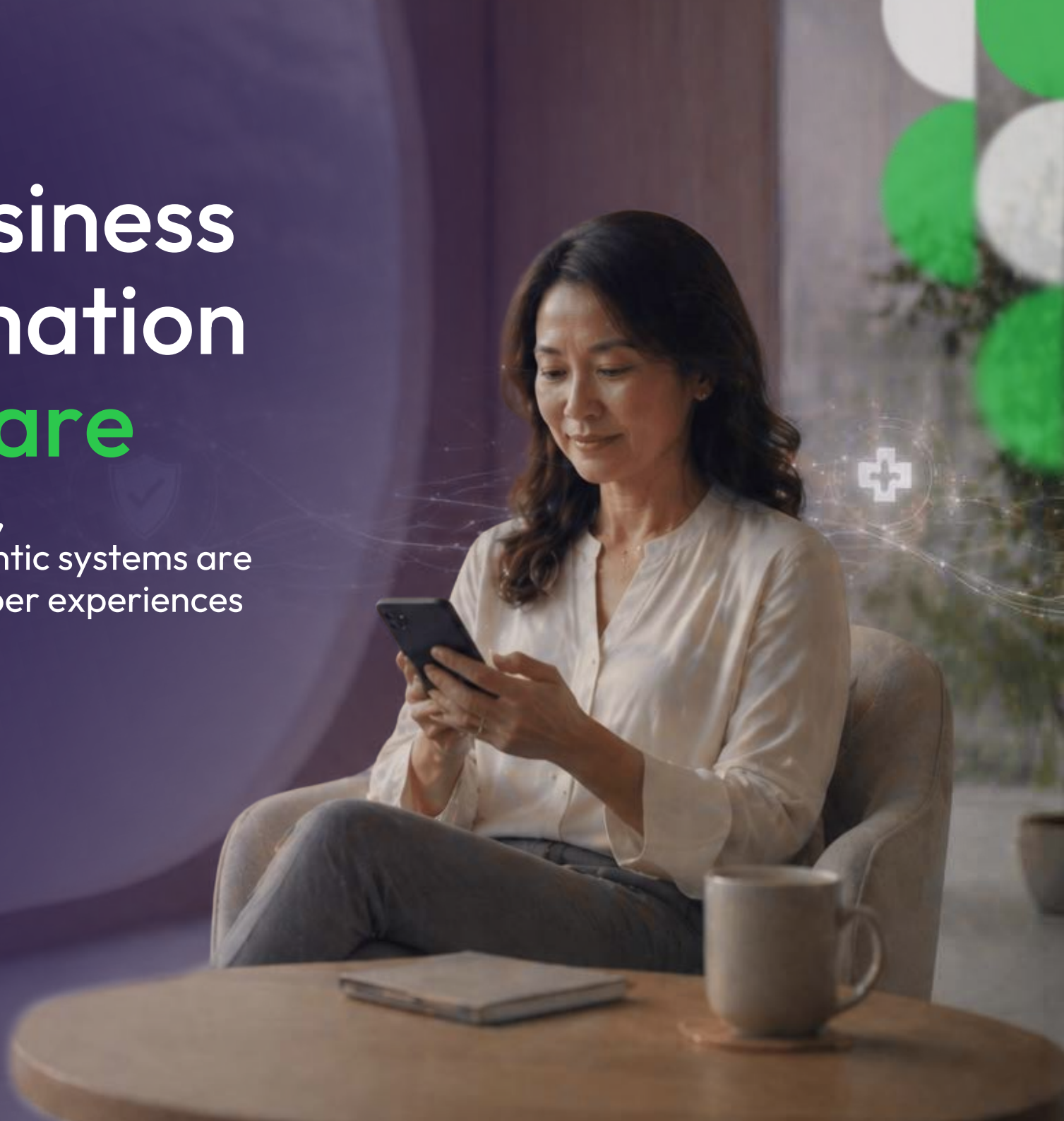
AI-Led Business Transformation in Healthcare

How intelligent automation, conversational AI, and agentic systems are reshaping payer and member experiences



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Healthcare organizations are under increasing pressure to improve experiences, reduce administrative burden, and modernize core operations without compromising accuracy, compliance, or scalability. Yet many critical workflows still rely on fragmented systems, manual effort, and disconnected channels that create friction for both members and internal teams. From onboarding and contact center interactions to pre-authorization, search, and benefit utilization, these gaps can slow service delivery and limit the value organizations are able to provide.

