The Total Economic Impact™ Of Pega Customer Decision Hub

Revenue And Retention Benefits Enabled By Pegasystems

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Project Director:
Julia Fadzeyeva

Project Contributor:
Sanitra Desai

ABOUT FORRESTER CONSULTING

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Executive Summary

Modern B2C marketers must elevate customer experience (CX) to the level of customer obsession because today's empowered customers expect personalized, seamless experiences, regardless of channel.[1] Forward-looking organizations look to orchestrate contextually relevant CX, address customer expectations for mutual value exchanges with their brand, and align marketing with all of their firms' customer-facing functions.[2]

Pegasystems provides CX automation and digital decisioning that help its customers deliver personalized and relevant messaging and customer interactions wherever their customers are. Pegasystems 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 Customer Decision Hub (CDH). The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Pega CDH for their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed four customers with up to 5 years of experience using Pega CDH.

Prior to using Customer Decision Hub, the interviewed organizations saw general customer fatigue from marketing messages, which resulted in lower offer acceptance rates. Companies struggled to develop and deliver a unified marketing strategy because marketing teams operated in channel siloes and did not have a central platform to inform their decisioning.

With the investment in Pega CDH, organizations gained the ability to deliver the right experiences to their customers across channels at the right time, which resulted in higher acceptance rates and revenue growth. At the same time, Pega provides agents with relevant conversations to have with customers, improves agent experience, and strengthens customer relationship with the brand.

Key Findings

Quantified benefits. The following risk-adjusted present value (PV) quantified benefits are representative of those experienced by the companies interviewed across the period of 3 years:

› **Customer-centric marketing approach leads to a $70.8 million increase in profit.** Pega CDH provides a comprehensive view into a customer's needs and behaviors, empowering organizations to act proactively and take the next best experience approach. This leads to increased offer presentation rates, improved conversion rates, and augmented product penetration across multiple channels, resulting in an incremental revenue growth of **$677 million over the course of three years**.

› **Increased visibility into customer intentions reduces churn rate and helps avoid $107 million in profit loss.** The Pega CDH platform presents a robust depiction of a customer's journey, giving agents the information they need to retain customers and improve customer share of wallet. The value associated with customer retention amounts to over **$578 million in three years in retained revenue.**

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ROI
489%

Benefits PV
$180 million

NPV
$150 million

Payback
<6 months

› **Avoided costs of legacy marketing tools saves $2.5 million.** Pega CDH offers a unified platform across all channels, eliminating the need for licenses for various channel-focused marketing tools. A single omnichannel platform delivered by Pega enabled organizations to retire the former software tools.

Unquantified benefits. The interviewed organizations experienced the following benefits, which are not quantified for this study:
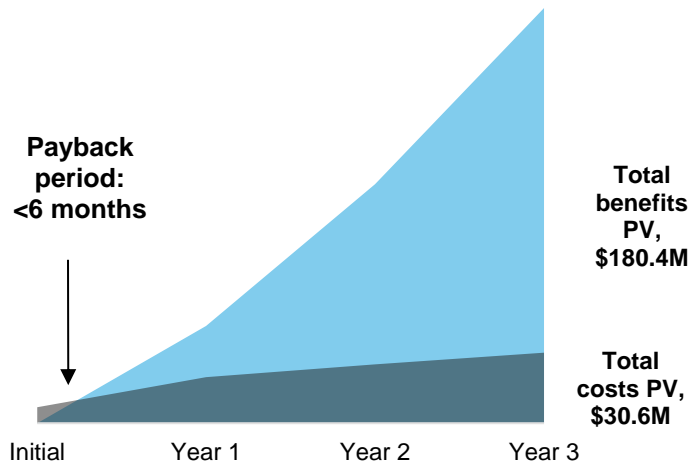
› **Improved customer experience.** Real-time access to customer background and interaction data, targeted offers, and relevant next best action recommendations ensure a more satisfactory interaction between customers and brand.

› **Empowered agents to provide relevant support.** Increased access to relevant customer information steered agent-customer interactions toward more helpful and personal outcomes.

› **Drove marketing groups to develop a single strategy.** Access to a single, robust omnichannel platform assists organizations in streamlining their marketing efforts and aligning marketing personnel to a unified vision.

Costs. The interviewed organizations experienced the following risk-adjusted PV costs:

› **Pega license costs of $6.1 million over three years.** Forrester builds this financial model around an organization with 10 million customers and 5 million prospects. Pega prices the annual recurring license fees of the CDH platform based on the type and number of engagement channels supported by Pega, as well as the number of customers and prospects.

› **Implementation cost of $17.7 million over three years.** The associated cost to implement Pega CDH is inclusive of the initial professional services partner fee, the cost of 100 dedicated IT and business side FTEs, and change management and training.

