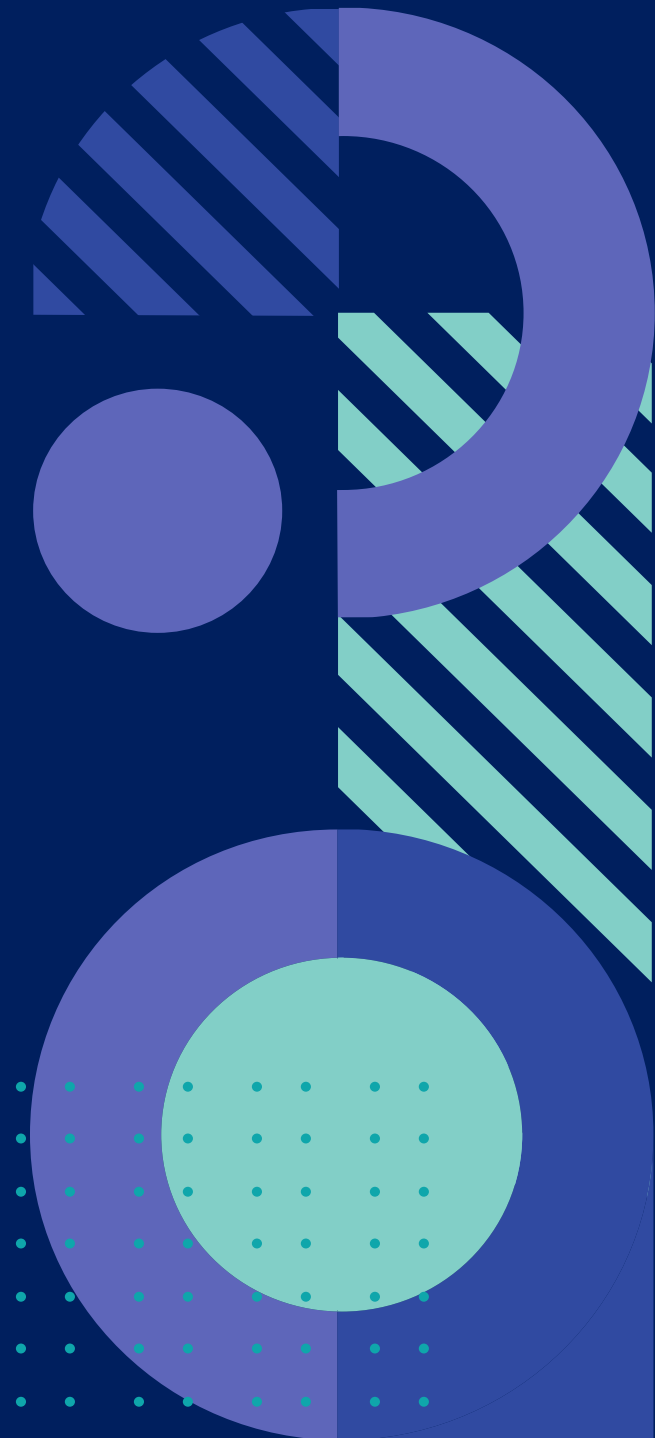



The future of customer engagement is self-optimizing





Consumers and brands are in a perpetual dance, one that is ever-changing and infinitely dynamic. From the individual waking up and checking their email to making a purchase to connecting with loved ones on a social platform – every touchpoint generates invaluable data, painting a unique portrait of the modern consumer.

Multiply this by millions of people doing this same dance, and suddenly brands are left to make sense of a staggering amount of data – billions of data signals each day. How can organizations keep up with them and meet the distinct needs of each unique individual, while at the same time driving organizational value?



Organizational challenges to engagement

Today's enterprises manage millions of customer relationships across dozens of channels. When you combine all of that, they add up to billions of interactions to manage – all in a marketplace where brands are competing for consumers' fractured attention. Chief among the many challenges that brands are trying to navigate:

- **Shifting consumer behaviors and expectations.**

Behaviors are more complex with the continuing proliferation of digital channels, and expectations are higher than ever with trust at an all-time low. Brands are tasked with delivering personalization at scale and outstanding customer experiences, while at the same time demonstrating a respect for consumer privacy. It's difficult to build this kind of trust. According to Gartner, 71% of B2C customers expect companies to be well informed during an interaction and 80% of customers won't share personal information with companies they don't trust.

- **Unifying disparate channels.**

Companies are under pressure to leverage their customer data and technology stacks to help generate customer value, but often struggle doing that efficiently and at scale. Behavioral data is the key to understanding your customers, but activating this data in a timely manner is challenging, especially if it is sitting in silos across the business in various functional areas – a common occurrence for many organizations. To maintain consistency in their engagement strategy, a brand's channels must be unified with data and contextual insights flowing to the appropriate channel to meet customers where they are in the buyer's journey, as well as orchestrate a compelling end-to-end experience.