This is where AI-led transformation is beginning to make a measurable difference. When applied to high-friction workflows, AI can simplify interactions, improve accuracy, reduce delays, and create more adaptive operating models across the enterprise. The following caselets show how Brillio helped healthcare organizations translate AI into practical business outcomes through OCR-led data capture, conversational AI, intelligent search, automation, personalized engagement, and agentic orchestration. Together, they reflect a broader shift from isolated point solutions to connected, scalable transformation.

Making member data capture faster, simpler, and more accurate

Manual entry of insurance information remains one of the most common points of friction in digital healthcare experiences. Long strings of data, such as member IDs, group numbers, and plan details slow registration and onboarding, introduce avoidable errors, and create unnecessary frustration for users. For a leading healthcare player, that often meant more support effort, more verification work, and lower completion rates across key digital workflows.

To address this, Brillio designed an OCR-led mobile data capture experience that made it easier for users to scan or upload an image of their health insurance ID card directly within the app. The image was securely processed in AWS, where Textract extracted key-value pairs, printed text, and table fields. Backend logic then mapped the extracted values to the appropriate application fields using normalization, fuzzy matching, and validation rules. The final step presented the prefilled information back to the user for review, giving them control while significantly reducing manual input effort.

The solution improved both speed and accuracy while creating a more user-friendly digital intake journey. It also introduced reusable backend and field-mapping components that can support future OCR-driven experiences beyond this specific use case.

Business Impact

80% faster
form completion time

80–90% increase
in data accuracy

50–60% reduction
in user drop-off rate

40–50% fewer
customer support tickets

30–40% increase
in user satisfaction

Reimagining the member front door with conversational AI

Legacy IVR systems often compromise the member experience from the first interaction. Managing over 40 million calls annually, a major healthcare organization found its rigid, menu-driven architecture unable to scale, complicating resolutions across a wide range of inquiries. These mechanical experiences proved difficult to navigate, particularly for members facing time-sensitive or stressful health concerns. At this volume, these inefficiencies resulted in increased abandonment rates and longer wait times, ultimately eroding member satisfaction.

We've helped reimagine this member "front door" by introducing a conversational AI experience built to support more natural, human-like interactions. Using IBM Watson on Microsoft Azure, the team deployed a conversational AI layer designed to augment contact center operations and improve how members accessed information and support. The broader transformation also included a scalable blueprint for automation, orchestration, data migration, and analytics, along with integrations across telephony, web, and chat channels to create a more consistent omnichannel experience.

By moving away from a purely menu-led model and toward context-aware conversations, the organization was able to improve engagement, reduce wait times, and create a more empathetic and effective support experience. The program also demonstrated that conversational AI delivers greater value when it is backed by strong orchestration, integrated channels, and reusable architecture.

Business Impact

44.7 million
calls handled through the solution

80%
containment rate achieved

72% engagement rate
compared with 10% through the legacy IVR

60% reduction
in average wait time

CSAT peaked
and became the highest across engagement channels,
driven by more personalized and responsive member interactions

Equipping service representatives with intelligent search for $10m savings

For a leading healthcare organization, the internal complexity of member support has become a barrier to efficiency. With approximately 10,000 CSRs managing over 22 million annual inquiries, primarily regarding complex benefits and coverage, the reliance on manual searches across fragmented repositories creates significant friction. This lack of centralized, intelligent support not only drives up Average Handle Time (AHT) but also compromises the consistency and quality of the member experience.