› **Ongoing management cost of $6.8 million over three years.** Interviewees dedicated resources to testing, project management, offer configuration, testing, development, and tool enhancements.

Forrester's interviews with four existing customers and subsequent financial analysis found that an organization based on these interviewed organizations experienced benefits of $180 million over three years versus costs of $31 million, adding up to a net present value (NPV) of nearly $150 million and an ROI of 489%.

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Financial Summary

Benefits (Three-Year)
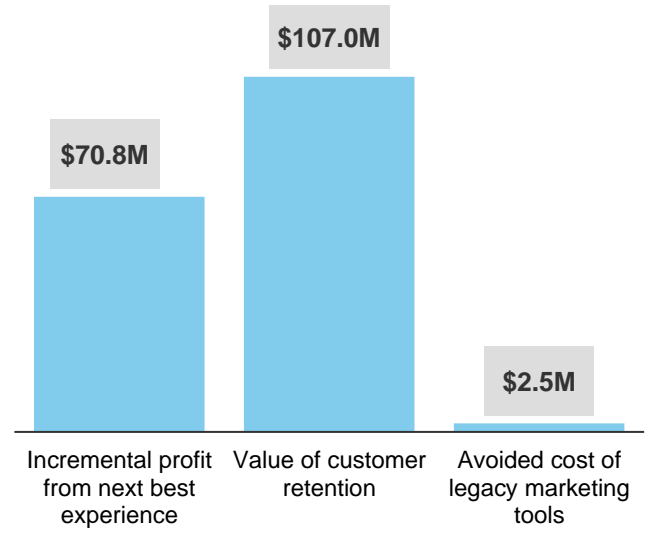
Payback
period:
<6 months

Total
benefits
PV,
$180.4M

Total
costs PV,
$30.6M

Initial   Year 1   Year 2   Year 3

$107.0M

$70.8M

$2.5M

Incremental profit
from next best
experience

Value of customer
retention

Avoided cost of
legacy marketing
tools

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TEI Framework And Methodology

From the information provided in the interviews, Forrester has constructed a Total Economic Impact™ (TEI) framework for those organizations considering implementing Pega Customer Decision Hub.

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 Pega Customer Decision Hub can have on an organization:

DUE DILIGENCE
Interviewed Pega stakeholders and Forrester analysts to gather data relative to Customer Decision Hub.

CUSTOMER INTERVIEWS
Interviewed four organizations using Customer Decision Hub to obtain data with respect to costs, benefits, and risks.

COMPOSITE ORGANIZATION
Designed a composite organization based on characteristics of the interviewed organizations.

FINANCIAL MODEL FRAMEWORK
Constructed a financial model representative of the interviews using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the interviewed organizations.

CASE STUDY
Employed four fundamental elements of TEI in modeling Pega Customer Decision Hub's impact: benefits, costs, flexibility, and risks. Given the increasing sophistication that enterprises have regarding ROI analyses related to IT investments, Forrester's TEI methodology serves to provide a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

> The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

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The Pega Customer Decision Hub Customer Journey

BEFORE AND AFTER THE CUSTOMER DECISION HUB INVESTMENT

Interviewed Organizations

For this study, Forrester conducted four interviews with Pega Customer Decision Hub customers. Interviewed customers include the following:

INDUSTRY	REGION	INTERVIEWEE	NUMBER OF CUSTOMERS
Financial services	Headquartered in Asia Pacific	Chief analytics officer	16 million customers
Telecommunications	Headquartered in Europe	Head of marketing technology strategy	125+ million customers
Insurance	Headquartered in Europe	Head of omnichannel personalization	10 million customers
Financial services	Headquartered in Europe	Head of customer decisioning	17 million customers

Key Challenges

The following key drivers prompted interviewed organizations to seek out a new approach to serving their customers:

› **Decline in marketing programs' acceptance rates.** Organizations saw a decline in customer engagement, and growth in customer fatigue, from marketing messages which were not personally relevant. Marketers were under pressure by competition to deliver offers which were tailored and personalized to the customer, ensuring the delivery of a better customer experience.

› **Siloed marketing efforts.** Interviewed companies used multiple marketing tools run by siloed channel teams, which resulted in inconsistent messaging and subpar customer experience. The head of marketing technology strategy at a telecom company stated, "Because we had one set of tools in outbound and one set of tools in inbound, the guy who answers the phone in the contact center wouldn't have known that we potentially sent an email with a conflicting message to the customer 30 minutes earlier."

› **Underused customer data.** While organizations collected customer data within channels, there was no central data hub where the information would be automatically processed and used to inform customer interactions in real time. This led to missed business opportunities.