- **Overcoming resource constraints.**

Properly engaging customers requires time, budget, and, most importantly, human capital. Our current workforce is not just burned out from the economic turmoil that's shadowed the past several years, they also aren't yet fully upskilled to meet the fast pace of innovation. Additionally, executive sponsors of technological transformation often struggle to get business adoption uniformly across relevant groups.



Differentiating from competitors in this environment and meeting shareholder demands requires **self-optimizing engagement.**

Self-optimizing engagement is when an artificial intelligence is trusted to interact independently with customers across the enterprise and learn from those interactions – to the point where it's not just making tactical engagement decisions but actually recommending and shaping their strategies. That includes:

- Orchestrating customer interactions independently across all channels – mobile, email, web, direct mail, chat, IVR, retail or branch, paid media, search, SMS, and beyond
- Automatically self-learning from cross-channel engagement results to improve relevance and personalize as a customer's context changes
- Continuously project and compare opportunity costs to prioritize customer lifetime value
- Maintain the balance of human relationships, versus business performance

It's all in service of delivering better customer and employee experiences while driving better business outcomes.



The self-optimizing engagement continuum

The organizational stages

Achieving self-optimizing customer engagement is a journey – and it's not just about the technology. Foundationally, self-optimizing engagement is about organizational change, trust, and transparency. The journey from manual to self-optimizing customer engagement is a continuum, with organizations across the enterprise being enabled at varying levels. This journey is made up of four stages: the human stage, the automated stage, the self-learning stage, and, finally, the self-optimizing stage.

The foundational stage, or “the human stage,” is just that. It relies on human labor as the primary driver of content, creative, tactics, and strategy. Humans ideate on a new offer or message, build a business case, circulate that case to get it reviewed and approved, design the creative and assets, and then they execute projects to get those designs activated. In most places, it takes weeks for a single offer or action. That's too long for today's consumer; making any tactical changes or strategic pivots in that process is cumbersome and adds even more time to a framework that isn't agile. It leads to bottlenecks and backlogs – difficulties achieving efficiency, controlling costs, activating and coordinating communications, and scaling across teams.

The human stage

- 1. Ideate**
Offers and messages to engage with customers
- 2. Calculate**
Associated costs and return on investment
- 3. Approve**
Solicit review and approval from stakeholders
- 4. Design**
Compelling content and creative assets
- 5. Execute**
Associated projects and deliver on time

Autonomous engagement

Level of autonomy



Business value

The next stage is the “automaton stage.” At this stage, organizations enable greater scale and efficiency by operationalizing data and automating human-engineered initiatives to a degree. Marketing automation allows us to create business rules and triggers to engage with segments of consumers that share attributes to talk to more humans – faster and in a way that has more meaning and relevance than blasting out the same email to an organizations’ entire database of contacts. And while that’s more agile than the previous stage, this stage batches customers into groups. Modern customers expect to be treated uniquely at the time and in the channel that best suits their individual needs.

The third stage is termed “self-learning.” This phase is profoundly focused on data, models, and artificial intelligence. A distinct feature that separates it from marketing automation is the intensive orientation toward the customer. The aim is to anticipate their desires and requirements, as this enhances our efficiency. While machine learning is a significant driving force at this juncture, the prevailing challenge is that our methods remain overwhelmingly tactical. We find ourselves attempting to address identical challenges in a myriad of contexts and through diverse strategies, which impedes our agility and rapid evolution.

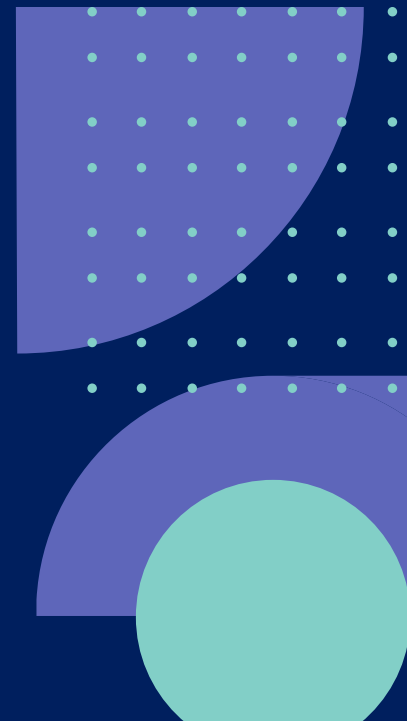
The automation stage

1. **Offer**
Select an offer to engage customers
2. **Analyze**
Mine customer data to identify patterns
3. **Segment**
Group customers with common attributes
4. **Target**
Define rules for who gets offer/version
5. **Deliver**
Execute mapped lists to channels for targeting