To improve this, Brillio developed a Google-like cognitive search experience designed specifically for agent enablement. The solution brought together structured and unstructured content and paired it with member context to generate more accurate, personalized search results. Built using Azure Cognitive Search, semantic search, AI/ML models, and a real-time feedback loop, the platform was designed to be intuitive, fast, and closely aligned to the way agents already work. That familiarity helped drive adoption while making it easier for teams to respond with greater confidence and consistency.

The result was a smarter support environment in which agents could surface relevant answers more quickly, improve the quality of member interactions, and reduce inefficiencies tied to manual searching. Just as importantly, the solution created a foundation for continuous improvement through feedback-driven model refinement.

Business Impact

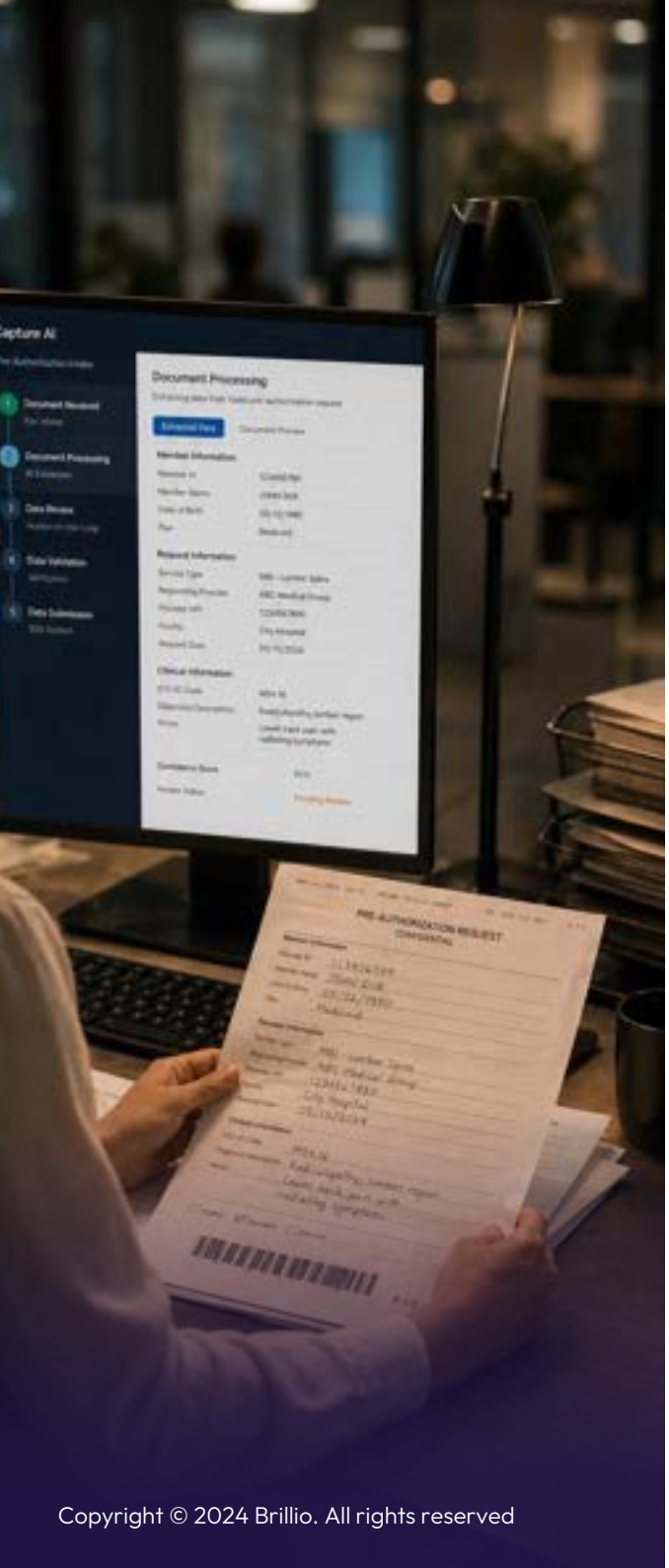
6-8% projected reduction
in average handle time across benefit-related calls