Solution Requirements

The interviewed organizations searched for a solution that could:

› Help organizations deliver relevant and consistent messaging to their customers regardless of the channel.

› Enable agents to orchestrate informed customer interactions and deliver the best support at any moment.

> "We wanted to move away from campaign-based marketing to messaging what's right for that customer at that particular time."
>
> *Head of customer decisioning, financial services*

> "If we wanted to achieve the most personal and relevant customer engagement, we needed a central place where we could connect our customer data from multiple channels. Otherwise, we would never have consistent omnichannel customer interactions."
>
> *Head of omnichannel personalization, insurance*

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› Bring the information from disjointed customer engagement systems together to create a unified view of the customer to inform decisions.

After an extensive request for proposal evaluating multiple vendors, interviewed organizations chose Pega CDH and began deployment.

Key Results

The interviews revealed that key results from the Pega Customer Decision Hub investment include:

› **Customer-centric approach to engagement improves business outcomes.** The ability to predict the next best customer experience enabled interviewed organizations to move away from the product-driven marketing approach and more toward one focused on customer centricity, driving improvement in Net Promoter Score (NPS) and incremental revenue.[3] The head of marketing technology strategy at a telecom company stated, "Pega CDH forces us to be customer-centric and lets the customers' likes, dislikes, needs, and preferences drive our decisions."

› **Single view of all customer interactions makes the data actionable.** Pega CDH helps interviewed organizations achieve a better understanding of their customers, their journey(s), and all of their interactions with the brand, regardless of where it happens. This knowledge and Pega's predictive capabilities helps interviewed companies improve customer experience, reduce customer churn, and grow their share of wallet with existing customers.

› **Pega enables continuous improvement and innovation.** The marketing and decisioning teams within interviewed companies rely on Pega's built-in testing programs to continuously evaluate current strategies and test new approaches. The capabilities within Pega also facilitate the creation of advanced analytics models. The chief analytics officer for a financial services company explained, "We've built well over 200 machine learning models that are running in real time on top of billions of data points, continuously monitoring and optimizing what conversations to have with our customers across the channels."

Composite Organization

Based on the interviews, Forrester constructed a TEI framework, a composite company, and an associated ROI analysis that illustrates the areas financially affected. The composite organization is representative of the four companies that Forrester interviewed and is used to present the aggregate financial analysis in the next section. The composite organization that Forrester synthesized from the customer interviews has the following characteristics:

"We see Pega as a single brain and single platform integrated into all of our customer channels or customer touchpoints, so that when a customer walks into that channel, it triggers a personalized conversation or personalized recommendation."

Head of customer decisioning, financial services

"We use the Pega technology to rapidly build and deploy machine learning models. We use it for all of our rules and logic to decide what to talk to customers about."

Chief analytics officer, financial services

"We created a clear vision of what we want with our customer engagement, and what we want customer interactions to look like. We are focusing on creating an always-on personalization platform."

Head of omnichannel personalization, insurance

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Description of composite. The composite company is a global, multibillion dollar business-to-consumer organization. The organization has a strong brand, global operations, a large customer base of about 10 million customers, and a strong online and offline presence. The organization aims to develop strong customer relationships over time and is focused on getting a higher share of wallet with existing customers.

How the composite organization uses Pega CDH. The organization conducted a comprehensive vendor selection process that resulted in it choosing Pega. In Year 1, the organization deployed Pega CDH in its agent-assisted channels, including its retail branch locations and call center. By Year 2, the organization deployed the tool to a variety of online channels, such as web and kiosks. In Year 3, the company expanded the use of Pega to outbound channels, including email, direct mail, SMS/MMS, and outbound calls.

Key assumptions:
- 10 million customers
- $25 billion revenue
- 3,000 representatives
- 15% operating margin
- $200 customer acquisition cost

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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	Incremental profit from next best experience	$23,906,250	$29,261,250	$33,162,750	$86,330,250	$70,831,471
Btr	Value of customer retention	$21,656,250	$44,178,750	$67,593,488	$133,428,488	$106,982,851
Ctr	Avoided cost of legacy marketing tools	$877,500	$1,053,000	$1,170,000	$3,100,500	$2,547,014
	Total benefits (risk-adjusted)	$46,440,000	$74,493,000	$101,926,238	$222,859,238	$180,361,336

Incremental Profit From Next Best Experience

All interviewed companies use Pega CDH to take the next best experience approach when engaging with their customers, which results in incremental revenue from the existing customer base. Prior to using Pega CDH, companies relied heavily on customer segmentation and campaign-driven marketing efforts. Pega enables marketing and CX teams to shift from messaging customer segments to marketing to individual customers. Pega's AI and predictive capabilities gives interviewed organizations insights into what is the next best experience for each customer at any given time, including anticipating their need for new products, helping resolve issues, or proactively providing guidance. The head of customer decisioning at a financial services organization explained, "Because we're offering the right thing at the right time, and it's more relevant; we are seeing much higher product sales rates than we ever did before."