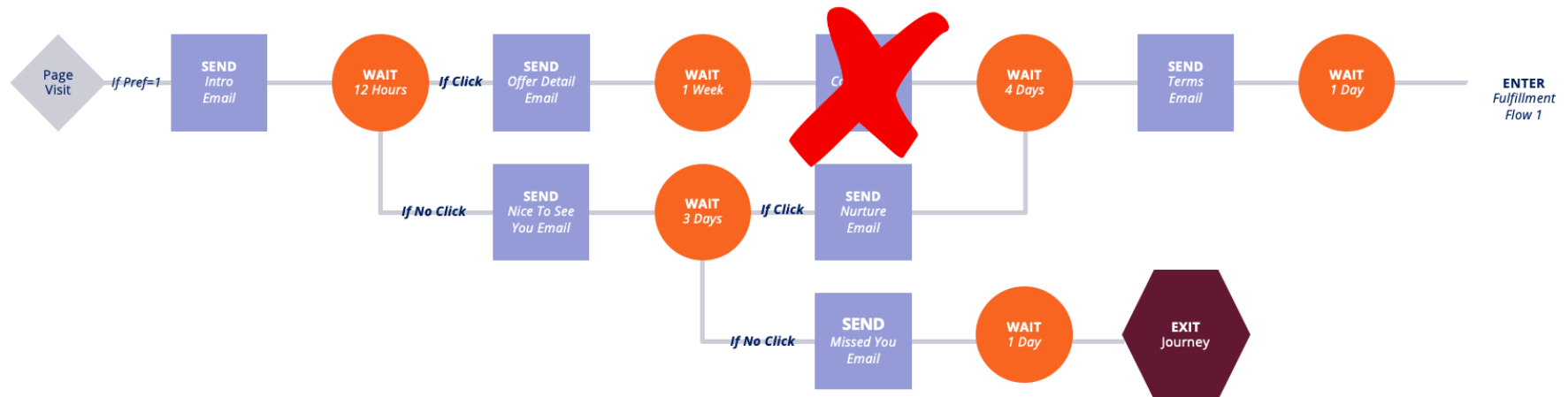
This leads us to the “self-optimizing” phase. At this stage, artificial intelligence assumes a more widely strategic role in the organization, operating continuously throughout the enterprise in a centralized manner. It will not solely focus on tactical engagements but will also evaluate strategic trade-offs and opportunity costs. Historically, this realm is one where there has been reluctance to allow AI to function autonomously. Widespread business adoption is critical to a successful integration of AI as a strategic driver. It will require the trust of employees and executive sponsorship as well as a fundamental understanding that collaboration between humans and AI is at the foundation of this transformation.

