



EBOOK

# Personalization at Scale

How Orchestrated AI Delivers the  
Right Message at the Perfect Moment





## In today's competitive landscape, successful customer engagement requires more than traditional marketing tactics.

Modern consumers expect brands to know who they are, anticipate their needs, and deliver personalized experiences at the exact right moment.

In response, innovative approaches are emerging, harnessing AI-driven insights to transform customer interactions across industries. This eBook will explore how advanced AI technologies can empower organizations to meet these new demands in customer engagement.



# Evolving Customer Expectations and the Role of AI

Traditional marketing tools, which were mostly designed for scheduled campaigns and specific channels, often struggle to keep up with today's need for real-time, personalized customer engagement.

This opens both opportunities and challenges for businesses as they consider new technologies to meet these demands. In this crowded technology landscape, it's crucial to understand how different types of AI can be used effectively to create highly personalized customer experiences at scale.





# Two key AI technologies are shaping this transformation:



## STATISTICAL AI

Statistical AI helps companies forecast customer needs based on historical behaviors, enabling timely, contextually relevant responses.

The evolution of customer engagement technology has been transformative – moving from basic content targeting by broad segments, to more refined segments with predictive analytics, to fully automated predictive AI, and now to the powerful combination of predictive and generative capabilities.

While predictive AI forecasts specific outcomes like customer propensity to purchase, likelihood to churn, or expected lifetime value, generative AI creates personalized content based on these predictions.

This technological progression hasn't just improved customer experiences – it has dramatically reduced operational costs.

## GENERATIVE AI

Generative AI goes a step further, dynamically creating content or responses based on the real-time context of each customer interaction, which can make every customer feel personally understood. While Predictive AI identifies what customers are likely to need, Generative AI crafts how that need should be addressed through personalized messaging, offers, and conversations. This technology transforms customer engagement by enabling truly individualized experiences at scale – from tailored product recommendations and personalized marketing messages to context-aware service responses. Organizations implementing Generative AI report significant improvements in customer satisfaction and engagement metrics, with increases in conversion rates, customer retention, and average order values.

Beyond customer-facing benefits, Generative AI streamlines internal operations by automating content creation, providing agent assistance through suggested responses, and enabling more efficient knowledge distribution across customer service teams.

- **Large Language Models (LLMs) and generative AI are emerging as powerful tools for analyzing and responding to customer interactions. They can generate and summarize content, categorize data, and understand the context of conversations.**

These models interpret various forms of communication—like text or voice—to identify a customer’s intent, gauge sentiment, and even anticipate possible issues. They can also generate responses for customer service agents or directly to customers.

However, while these tools are promising, they currently face limitations in speed and cost when scaled to handle real-time interactions.

Predictive AI, on the other hand, excels at forecasting and testing the effectiveness of content.

It can predict which messages will resonate with a customer, using data analytics to test and refine these predictions in real-world interactions. This combination of understanding and predicting customer needs helps create a more personalized and effective engagement strategy.

With predictive and generative AI, businesses can anticipate what customers want and respond in a way that feels deeply personal. This shift moves companies away from traditional, one-size-fits-all approaches to a more adaptive, customer-centric model.

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The automation of predictive AI delivers a crucial but often overlooked benefit: systematic learning about what resonates with customers.

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When predictive models operate at scale, they continuously generate insights about which messages work, which don’t, and precisely why certain approaches succeed or fail with specific customer segments.

These validated insights become invaluable inputs for generative AI systems, essentially providing the guardrails and context that make generative outputs more relevant and effective.

This symbiotic relationship between predictive and generative AI underscores the need for a central decisioning authority. Without a unified orchestration layer, these powerful technologies operate in isolation, creating disconnected experiences.

A centralized decisioning ensures that predictive insights systematically inform generative outputs, while maintaining enterprise control over AI-driven interactions. This orchestrated approach not only enhances customer experience but also optimizes operational efficiency by eliminating redundant systems and consolidating AI governance.



# Centralizing Decision-Making for Consistent Engagement

In many organizations, systems, channels, teams, data, and decisions are siloed. The overall impact is that businesses lose agility, efficiency, and the ability to respond effectively to customer needs. The resulting fragmented customer experiences lead to over-messaging, brands delivering irrelevant communications and pushing their customers to churn.

