

Modernize your customer engagement with Red Hat

Provide personalized experiences with open source innovation

Features and benefits of Red Hat's customer engagement hub (CEH) solutions:

- Revenue growth
- Increased customer loyalty
- More insightful customer engagements

Open source innovation helps modernize customer engagement

Businesses seek to benefit from every customer interaction with a real-time personalized experience across their marketing, customer servicing, fraud, and business operations teams. At the heart of these efforts is the modern customer engagement hub (CEH), which uses decisioning and integrated artificial intelligence (AI) models to react to events in real time, fine-tuning each customer's experience for every interaction with the business. Events, customer channels, and the ability to hyper-personalize the customer experience are rapidly increasing. Open source technologies offer businesses the ability to quickly take ownership of their customer engagement, enabling faster innovation, greater competitive differentiation, improved digital customer retention, and increased customer onboarding speed.

Benefits of modern, open source CEH solutions include:

- **Revenue growth.** In 2018, 93% of companies with advanced personalization strategies experienced revenue growth.¹ Consumers expect highly personalized experiences from businesses and are willing to spend more money when brands deliver targeted recommendations. Businesses that meet and exceed revenue targets take a serious, customer-centric approach to drive pervasive and persistent customer experiences.
- **Increased customer loyalty.** If a business treats every customer the same (i.e., takes an impersonal approach) or gets information wrong when directly marketing to a customer, consumer frustration can quickly turn into disloyal or lost customers. In contrast, "according to hundreds of Gartner client interactions in marketing departments, for example, real-time offers can be up to 10 times more effective than traditional outbound campaigns, while event-triggered campaigns can be up to 5 times more effective than nonpersonalized campaigns."² This leads to happy, increasingly loyal customers.³
- **More insightful customer engagements.** According to Gartner, "Event-triggered and real-time marketing will have the biggest impact on marketing activities in the next five years."⁴ With greater adoption of triggered marketing techniques, businesses will increasingly be able to select the optimal time for deploying the right message in a particular channel for a specific individual. Using predictive analytics and integrated self-learning AI models will let businesses more quickly identify trends, derive insights, and make recommendations to improve growth, customer satisfaction, and retention across channels.

¹ "Monetate Study Finds Brands Experiencing Highest Return on Personalization are Twice as Likely to Cite Customer Lifetime Value as Primary Goal." Business Wire, 13 Mar. 2019.

² Golluscio, Elizabeth, et al. "Make Your Customer Engagement Hub Real Time With Continuous Intelligence." Gartner, ID: G00366640, 8 Nov. 2018.

³ "The 2017 State of Personalization Report" (PDF). Segment, 2017.

⁴ Gartner press release. "Gartner Identifies Four Emerging Trends That Will Transform How Marketers Run Their Technology Ecosystems," 29 Aug. 2019.

Many current CEH systems fail to meet customer demands

Realizing these benefits requires a different type of CEH than the ones most companies use. Many businesses use CEH systems that cannot deliver the personalized service customers are increasingly demanding. Here are some of the concerns with CEH systems:

- **Most existing CEH systems are not event-driven and responsive in real time.** Gartner predicts that “by 2022, more than 10% of customer engagement hub architectures will include real-time event streaming or streaming analytics.”⁵ The ability to react to real-time events can have a significant impact on customer engagements. For example, a retailer that does not process and make decisions based on real-time social network feeds would miss a social influencer’s mention of one of its products, and thus would miss the in-the-moment opportunity to market that product to its customers. Streaming data, including social, behavioral, financial, or geospatial, needs to be collected and immediately analyzed for improved customer experiences. A business can gain valuable insights—and act quickly upon those insights—by using social media feeds to track public sentiment. Or a financial firm, for example, could track real-time stock market feeds and contact clients immediately if their portfolios need to be rebalanced due to a market dip or correction.
- **Databases are isolated.** Another issue impacting the ability of a CEH system to get a 360-degree customer profile and meet customer expectations is isolated databases. Most businesses use different systems for marketing, operations, customer databases, products and services databases, and more. Many of these systems are separated, and the data is not easily shared. Businesses are challenged to incorporate a range of data solutions integrating data across multiple apps and systems, extract data from different formats and back-end systems, and incorporate real-time data streams. Unlocking value from business data at the point of need is a key requirement to improve the customer’s experience.
- **Architectures are monolithic.** Older CEH systems are based on monolithic architectures that are designed to be self-contained. Components are interconnected and interdependent. As such, these systems are difficult to modify. With respect to CEH solutions, the rigidity of monolithic systems makes it hard to scale and autoscale based on usage, deploy in multicloud environments, or innovate by integrating new microservices.
- **Intelligence is limited in a commercial off-the-shelf (COTS) vendor offering.** While most CEH systems use predictive analytics to determine relevant customer offers, they are limited by the intelligence designed in them. Also, while many businesses use data scientists to generate AI models, packaged CEH systems lack the ability to integrate these AI models, limiting the ability to personalize and continually improve customer offers. COTS offerings should not determine how intelligence is invoked. Your business and how you need to engage with your customers should be the basis for implementing customer intelligence.