Progressing your organization through the continuum

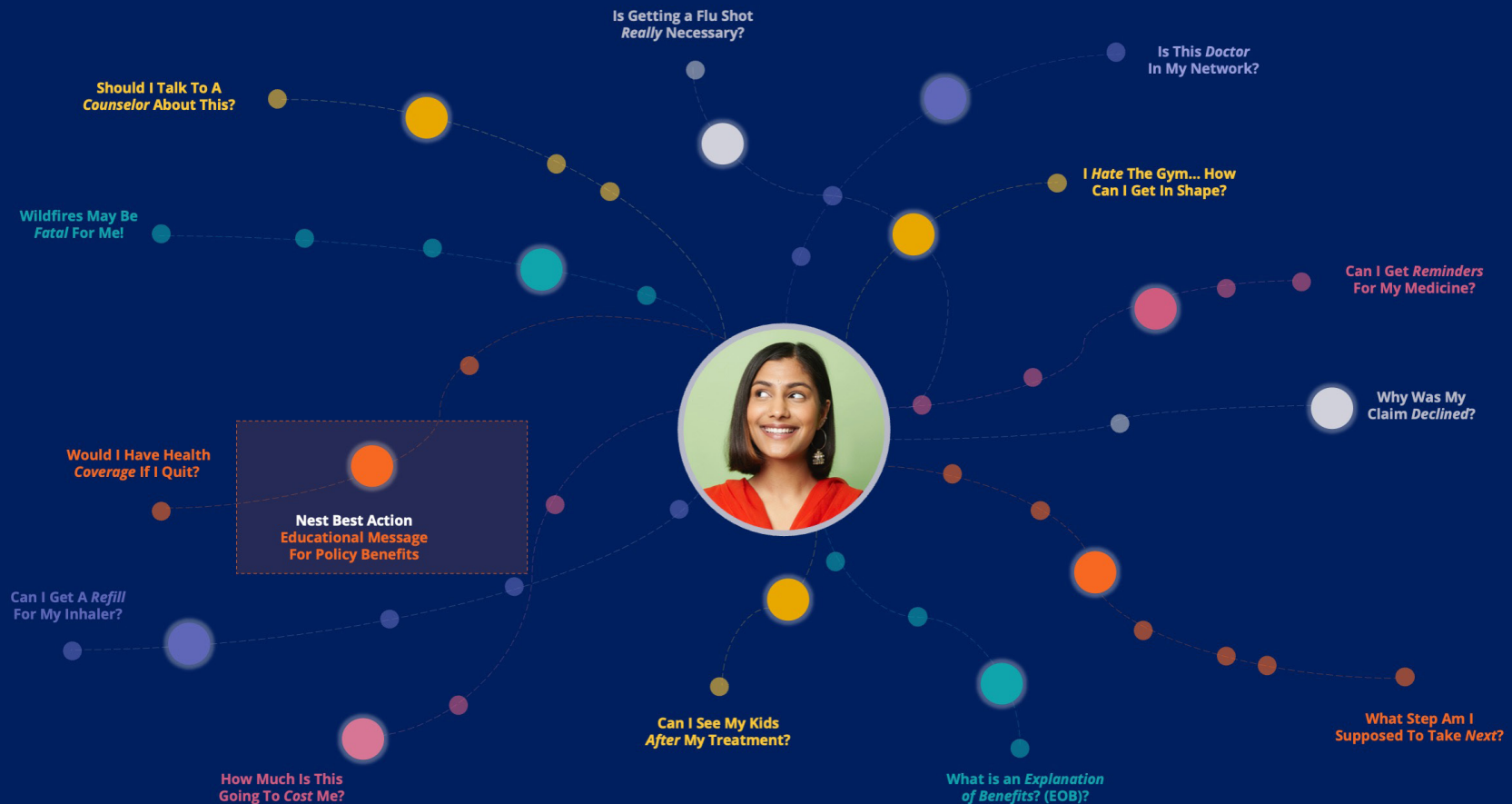
Regardless of where a business may fall on the continuum, transitioning out of the human stage requires organizational and technological changes – with artificial intelligence powering them. There's a time and a place for human labor, it's critical and customers ultimately would prefer to work with a human. In fact, in a recent study Pega released with data from 5,000 consumers across five countries, 71% of respondents said they still prefer to interact with a human being rather than the AI itself. The vast majority (68%) also said they would trust a human bank employee to make an objective, unbiased decision about whether to give a bank loan more than an AI solution. An overwhelming majority (74%) also admitted they would trust a medical diagnosis from a human doctor over one made by AI with a better track record of being right. What this demonstrates to us is that humans are still wary of trusting AI. The paradox is that AI is now critical to handle large volumes of customer engagements. The key is to utilize AI in a way that is dynamic and demonstrates empathy.



The Pega Customer Decision Hub™ enables many of the world’s leading brands to do just that. Customer Decision Hub enables brands to engage in a variety of dynamic and empathetic conversations with their customers and prospects. If you look at the continuum and see what is possible in the foundational human stage, it’s not variety of offers and messages. That framework relies on “one-to-many” messages that lack relevance and personalization. The same goes for the marketing automation stage. While that phase enables more automation and the ability to slightly personalize, we’re still ultimately pre-determining where a customer will go on their buyer’s journey before they even start. A customer journey in the automated stage might look like this:



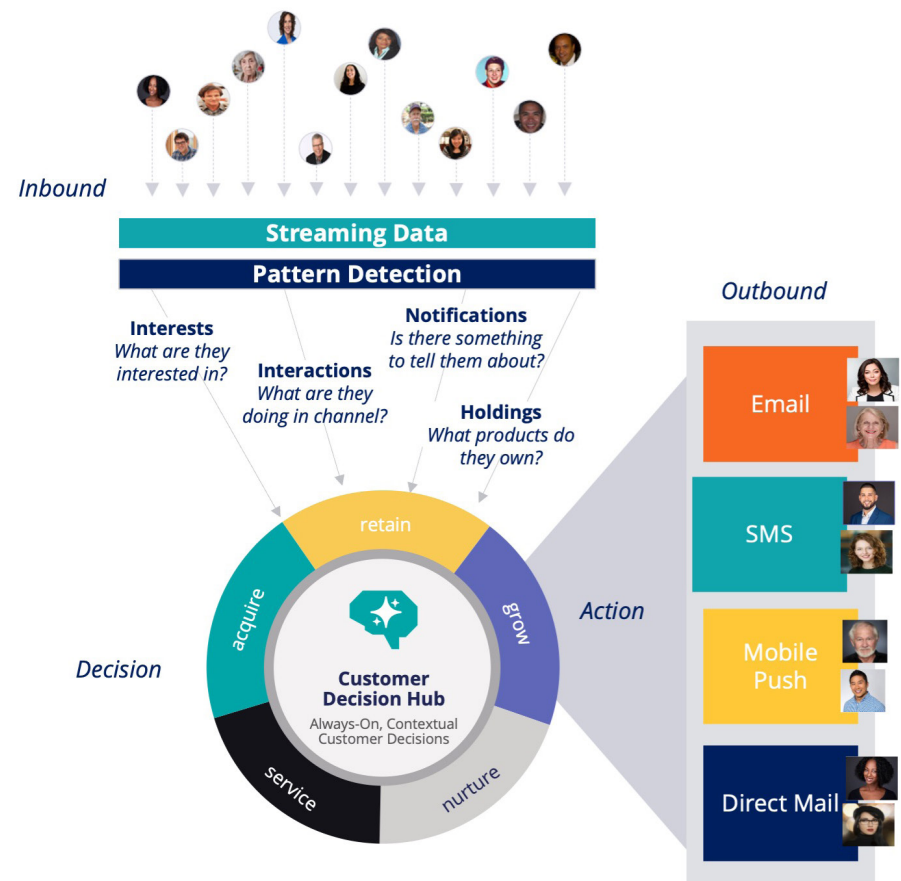
The above process works only when a brand is carrying on one or two conversations at once. And traditionally these conversations are just about selling. But, customers don't move through an organizations' channels in a linear fashion. Today's buyer's journey looks more like this:



An organization that wants to go on a customer-driven buyers' journey will need to have conversations that span the entire gamut of possible conversations in addition to sales: nurture, service, retention, and resilience messages.

Pega Customer Decision Hub enables this variety with adaptive artificial intelligence. Meaning the AI is capable of reading the signals that a consumer emits and the context they are in as they travel on their buyers' journey, then adapting to that data and presenting the buyer with the right offer or message, in the right channel at the right time.

This is called next best action. With Customer Decision Hub, organizations can build out content for hundreds of conversations and have them ready to serve in less than 200 ms, which is how long it takes Customer Decision Hub to calculate and present an offer. The AI-powered decision helps the organization scale to meet the customer need exactly when and where they need it. This type of dynamic engagement is what's possible when an organization moves from the automation stage into the self-learning stage.



Not all organizations are quite ready to move into the self-learning stage, which leverages adaptive, self-learning AI, but that doesn't mean that AI can't help in the automation stage. Next best actions can be delivered in this stage with Pega Next Best Action Designer.

Instead of building a flow for a single offer or campaign like one might do in the human stage, it lets users build out the logic needed to execute an entire strategy – all offers, messages, and campaigns. Humans answer questions about their goals and NBA Designer builds the logic, taking into account things like what business issues you are trying to address, what rules are needed to govern different actions, what constraints you need to respect, and how you want to weigh different types of contexts. In a centralized interface, users can configure:

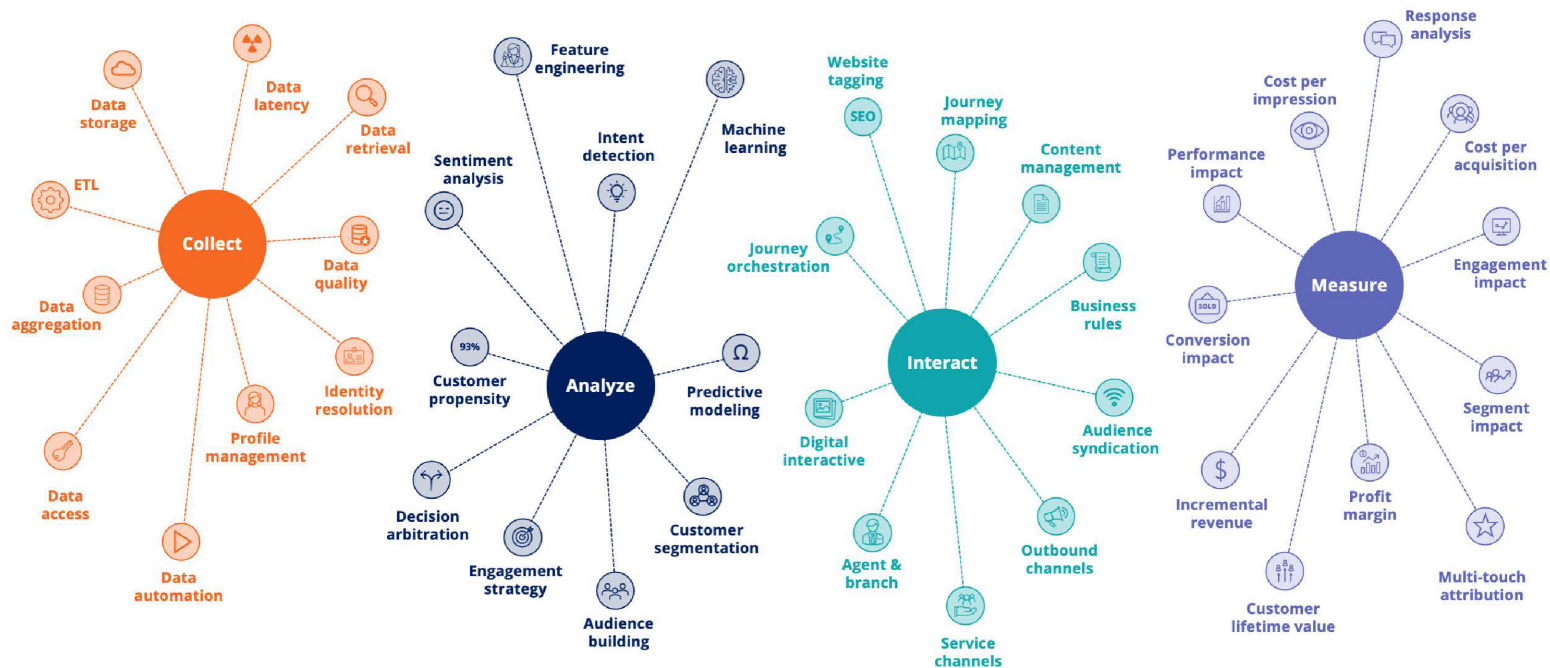
- **Taxonomy** – to define your business structure (sales, retention, service, nurture, etc...)
- **Constraints** – to set up contact policies and controls
- **Engagement policies** – to set eligibility, relevance, and suitability criteria
- **Arbitration** – to create logic that ensures next best actions align with the customer's needs and context
- **Channels** – to bring touchpoints online and create engagement triggers
- **Journeys** – to identify critical steps and stages that need monitoring, prioritization, and optimization in real time