$10 million
in estimated gross savings over 3 years

Improved
agent productivity and response consistency

Higher
first-call resolution

Improved CSAT
and fewer repeat callbacks



Automating medicaid pre-authorization for speed and accuracy

Pre-authorization remained one of the most operationally intensive workflows for this major healthcare organization. With 1,800 requests arriving daily via fax, the reliance on manual data entry across multiple form types created a critical bottleneck. This fragmented intake process not only introduced significant error risk and SLA non-compliance but also created a tangible barrier to timely member care. At this volume, manual workflows place an unsustainable burden on administrative teams and hinder the organization's ability to scale efficiently.

Brillio addressed this challenge by deploying a capture AI solution that automated fax intake and extraction using IBM DataCap and Microsoft Azure Form Recognizer. The solution was built to process both structured and unstructured data from multiple form types, while a human-in-the-loop layer ensured that low-confidence extractions could still be reviewed for accuracy and compliance. Once validated, data was passed directly into the backend SSA system, reducing manual touchpoints and accelerating downstream processing.

This hybrid automation model improved both throughput and reliability. By combining AI-based extraction with targeted human review, the organization was able to move faster without sacrificing control in a highly regulated environment.

Business Impact

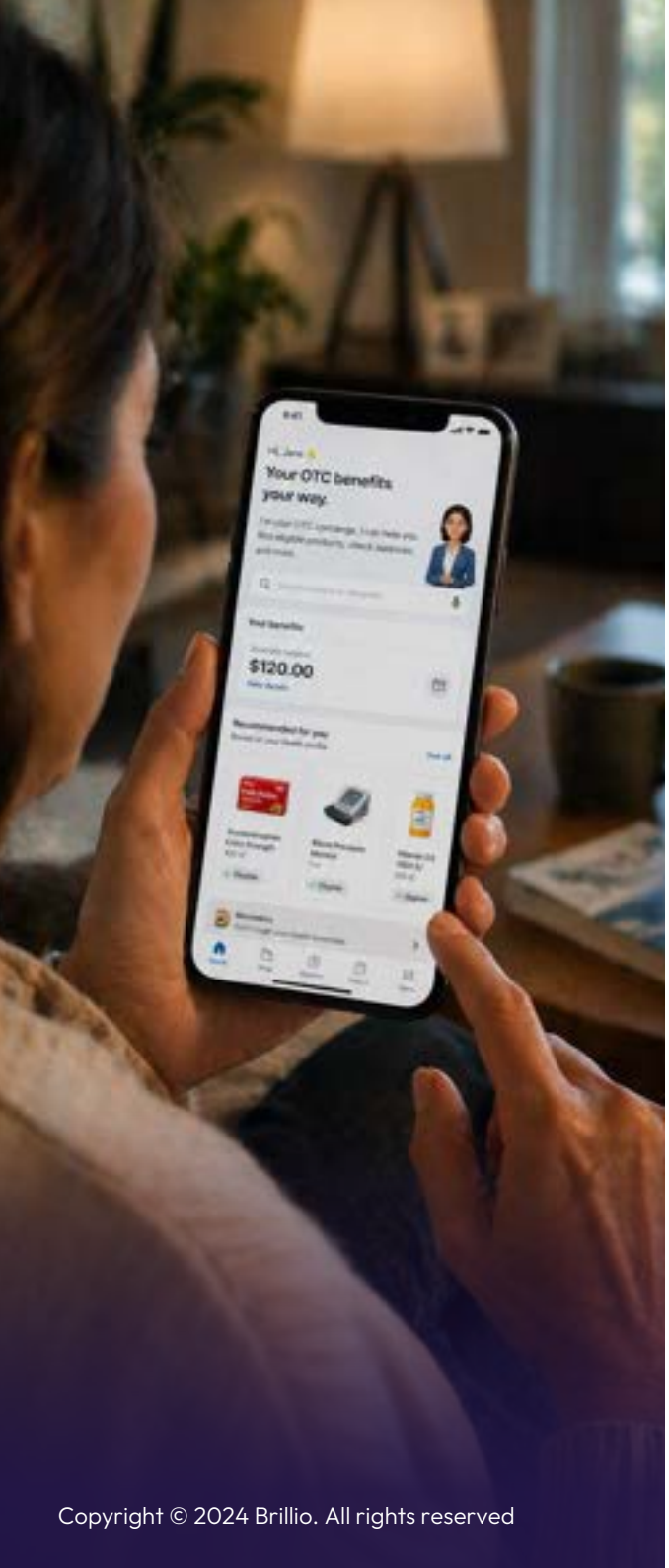
Accelerated turnaround time
for pre-authorization processing