Delivering successful business outcomes and exceptional customer experiences requires brands to quickly adapt to changing customer and market needs and to be able to do that on a large scale, across all communication channels. This is true across the entire customer journey and lifecycle with customers, not just marketing efforts, but also customer care and service interactions.





Achieving this, requires a centralized decision-making system that offers a single “source of truth” for all customer engagement decisions, ensuring that each touch is based on the most current and complete view of the customer.

Then, once a decision is made on the appropriate next-best-action for a given customer, delivering it seamlessly across channels—**whether through email, social media, mobile, or in-store—ensures that customers have a cohesive experience.**

This integrated approach not only strengthens brand trust but also drives customer loyalty and engagement by delivering consistency at every touchpoint.



Pega’s approach uniquely combines these capabilities with its proven predictive AI capabilities in our Customer Decision Hub (CDH). CDH blends generative AI capabilities and an **agentic AI vision** to hyper-personalize engagement.

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## AGENTIC AI

“Self-directing autonomous system that can make decisions and take actions independently to achieve specific goals without constant human input”

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By analyzing and applying advanced analytics to vast amounts of data brands can offer **highly tailored customer experiences, at scale to reach millions of customers.**

For example, enterprises use Pega Adaptive Models within CDH to automate thousands of predictive models – each representing individual customer likelihood to engage with particular content in a particular channel. Consider a customer reaching out to a company for support. In real-time, AI analyzes their past interactions, preferences, and even their current sentiment to deliver the most helpful response or recommend the best next steps. This approach doesn’t just resolve issues; it makes customers feel **understood and valued.**



Or what about changing market conditions? If a financial institution is using data from its digital mortgage calculator to identify when a customer is in market for a mortgage, they’ll likely consider market conditions like interest rate; customer data like income bracket or region; or other factors that would qualify a customer for a particular product. If an input unexpectedly changes, like a sudden increase in the interest rate, that affects the eligibility of a particular client to receive a particular offer.

While adaptive models can do just that – adapt – predictive models can only use historical data inputs to inform an interaction. Combined, however they empower businesses to **deliver more accurate, relevant, and empathetic experiences.**

# Meeting Compliance and Security Standards with Confidence

In addition to hyper-personalized experiences, customers now rightfully require that brands prioritize transparency in customer engagement, they want to know their data is protected.



Large companies using AI to enhance customer engagement, especially companies in highly regulated industries, must centralize key capabilities in order to be successful.

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## Operational Control

First, Operational Control ensures that all customer interactions are managed responsibly, with built in rules to meet legal standards, automated compliance checks, and complete audit trails to track actions.

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## Business Protection

Second, Business Protection helps protect the company's financial interests by setting real time financial limits, predicting revenue impacts, managing risks automatically, and ensuring fair treatment across all customer channels.

03

## Customer Focus

Finally, Customer Focus ensures that each customer experience is relevant and personalized. This includes verifying eligibility instantly, using AI to match customers with the right offerings, delivering one-to-one personalization on a large scale, and optimizing customer journeys in real-time.



# Intelligent Orchestration of LLM with Customer Decision Hub

Pega's Customer Decision Hub enables the aforementioned comprehensive enterprise capabilities by acting as a central decision engine that determines the "Next Best Action" for every customer, every time, across every channel.

It seamlessly integrates advanced AI technologies for natural language processing, provides automated tools for discovering new insights, and enables fast adoption of AI innovations.

With a strong focus on responsible AI, Pega CDH includes audit trails, compliance controls, brand voice protection, and performance monitoring, ensuring that AI is used safely and effectively.

Additionally, CDH delivers business value by speeding up time-to-market, reducing complexity, maximizing returns on AI investments, and supporting continuous innovation.

Unlike many solutions that address only specific tasks, Pega CDH is designed as a complete orchestration engine that connects with existing systems, bringing together all customer engagement efforts in a controlled and compliant way.