Customer action library

	Acquisition Converting new customers	Cross-Sell Expanding current relationships	Service Supporting daily customer needs	Retention Keeping valuable customers profitably	Nurture Keeping the brand Top of mind	Resilience Safeguarding their financial state
Cross-industry examples	Switch now for free	Save \$300 when you upgrade	Get your free device inspection	Free unlimited talk or text	Everything you need to know about 5G	How to make pay arrangements
	Earn 5% the first year	Go next level with the Black Card	Get real-time travel alerts	Automatic cash back match	Free personal finance class available	You qualify for a payment holiday
	Name your price	Bundle policies and save	New driver? Update your coverage	Download, drive and save	The top 10 auto insurance discounts	Cashing in your policy
	Earn 100,000 miles today	Upgrade to 1st Class now	Make your payments online	Earn 60,000 bonus miles	What to do before you fly	Booking a bereavement fair
	\$0 monthly Medicare premiums	\$0 preventative dental care	Are you covered? Check in seconds	Get your no-cost flu shot today	Finding a new primary care doctor	How to submit an appeal


Business issues

Moving into the self-learning phase lets brands deliver the kind of customer experiences that consumers now require. But it requires brands to be enabled to convert data and signals into insight. Most organizations have data silos throughout the functional areas of their business and technology stacks, and they need to unify that data in order to provide meaningful experiences. They must collect data, analyze it, and activate it appropriately, and then be able to measure their efforts. Marketing organizations often must prove that their engagement is driving the right customer behavior to garner investments in their programs.



For example, many brands utilize customer data platforms (CDP) in their marketing technology stacks to augment their data collection efforts. CDPs typically collect raw behavioral data, such as web browsing events, mobile activity, and transactional activity, and convert them into a common set of behaviors, needs, sentiments, goals, or intents to help guide customer engagement strategies. They are powerful tools but only when connected to the applications that can activate that data across channels.

At Pega, we enable brands to activate data across channels with a suite of real-time customer data connectors that convert streaming data and map it directly to our real-time customer profile, so it can be used for real-time learning and model scoring. They're designed to integrate data and decisioning almost instantly – so you can use streaming insights for predictions, rules, and next-best-action decision-making.