Faster access
to care for members

Reduced manual errors
leading to fewer denials

Improved SLA adherence
and operational efficiency through automation

Freed up
staff capacity to focus on higher-value exceptions and member service



Reimagining OTC shopping with a personalized digital concierge

Over-the-Counter benefits represent a significant opportunity to improve member health, yet 70% of these benefits - totaling approximately $5B annually - remain unutilized. For this leading health and pharma organization, the gap is driven by a lack of awareness and friction-filled experiences. Seniors, in particular, struggle with fragmented journeys across digital and physical channels, where a lack of contextual guidance prevents them from effectively accessing the care and products they are eligible for.

Brillio approached this challenge by redesigning the OTC experience around a member-centered AI model. The solution introduced a personalized virtual assistant embedded across touchpoints to guide members through product eligibility, reminders, voice and visual search, and context-aware recommendations. The experience was built around a clear persona lens and aligned digital interactions with in-store journeys, helping create a more seamless and intuitive path from discovery to purchase.

Rather than adding complexity, the goal was to reduce it. By simplifying navigation and surfacing relevant, health-aware recommendations in real time, the organization was able to create a more helpful and accessible member experience while improving benefit utilization.

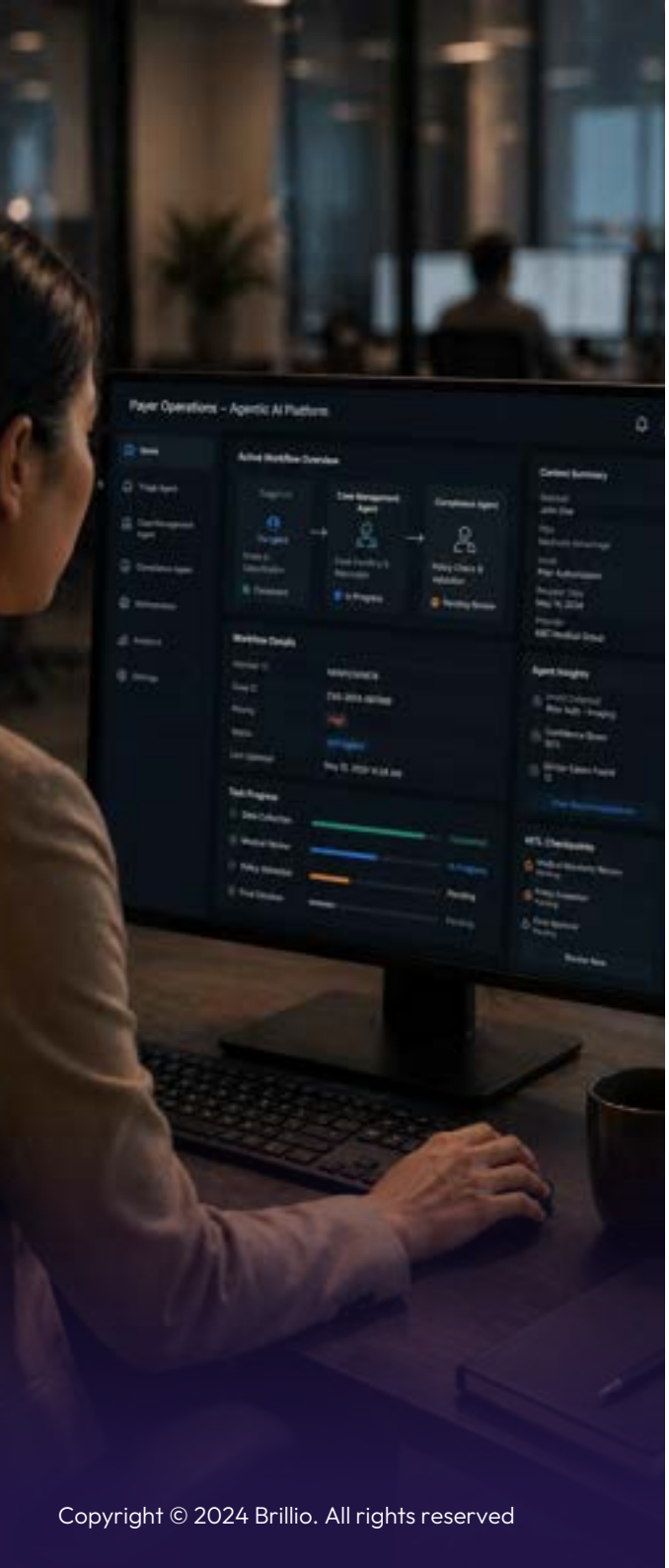
Business Impact

25–35% increase
in OTC spend utilization

Improved
senior member satisfaction

Reduced
call center costs

Enabled
low-latency recommendations and contextual assistance through AI/ML operationalization



Optimizing payer operations with a family of agents

For a leading healthcare payer, the primary obstacle to operational excellence is process fragmentation. When triage, case management, and compliance function as disconnected silos, the "Cost to Serve" inevitably rises. Modern healthcare environments have reached a level of complexity where traditional automation is no longer sufficient; there is a critical need for a unified platform. Without real-time, context-aware decision support, agents remain burdened by disjointed tools, slowing resolutions and hindering scalable growth.