› As a result of implementing Pega CDH, a telecom company saw a 15% increase in revenue directly attributed to marketing initiatives. Among the changes that contributed to higher revenue was a 40% to 50% improvement in offer presentation rates within the agent-assisted channels. A head of marketing technology strategy stated: "Earlier, agents just ignored the offers rather than have an awkward and irrelevant conversation with a customer. But today, this is no longer the case, and our presentation rates have markedly improved."

› An insurance company experienced an increase in their conversion rates and saw sales uplift in the online channel of up to 27% due to personalized recommendations provided by Pega to existing customers.

› Across all new products, a financial services organization in Europe saw up to a 40% uplift in sales attributed to Pega. The head of customer decisioning said: "One of the things that we've always been trying to do is to increase the share of wallet with our current customers. And with Pega, the growth that we've seen is within our existing customer base because we have been able to meet more of their needs. Since we implemented Pega, we're seeing greater product penetration."

The table above shows the total of all benefits across the areas listed below, as well as present values (PVs) discounted at 10%. Over three years, the composite organization expects risk-adjusted total benefits to be a PV of more than $180 million.

$70.8 million

three-year benefit PV
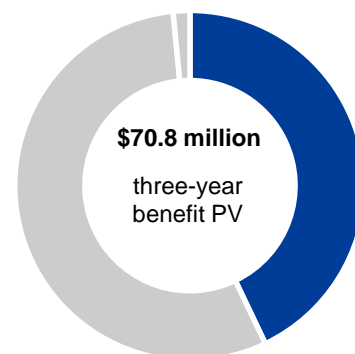
Incremental profit from next best experience: 39% of total benefits

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> › Another financial services organization used Pega to send better leads to the frontline agents for one line of its business. The chief analytics officer explained: "Engagement and buying from the frontline were unbelievable. The leads to drive key customer service moments were significantly better than every lead that we had sent before: well over 90% of the leads that we were sending were getting actioned on. This helped us a lot with performance in this line of business."

For the composite organization, Forrester assumes:

> › Using Pega results in several business outcomes, including increased offer presentation rates and conversion rates across multiple channels, leading to incremental growth in revenue.

> › Pega CDH is used in its agent-assisted channels in Year 1; expanding to digital in Year 2 and then to outbound channels in Year 3.

> › The increase in annual company revenue, attributed to Pega, amounts to 0.75% in Year 1, 0.90% in Year 2, and 1.00% in Year 3.

> › Operating margin is 15%.

The following factors may impact other organizations' realization of this benefit category:

> › The speed of Pega CDH implementation and the extent to which the CDH capabilities are leveraged across marketing channels.

> › Pega adoption by the marketing and CX team and willingness to optimize strategies and messaging.

> › Adoption ramp for customer service agents.

To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of $70.8 million.

> Impact risk is the risk that the business or technology needs of the organization may not be met by the investment, resulting in lower overall total benefits. The greater the uncertainty, the wider the potential range of outcomes for benefit estimates.

Incremental Profit From Next Best Experience: Calculation Table

REF.	METRIC	CALC.	YEAR 1	YEAR 2	YEAR 3
A1	Organization's annual revenue	Includes 2% YoY growth	$25,000,000,000	$25,500,000,000	$26,010,000,000
A2	Revenue increase from higher presentation and conversion rates enabled by Pega		0.75%	0.90%	1.00%
A3	Incremental revenue attributable to Pega CDH	A1*A2	$187,500,000	$229,500,000	$260,100,000
A4	Operating margin		15%	15%	15%
At	Incremental profit from next best experience	A3*A4	$28,125,000	$34,425,000	$39,015,000
	Risk adjustment	↓15%			
Atr	Incremental profit from next best experience (risk-adjusted)		$23,906,250	$29,261,250	$33,162,750

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Value Of Customer Retention

Each interviewed organization looks to improve customer lifetime value and grow its share of customers' wallet. To achieve those goals, companies need to reduce customer churn and provide reasons for customers to stay with these organizations. Prior to using Pega CDH, organizations had no visibility into customer intentions to terminate the relationship until they received a request to cancel service or close an account. A customer service agent who interacts with a customer at this particular moment of termination also had no way of knowing which offer could make them with the organization. Pega provides the intelligence to preemptively identify customers who are either at risk for possible churn or may be on their path to churning. Pega also provides the next best experience that could help retain them, such as providing additional customer service, resolving technical difficulties, or making a more compelling product offer.