Pega's distinctive advantage lies in its ability to:



Blend predictive and generative AI in a controlled environment



Leverage LLMs for content generation and customer intent understanding

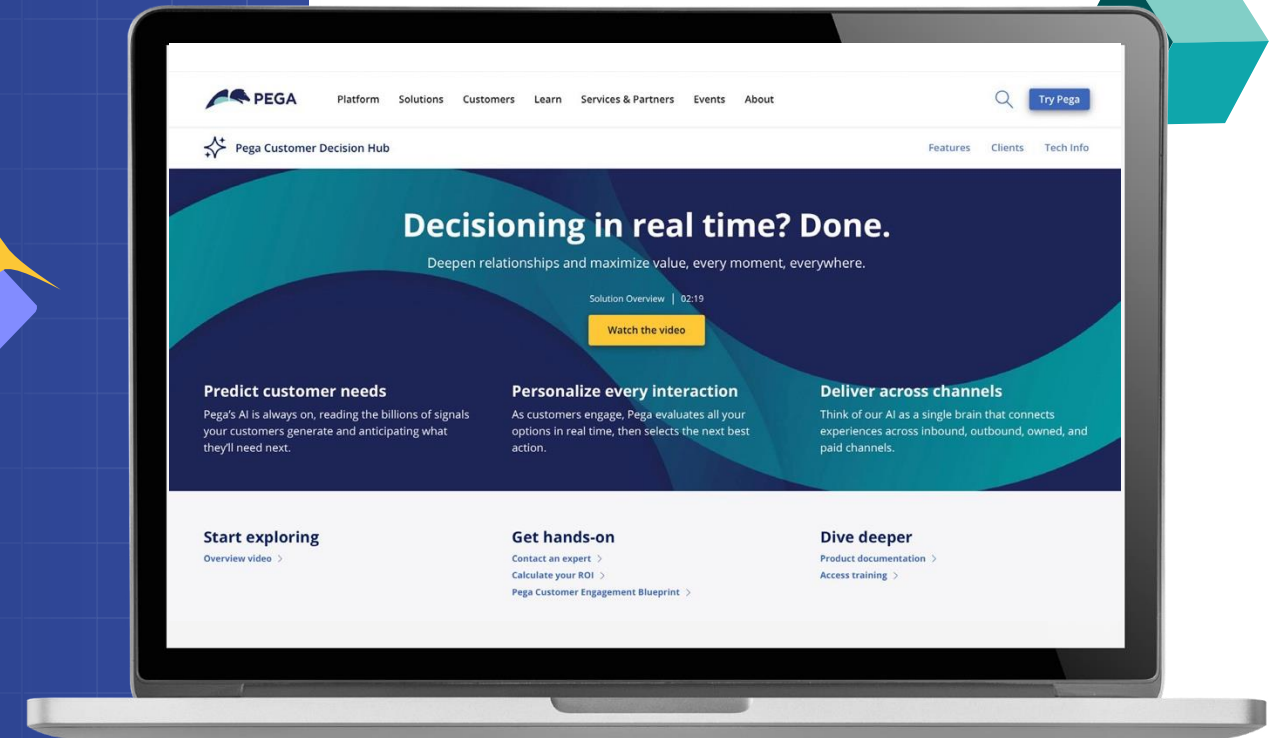


Use adaptive analytics for real-time testing and optimization



Maintain enterprise controls throughout the AI implementation

For organizations looking to adopt an AI-powered customer engagement model, the journey starts with assessing existing systems and identifying areas where intelligent decision-making and real-time personalization can add the most value.



Enterprise leaders wanting to take the next step should:

- **Assess** your organization's orchestration needs and explore how Pega CDH can enhance your existing systems and uncover opportunities for AI integration.
- Next, **plan** for integration by developing a clear roadmap, utilizing Pega's experience in enterprise deployments, and focusing on orchestration and control.
- Finally, **build** for the future by implementing Pega CDH as your central AI engine, harnessing both predictive and generative AI, and scaling confidently across your enterprise.



**The future of customer engagement lies in creating adaptive, intelligent interactions that meet customers' needs in real-time. As AI and customer engagement strategies continue to evolve, businesses will benefit from flexible, scalable solutions that adapt to future needs.**

With the right strategy and tools capable of incorporating both predictive and generative AI, organizations can not only keep pace with today's demands but also position themselves for success in a rapidly evolving market.