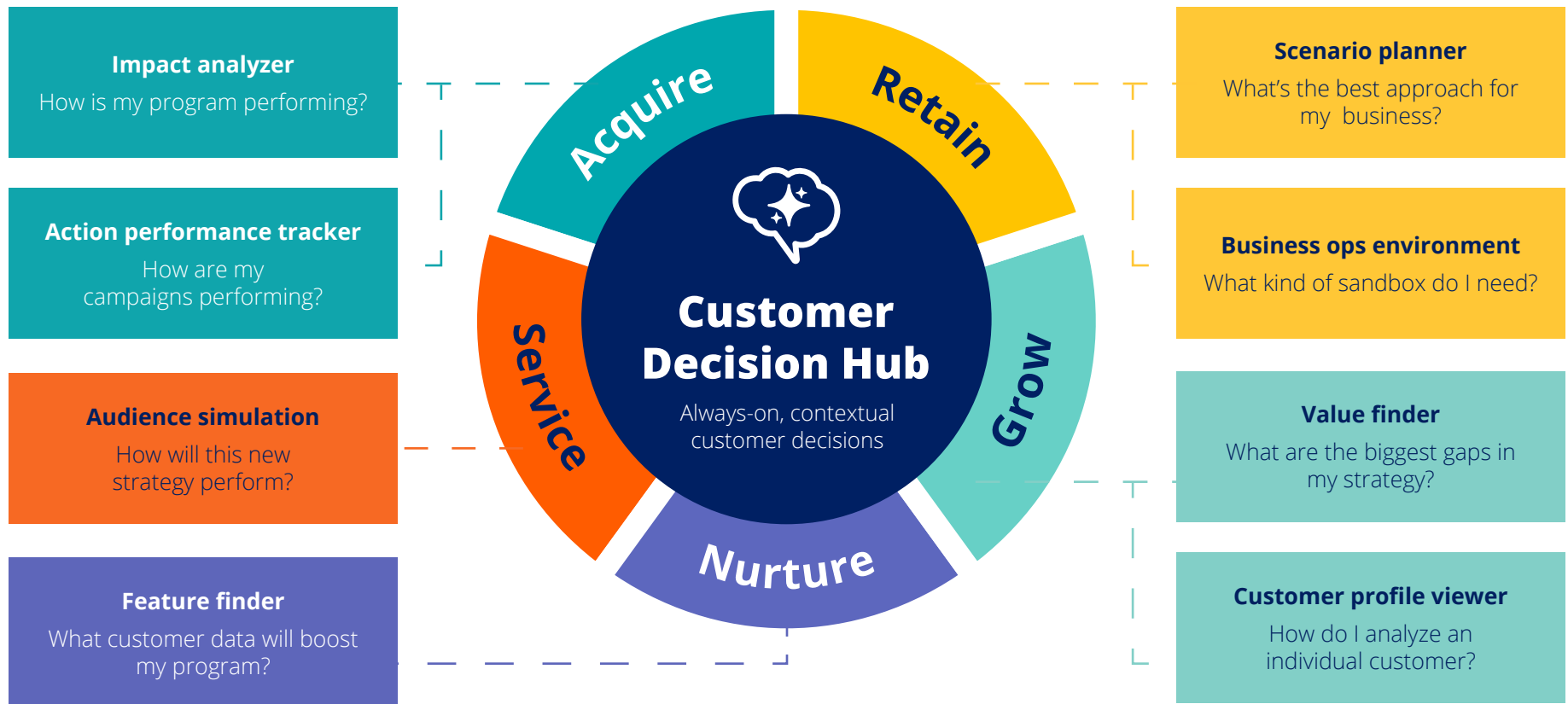


Also in the self-learning stage, Pega provides the Prediction Studio application that offers a full suite of “adaptive” machine learning and predictive modeling capabilities. The application also allows clients to activate their own proprietary predictive models within the next-best-action framework. As customers interact with your brand, the models adapt or “self-learn” according to the customer’s contextual signals. So if a customer pivots, the technology can use that data to “re-decision,” making every touch relevant and perfectly timed in the channel they are in at that moment.

The end stage of the continuum is the self-optimizing stage. Integrating self-optimizing AI across functional areas empowers organizations to be more customer-centric, efficient, and forward-thinking. In this stage, AI works centrally across business lines to optimize the overall customer strategy. Behind the scenes, the AI is constantly testing, simulating, and evaluating the opportunity costs of different approaches – then adapting the strategy itself or making change recommendations for the customer engagement team to consider. It may recommend leveraging up certain actions or messages based on the current customer climate, or to shift away from certain strategies, tactics, or channels because of declining effectiveness.

In addition to enhancing customer experiences and operational efficiency in the self-optimizing stage, AI is able to assist with risk management by predicting potential pitfalls or challenges and alerting organizations before issues become critical. AI systems also add a layer of agility by helping brands adapt to changing circumstances, whether they be market shifts, consumer behavior changes, or new organizational goals. This agility ensures the organization remains resilient and responsive as well as future focused. With the business environment constantly in flux, organizations are better equipped to face uncertainty.

Self-optimizing capabilities



How does generative AI fit in?

Generative AI is a powerful tool, especially for marketers and customer engagement professionals who create content in response to natural language requests. Gartner defines it as artificial intelligence that “can learn from existing artifacts to generate new, realistic artifacts (at scale) that reflect the characteristics of the training data but don't repeat it. It can produce a variety of novel content, such as images, video, music, speech, text, software code, and product designs.” And there is a wide spectrum of who inside an organization is able to use it effectively across business use cases from the hands-on keyboard marketer to the advanced data scientist and many roles in between. So how can enterprises derive value from generative AI in their engagement strategies?