$107.0 million

three-year
benefit PV

Value of customer retention: 59% of total benefits

› A telecom company relies on Pega to construct a granular approach to engage with customers, as stated by the head of market technology strategy: "If we have ten different propositions that are appropriate for the customer who is likely to churn, Pega helps identify which proposition is the best to present, and which is the best channel to use for this proposition."

› An insurance company uses Pega to identify customers who start a policy cancellation process and provides them with an offer recommended by Pega CDH. As a result, the organization reduces churn rate by 35% on channels where Pega CDH is implemented.

For the composite organization, Forrester assumes that:

› Prior to Pega, the organization reports a 10% churn rate.

› In the Year 1 of using Pega CDH, the organization reduces churn by 5%. As the company expands Pega implementation from agent-assisted channels to online and outbound, churn rate decreases by 10% and 15% in Year 2 and Year 3, respectively.

› The average cost of acquiring a new customer is $200.

› The average annual revenue per customer is $1,875.

The value of customer retention will vary with:

› Previous churn rate and cost to acquire new customers.

› Organizations' commitment to using Pega to identify churn factors and take preemptive actions to retain customers.

› Pega adoption by the marketing team and customer service organization.

To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of $107 million.

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Value Of Customer Retention: Calculation Table

REF.	METRIC	CALC.	YEAR 1	YEAR 2	YEAR 3
B1	Number of customers	Includes 2% YoY growth	10,000,000	10,200,000	10,404,000
B2	Average churn rate		10%	10%	10%
B3	Reduction in churn rate with Pega Marketing		5%	10%	15%
B4	Number of customers retained each year with Pega	B1*B2*B3	50,000	102,000	156,060
B5	Average cost of acquiring a new customer		$200	$200	$200
B6	Cost of replacing churned customers	B4*B5	$10,000,000	$20,400,000	$31,212,000
B7	Organization's annual revenue	A1	$25,000,000,000	$25,500,000,000	$26,010,000,000
B8	Percent of annual revenue attributed to customer business		75%	75%	75%
B9	Average annual revenue per customer	B7*B8/B1	$1,875	$1,875	$1,875
B10	Revenue loss avoided with Pega CDH	B9*B4	$93,750,000	$191,250,000	$292,612,500
B11	Operating margin		15%	15%	15%
Bt	Value of customer retention	B6+B10*B11	$24,062,500	$49,087,500	$75,103,875
	Risk adjustment	↓10%			
Btr	Value of customer retention (risk-adjusted)		$21,656,250	$44,178,750	$67,593,488

Avoided Cost Of Legacy Marketing Tools

Prior to Pega CDH, several interviewed organizations used tools that were offered by other vendors for their inbound, outbound, and agent-assisted channel needs for data, analytics, and workflow. While these software products offered some personalization capabilities, they remained isolated within their respective channels and did not provide a single view of the customer. Once the organizations implemented Pega, they retired their former solutions and avoided license fees. The head of customer decisioning at a financial services company explained, "When we moved to Pega, it became a unified platform for inbound and outbound [channels] and enabled the next-best, real-time interaction management across the whole state."

Based on the customer interviews, Forrester estimates:

› As the composite organization gradually expands its Pega CDH implementation, it reduced the number of former marketing tools used across its channels.

› The organization replaces 75% of the former software in Year 1, 90% in Year 2, and completely eliminates former tools in Year 3.

Reduced total cost of ownership can vary based on:

› An organization's annual marketing tool budget.

› The volume and type of marketing channels supported or managed by the team prior to Pega CDH.

$2.5 million

three-year benefit PV
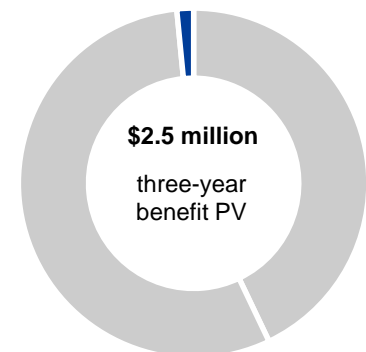
Avoided cost of legacy marketing tools: 2% of total benefits

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› The speed of Pega deployment.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of $2.5 million.

Avoided Cost Of Legacy Marketing Tools: Calculation Table					
REF.	METRIC	CALC.	YEAR 1	YEAR 2	YEAR 3
C1	Avoided cost of legacy marketing tools		975,000	1,170,000	1,300,000
Ct	Avoided cost of legacy marketing tools	C1	$975,000	$1,170,000	$1,300,000
	Risk adjustment	↓10%			
Ctr	Avoided cost of legacy marketing tools (risk-adjusted)		$877,500	$1,053,000	$1,170,000

Unquantified Benefits

Customers discussed the following benefits of Pega CDH. However, these benefits were not quantified as part of the analysis.

