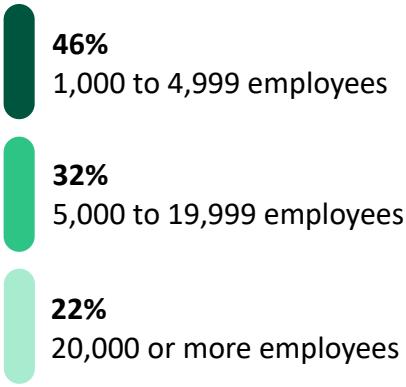
Industry	Region	Interviewees	Organization characteristics
Software	North America headquarters, global operations	Technical program manager	Revenue: $180 billion Employees: 140,000
	Pega Platform capabilities in use: low code, case management, rules/decisioning, DPA, RPA Deployment: Private cloud Solution description: Process workflow automation within IT End users: 15,000		
Financial services	Europe headquarters, global operations	Head of workforce planning and operational insights	Revenue: $120 billion Employees: 120,000
	Pega Platform capabilities in use: task mining Deployment: Pega Cloud Solution description: Process optimization identification within customer service End users: 400		
Healthcare	North America operations	Lead system architect	Revenue: $100 billion Employees: 30,000
	Pega Platform capabilities in use: Case management, rules/decisioning, RPA Deployment: On-premises Solution description: Process workflow automation within operations End users: 10,000		
Financial services	Europe headquarters, global operations	Central product owner	Revenue: $20 billion Employees: 55,000
	Pega Platform capabilities in use: DPA Deployment: Private cloud Solution description: Process workflow automation within operations End users: 2,500		
Financial services	APAC operations	- Business partner - Operations program manager - Automation manager * - Head of automation**	Revenue: $10 billion Employees: 35,000
	Pega Platform capabilities in use: low code, case management, rules/decisioning, RPA Deployment: Hosted cloud Solution description: Process workflow automation across both business and operations End users: 10,000		

*This study leverages data from a customer interview conducted for "The Total Economic Impact™ Of Pega Platform," commissioned by Pega, March 2020.

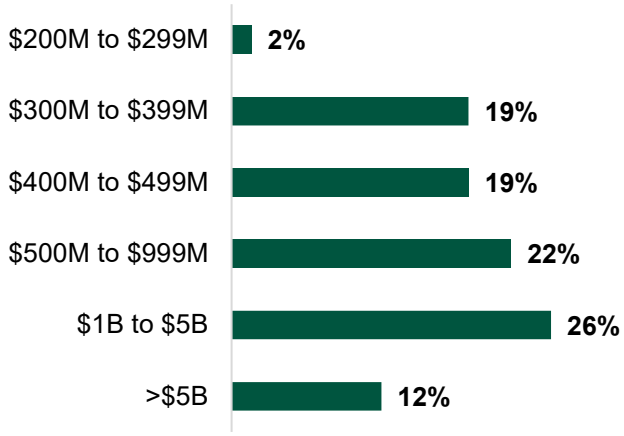
** This study leverages data from a customer interview conducted for "The Total Economic Impact™ Of Pega' Hybrid RPA Approach," commissioned by Pega, February 2020.

Survey Demographics

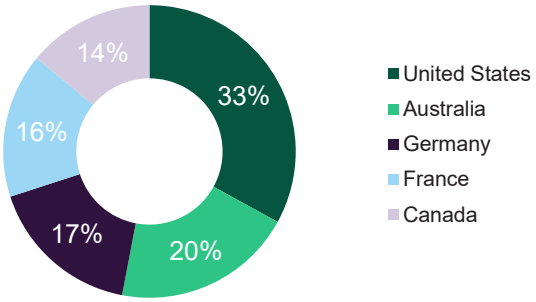
"Using your best estimate, how many employees work for your firm/organization worldwide?"



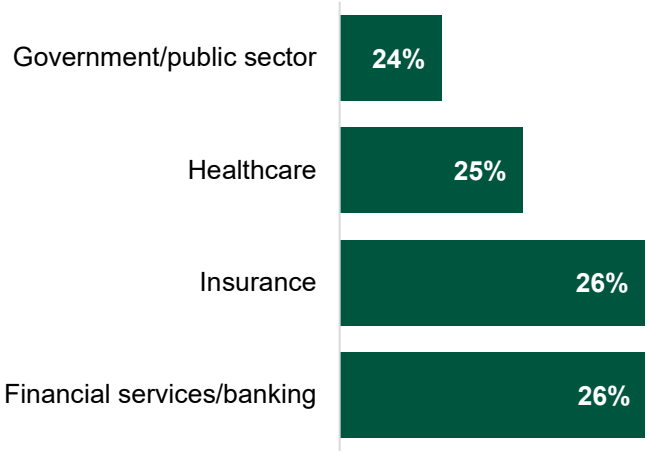
"Using your best estimate, what is your organization's annual revenue (USD)?"



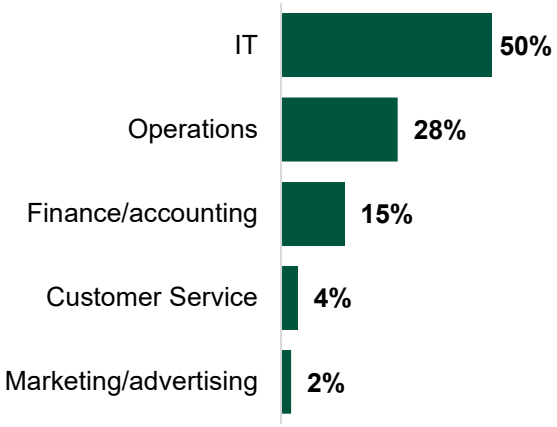
"In which country are you located?"



"Which of the following best describes the industry to which your company belongs?"



"Which department do you work in at your organization?"



More than half of the survey respondents' organizations have been using Pega Platform for **more than one year**.

Base: 125 decision-makers responsible for automation and robotics for their organization
Source: A commissioned study conducted by Forrester Consulting on behalf of Pega, January 2022

Appendix C: Supplemental Information

Related Forrester Research

"Implement Effective Customer Service Metrics," Forrester Research, Inc., January 15, 2021

"The Total Economic Impact™ Of Pega Customer Service," a commissioned study conducted by Forrester Consulting on behalf of Pega, June 2020

Appendix D: Endnotes

[1] Source: "Advance Process Automation By Keeping Automation Technologies In Their Own Lanes," Forrester Research, Inc., November 11, 2019.

[2] Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

[3] Source: "The Three Customer Service Megatrends In 2021: Post-Pandemic Customer Service Excellence," Forrester Research, Inc., January 25, 2021.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