- **Artifact generation**
Algorithmic creation of treatments, conversations, and other artifacts that will be presented to humans - like treatment variants, persona templates, and journey definitions.
- **On-demand recommendations**
When requested, the AI will review aspects of the client's program, identify gaps in coverage or performance, then generate actionable suggestions in the form of simulations or reports.
- **Autonomous guidance**
Contextual insights, and best-practices will be pro-actively recommended to employees in-line as they're working, without forcing them to disengage from day-to-day operations.

Generative AI should augment next-best-action programs to enhance those programs, by providing capabilities like artifact generation, on-demand content and strategy recommendations, and real-time guidance on insights and improvements users can take to optimize their programs and day-to-day operations. These capabilities will enable businesses to optimize processes that have historically been highly manual with many levels of approval like campaign content creation and optimization, persona analysis and testing, as well as adding a layer of transparency and explanation to the AI-powered decision-making process.

It's important to understand that generative AI is just one form of AI that can be utilized during the self-optimization journey. You will have multiple types co-existing to make up an overall AI strategy that underpins your organization.

Content creation and optimization

Generative AI is a game-changer for everyday content creation. Of course, it helps us generate content in real time to help us scale. But it also can accelerate our ability to understand if the content is making an impact on its intended audience – all because we can automate the measurement process. And if the artificial intelligence is adaptive, that means it can learn from the data it senses through interaction and continue to learn as more data comes in. This enables the AI to read customer context, which is critical to identifying elements in the creative that are or aren't making an impact like tone and copy length. If the AI is enabled by users to swap content according to a customer's context, that drastically reduces the time to pivot messaging.

At Pega, this capability is called intelligent treatments. With intelligent treatments, users can interact with and instruct generative AI to generate content, using their own prompts or automated recommendations. For example, in 1:1 Operations Manager, instead of manually creating a new treatment for an email action, a marketer can prompt the AI to select tone, what fields to generate, and refine quickly and at scale. This enables marketers to save time on creating variants and focus on high-level strategy and exceptions. Additionally, that same marketer can have the AI examine their program and provide recommendations on how to better engage underserved audiences. The AI can also examine which treatments are most likely to be impactful to those audiences.



Persona analysis, testing, and simulation

Finding the correct personas has often been overly driven by things like demographics, assumptions, and biases of their creators – and it has long challenged marketers.

However, the days of the marketer's hunch of who their target is are rightfully coming to an end. Personas are most effectively utilized when they are developed from actual behaviors, pain points, and goals.

Generative AI offers new persona management capabilities. The Pega Customer Decision Hub enables generative AI to describe and generate personas, run simulations on them, and review any given decision for a persona, including a human readable explanation for why that decision was made. This means that users can actually test personas before they are put into production. This is a massive improvement over legacy tactics that relied on post-campaign readouts to validate whether brands were targeting the personas most likely to respond.



Transparency and explanation

Opacity in artificial intelligence is a risk for brands, especially those who handle sensitive customer data. Opaque AI functions as a black box system, in which the technology doesn't clarify its workings or its reasons for certain actions. While this doesn't render opaque AI ineffective, it does make it riskier and potentially problematic. On the other hand, transparent AI is designed to articulate its decisions and the processes behind them, detailing precisely how it utilizes data for decision-making.

Pega's new generative AI capabilities for Customer Decision Hub have been built to be well-governed, robust, fair, transparent, and empathetic to customer and user needs. For example, in Customer Profile Viewer, generative AI will automatically provide visibility into why AI decisions are made by analyzing decisioning data and providing easy-to-understand explanations of why certain actions would (or would not) be presented to a customer. And treatment generation capabilities are built into 1:1 Operations Manager so AI created artifacts are managed in an auditable, transparent, and, most importantly, human-guided manner. The human and AI partnership is critical.



Who's leading the way

Organizations across industries are in various stages of the self-optimizing journey. Here are three brands that are seeing results as advanced users of AI for self-optimization.



CommonwealthBank

Next best conversations

Launched 250 adaptive models to production in one week



vodafone

Always-on marketing

Using streaming data to learn and adopt to customer intent



verizon

Supercharge agents

Shift from selling to retaining based on CLV and churn likelihood

Conclusion

In this eBook, we've explored the evolution from traditional human effort to the advanced future of self-optimizing engagement. The primary insight is this: as technology continues to advance, the goal is not to eliminate human involvement. On the contrary, it's to enhance the unique human touch. This positions brands to meet customer expectations, keep employees focused on strategic work, and ultimately deliver shareholder value, all while maintaining transparency and consumer trust.

As organizations, it's not just about adopting technology for technology's sake, but about ensuring its alignment with core values, and the promises made to customers. It's about understanding that behind every data point is a human story, a journey filled with goals, needs, and emotions.

In this age of self-optimizing engagement, the beacon that should guide every organization is clear – to harness technology to understand the individual, not just the market. Prioritize genuine connection over mere conversion, and embrace AI to create customer relationships where every engagement is not just optimized, but also meaningful to the unique individual as they move through their journeys.