› **Improved customer experience.** All interviewed organizations mentioned less than ideal customer experiences prior to Pega, including: 1) customers receiving conflicting messages across channels; 2) a lack of background knowledge and continuity in customer interactions with agents; and 3) untimely new product offers organization, i.e., while a customer is in the middle of an unresolved issue. As the head of marketing technology strategy at a telecom company told Forrester: "That doesn't happen anymore because we are delivering meaningful experiences to our customers these days. With Pega, the decisions that we're making about next best actions focus on what is more relevant, and therefore delivers better value to the customer."

› **Empowered agents to provide relevant support.** For years, the agents in the interviewed organizations felt that the offers they were supposed to make during their customer interactions were out of place in the context of their conversation and chose not to mention them. With Pega CDH, agents received a powerful tool that not only provided them with a customer's background and previous experiences, but on that also recommended the best conversation to have. The head of omnichannel personalization at an insurance company explained: "Now the context of the conversation that the agents are having with a customer matters, and that means that the recommendations are much more relevant. It makes the agent experience much better."

› **Drove marketing groups to develop a single strategy.** The transition away from a plethora of disjointed marketing tools to a single omnichannel platform helped organizations break down channel siloes within the marketing organization and enabled KPI alignment. One of the interviewees told Forrester, "We are trying to get all the marketing processes connected to the central hub and bring the marketers together, away from completing the work in decentralized siloes."

"Both in the branch locations and in the call center, we want to give our agents something to talk to [the] customer about, beyond product offers, which then allows us to understand what's important to the customer and what are the different things that we can help with."

Head of customer decisioning, financial services

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Flexibility

The value of flexibility is clearly unique to each customer, and the measure of its value varies from organization to organization. There are multiple scenarios in which a customer might choose to implement Pega CDH and later realize additional uses and business opportunities, including:

› **Using intelligence provided by Pega for proactive customer relationship management.** Organizations are looking to make better use of the real-time customer journey data available through Pega to anticipate customers' needs, provide timely support, and prevent negative experiences, where possible.

› **New opportunities from migration to the cloud.** Interviewed organizations with an on-premises Pega implementation mentioned that they were considering migrating their Pega implementation to the cloud to enable faster version upgrades and new features available on the cloud.

› **Integrating additional channels.** While the organizations onboarded a variety of channels to the Pega platform, they still had opportunities for more personalization, particularly on their digital channels. Further website personalization, for example, could lead to additional customer retention and topline improvements.

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

> Flexibility, as defined by TEI, represents an investment in additional capacity or capability that could be turned into business benefit for a future additional investment. This provides an organization with the "right" or the ability to engage in future initiatives but not the obligation to do so.

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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
Dtr	Pega CDH license costs	$0	$1,900,000	$2,500,000	$3,100,000	$7,500,000	$6,122,464
Etr	Implementation cost	$5,913,380	$8,913,960	$2,415,160	$2,195,160	$19,437,660	$17,662,236
Ftr	Ongoing work	$0	$2,750,000	$2,750,000	$2,750,000	$8,250,000	$6,838,843
	Total costs (risk-adjusted)	$5,913,380	$13,563,960	$7,665,160	$8,045,160	$35,187,660	$30,623,543

Pega CDH License Costs

The composite organization incurred software fees for Pega CDH. These are annual recurring license fees that are based on the type and number of marketing channels supported by Pega and the number of customers and prospects.

The organization starts the implementation in its agent-assisted channels in Year 1, expanding to digital in Year 2, and then adding outbound channels in Year 3.

Pega provided accurate estimates for Pega CDH fees, so Forrester did not adjust these fees for risk. Over three years, the total PV cost was $6.1 million.

For more information regarding pricing specific for your organization and use case, please contact your Pega representative.

> The table above shows the total of all costs across the areas listed below, as well as present values (PVs) discounted at 10%. Over three years, the composite organization expects risk-adjusted total costs to be a PV of nearly $31 million.

REF.	METRIC	CALC.	INITIAL	YEAR 1	YEAR 2	YEAR 3
D1	Fees to Pega			$1,900,000	$2,500,000	$3,100,000
Dt	Pega CDH license costs	D1	$0	$1,900,000	$2,500,000	$3,100,000
	Risk adjustment	0%				
Dtr	Pega CDH license costs (risk-adjusted)		$0	$1,900,000	$2,500,000	$3,100,000

Pega CDH License: Calculation Table

Implementation Cost

Interviewed organizations described Pega CDH implementation as a gradual process that required:

› Involvement from a significant number of FTEs, primarily from IT and marketing organizations, to outline the transition plan, run integrations with multiple channels, and develop and implement new marketing strategies.