⁵ Golluscio, Elizabeth, et al. “Make Your Customer Engagement Hub Real Time With Continuous Intelligence.” Gartner, ID: G00366640, 8 Nov. 2018.

Red Hat's open source CEH solution delivers a personalized customer experience

Meeting customer expectations for engaging, personalized service in every encounter with a business requires a CEH that can keep pace with changing demands and incorporate new technologies. Red Hat's modern, open source CEH solution allows this flexibility and provides several capabilities.

Integrated self-learning AI models with decisioning logic

Businesses now have access to more in-depth data about their customers than ever before. If properly analyzed, the data will help identify customers' pain points, buying habits, and past interactions with agents to deliver highly personalized service.

Self-learning AI holds promise to help businesses achieve these benefits, but it currently suffers from a lack of transparency and explainability. A better approach is to use AI in tandem with decision models to provide control and transparency to stakeholders while allowing data scientists to continually improve the predictions. This approach ensures that responses to the customer remain in the hands of a collaboratively authored repository of decisions and orchestrated flows.

When used in a CEH, self-learning artificial intelligence and machine learning (AI/ML) predictive models evolve over time, better identifying customer preferences based on events and real-time data. Just as a human would learn, the models use iterative processes to fine-tune and improve their results. In this way, a CEH could use self-learning AI/ML models with decisioning to optimize marketing campaigns and personalize every interaction a customer has, through any channel.

Open source innovation provides a standards-based way to integrate AI models, freeing businesses from the restriction of using a single vendor's AI/ML solution. Using an open source CEH solution from Red Hat® Services, businesses can invoke their data scientists' AI models or use any vendor's AI models to quickly integrate, test, deploy, and track customer offers. In this way, a business can develop innovative customer engagement solutions based on the changing buying habits and behaviors of its specific customers without being tied to an off-the-shelf solution. Such efforts can increase business agility and give a company a competitive advantage.

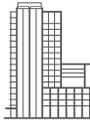
Optimization for real-time data

Developing a CEH that reacts to real-time events requires an event-driven architecture. Streaming data requires a high-performance and scalable data event processing architecture and adds a layer of complexity regarding fault tolerance, data durability, and scalability. With Red Hat's CEH solution, businesses can quickly use proven open source technologies (such as Apache Kafka, a stream-processing platform) to respond to real-time events and in-memory caching of next available offers at the point of need.

Scalability

Personalizing a customer's experience is all about delighting the customer. To accomplish this goal, businesses need to implement a customer engagement architecture that delivers a consistent and contextual customer experience regardless of technical challenges such as deployment, usage, or peak loads. Any solution must be able to run anywhere (on-premise, cloud, or hybrid cloud) and must be designed as decoupled services or microservices, deployed using containers within robust Kubernetes-based platforms. Red Hat's CEH solution runs on Red Hat OpenShift®, a Kubernetes-based platform. It provides the ability to scale and autoscale, delivering an exceptional customer experience regardless of its physical deployment or usage.

Red Hat's CEH solution gives businesses the ability to replicate their customer engagement architecture. The act of creating personalized offers for retail banking, for example, can be used for brokerage clients by changing AI models and reacting to different real-time events. This same engagement architecture can be deployed to improve employee onboarding or detect fraudulent behavior. By working with Red Hat to make this engagement architecture customizable, businesses can change the way they



About Red Hat

Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers integrate new and existing IT applications, develop cloud-native applications, standardize on our industry leading operating system, and automate, secure, and manage complex environments. Award winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.

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engage with their customers, employees, partners, and suppliers, providing real-time responses with relevant content at the time of need.

Continuous innovation

To deliver the required customer experience personalization, a CEH needs an open architecture that lets the business share and unlock value from its data. An open architecture gives a business the flexibility to add new features and AI models, and evolve the system to meet new business requirements over time. To that point, a modern CEH must use standards, containers, and microservices, and it must be built to deliver innovative features that improve each customer engagement.

Another Red Hat service that helps give businesses control of their CEH architecture is Red Hat Open Innovation Labs. In this residency-style collaboration engagement, customers and Red Hat experts work together as a team to rapidly build open source software applications and prototypes. With this fast-track approach, customers can quickly develop superior CEH solutions, sourced from Red Hat's open source technologies, open processes, and open culture.

Red Hat's CEH solution benefits businesses and customers alike

Selecting the right technology partner—especially one that embraces open source—can accelerate CEH implementation, empower businesses to make changes quickly, and enable continuous modernization. Red Hat's CEH solution goes beyond simply providing an architecture. Red Hat offers a repeatable framework based on real-world deployments using cloud-native technologies such as Kubernetes, microservices, and containers running on Red Hat OpenShift for hybrid, multicloud, and on-premise deployments.

Red Hat's CEH solution allows businesses to build a CEH for their unique requirements and intellectual property. The Red Hat open source approach helps businesses adapt to changing market dynamics, shifting customer demands and expectations, and the need to constantly incorporate new technologies. Red Hat's CEH solution gives businesses the power to optimize their offerings for an enhanced customer experience.

The CEH is one aspect of an organization's digital transformation journey. To learn more about digital transformation, visit

<https://www.redhat.com/en/solutions/digital-transformation>.



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