› Partnering with professional services that were heavily involved during the implementation process to help organizations with platform design, initial integrations, best practices, and training on the Pega platform.

> Implementation risk is the risk that a proposed investment may deviate from the original or expected requirements, resulting in higher costs than anticipated. The greater the uncertainty, the wider the potential range of outcomes for cost estimates.

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› A significant investment in training to encourage adoption of the platform and change management to prepare the marketing team to best support the new approach to customer interactions.

The implementation period of each interviewee was unique and varied from six months to a year. For the composite organization, Forrester assumes that:

› The professional services partner charged a fee for both the initial implementation and then for onboarding new channels and process improvements.

› Sixty-five FTEs from both IT and the business side (marketing, customer relations, or operations) were involved for six months to provide the initial implementation in the agent-assisted channel. In Year 1, they were involved with developing proper functionality for the full year. And then in Years 2 and 3, these FTEs were involved with expanding the deployment to additional channels for a total of two months' time each year.

› The organization dedicated 20,000 hours to initial change management and Pega CDH training for the marketing and IT organizations.

› Prior to launch, 3,000 agents were trained on using Pega CDH for 3 hours, and in the following years each agent went through 0.5 hours of additional training per quarter.

The cost of implementation will vary based on:

› The complexity and scope of the transition from the former marketing solutions to Pega and the need for professional services.

› The number and salaries of FTEs dedicated to Pega CDH adoption.

To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of $17.7 million.

Six months
Total implementation and deployment time

REF.	METRIC	CALC.	INITIAL	YEAR 1	YEAR 2	YEAR 3
Implementation Cost: Calculation Table						
E1	Professional services/partner fees		$1,000,000	$1,500,000	$1,000,000	$800,000
E2	Hours required for planning and implementation		67,600	135,200	22,533	22,533
E3	Hours spent on initial training and change management		20,000			
E4	Average corporate/IT FTE fully loaded hourly compensation		$48	$48	$48	$48
E5	Hours spent training customer service/branch representatives		9,000	6,000	6,000	6,000
E6	Average customer service representative fully loaded hourly compensation		$19	$19	$19	$19
Et	Implementation cost	E1+(E2+E3)*E4+E5*E6	$5,375,800	$8,103,600	$2,195,600	$1,995,600
	Risk adjustment	↑10%				
Etr	Implementation cost (risk-adjusted)		$5,913,380	$8,913,960	$2,415,160	$2,195,160

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Ongoing Work

Following the initial implementation, interviewed organizations dedicated teams to work in Pega CDH full time. The size of the teams ranged from 20 FTEs to over a hundred — with the latter being for the interviewee with largest customer base.

For the composite organization, Forrester assumes that:

› A team of 25 FTEs, including IT and marketing/decisioning professionals, supports Pega CDH. These resources dedicate 100% of their time to testing, project management, offer configuration, development, and making enhancements to the tool.

› The average FTE annual burdened salary is $100,000.

The cost will vary based on:

› The composition organization's customer base and complexity of its marketing strategy and ecosystem.

› The composite organization's dedication to continuous improvement and innovation.

› Fully loaded salaries of IT and marketing/decisioning professionals.

To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of $6.8 million.

**25 FTEs** spend 100% of their time on ongoing management of Pega CDH.

REF.	METRIC	CALC.	INITIAL	YEAR 1	YEAR 2	YEAR 3
Ongoing Work: Calculation Table						
F1	Number of FTEs managing Pega CDH			25	25	25
F2	Average corporate/IT FTE fully loaded annual compensation			$100,000	$100,000	$100,000
Ft	Ongoing work	F1*F2		$2,500,000	$2,500,000	$2,500,000
	Risk adjustment	↑10%				
Ftr	Ongoing work (risk-adjusted)		$0	$2,750,000	$2,750,000	$2,750,000

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

Cash Flow Chart (Risk-Adjusted)

- Total costs
- Total benefits
- Cumulative net benefits
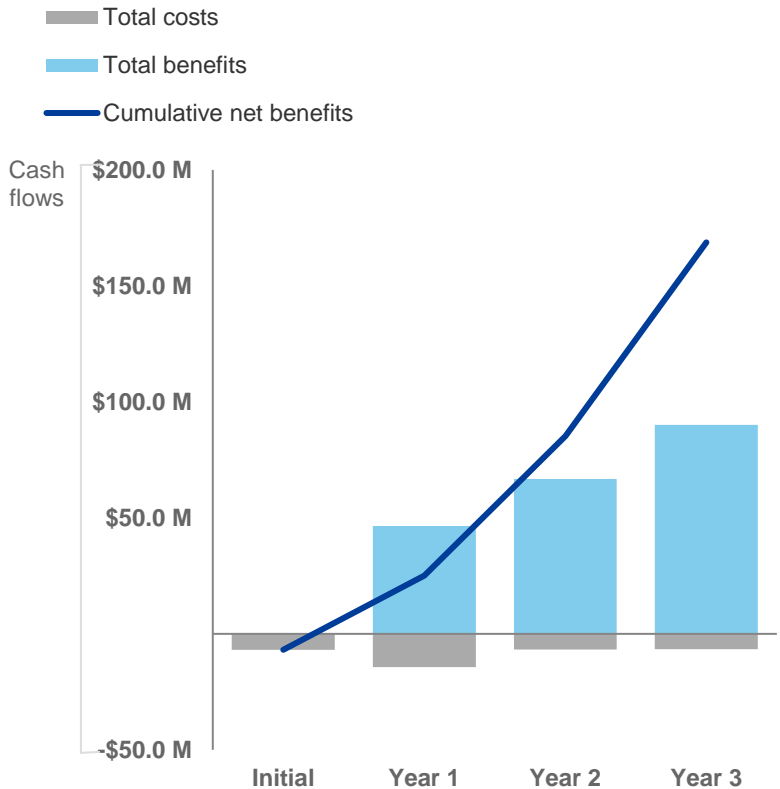
The financial results calculated in the Benefits and Costs sections can be used to determine the ROI, NPV, and payback period for the composite organization's investment. Forrester assumes a yearly discount rate of 10% for this analysis.

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

Cash Flow Table (Risk-Adjusted)

	INITIAL	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Total costs	($5,913,380)	($13,563,960)	($7,665,160)	($8,045,160)	($35,187,660)	($30,623,543)
Total benefits	$0	$46,440,000	$74,493,000	$101,926,238	$222,859,238	$180,361,336
Net benefits	($5,913,380)	$32,876,040	$66,827,840	$93,881,078	$187,671,578	$149,737,793
ROI						489%
Payback period						<6 months

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Pega Customer Decision Hub: Overview

The following information is provided by Pega. Forrester has not validated any claims and does not endorse Pega or its offerings.

The Pega Customer Decision Hub optimizes Customer Lifetime Value (CLV) by providing an "Always-On Brain" for each client's business — unifying an organization's data, analytics, and channels into a single connected experience.

That Customer Decision Hub delivers **Next Best Action** recommendations in real-time, whenever a customer or prospect interacts with your brand. When they touch one of your channels, that channel calls into Pega, which analyzes their context, then delivers a Next Best Action personalized uniquely for that individual.

The Customer Decision Hub features these key capabilities:

Component	Description
Adaptive Decision Manager	A machine-learning engine for testing and learning in real time.
Prediction Studio	A predictive-modeling factory for building and integrating models.
Visual Business Director	A simulation engine for monitoring & forecasting performance.
Text Analytics	A natural language processing (NLP) engine for integrating text data.
Event Strategy Manager	A complex events processor (CEP) for analyzing streaming data and detecting complex behavior patterns.
Next-Best-Action Designer	A strategy designer for build and deploy using best practices.
1:1 Operations Manager	A change management module for creating Next Best Action content.
Real-Time Containers	To integrate Next-Best-Actions into owned digital channels.
Always-On Outbound	To integrate Next-Best-Actions into outbound channels.
Next-Best-Action Advisor	To integrate Next-Best-Actions into agent-facing channels.
Paid Media Manager	To integrate Next-Best-Actions into paid advertising channels.
Retail Advisor	To integrate Next-Best-Actions into retail clientele experiences.

With the Customer Decision Hub, each customer interaction becomes more relevant, timely, and personal than ever before — providing you with performance lift that includes:

- Increased Response & Conversion Rates.
- Increased Net Promoter Scores (NPS).
- Increased Customer Retention & Reduced Churn Rates.
- Reduced Retention Discounts.
- Increased Revenue & Profit Levels.
- Increased Customer Lifetime Value

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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.

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Appendix B: Supplemental Material

Related Forrester Research

"The Model For Modern Marketing," Forrester Research, Inc., March 8, 2019.

"The Forrester Wave™: Cross-Channel Campaign Management (Independent Platforms), Q4 2019," Forrester Research, Inc., November 19, 2019.

"The Forrester Wave™: Real-Time Interaction Management, Q1 2019," Forrester Research, Inc., February 27, 2019.

Appendix C: Endnotes

[1] Source: "Now Tech: Real-Time Interaction Management, Q1 2019," Forrester Research, Inc., January 11, 2019.
[2] Ibid.
[3] Net Promoter and NPS are registered service marks, and Net Promoter Score is a service mark, of Bain & Company, Inc., Satmetrix Systems, Inc., and Fred Reichheld.

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