Brillio addressed this by designing an agentic AI-powered family of agents built on a platform-led architecture for payer operations. The solution combined contextual intent recognition through Kore.ai, task-based agents with shared context retrieval via cloud-native services and Redshift, and asynchronous parallel processing to reduce latency across multi-step workflows. HITL checkpoints were embedded for key decisions, while process-based agents operated across triage, case management, and compliance with full context continuity. The platform also incorporated orchestration, PEGA-based business process management, and customer- and operations-facing interfaces to support scale across functions.

This created a more connected operating model in which specialized agents could coordinate across tasks instead of operating in isolation. The result was faster support, stronger service precision, and a reusable orchestration framework that improved operational efficiency while creating a scalable foundation for broader payer transformation.

Business Impact

Improved user experience
and sentiment through faster, more intelligent support

~20%
year-over-year reduction in cost to serve

Improved process metrics
across case management, triage, and compliance operations

Increased operational efficiency
by automating repetitive, decision-heavy processes

ABOUT BRILLIO

Brillio is one of the fastest growing digital technology service providers and the partner of choice for many Fortune 1000 companies seeking to turn disruption into a competitive advantage through innovative digital adoption. We help clients harness the transformative potential of the four superpowers of technology: cloud computing, Internet of Things (IoT), artificial intelligence (AI) and mobility. Born digital in 2014, we apply our expertise in customer experience solutions, data analytics and AI, digital infrastructure and security, and platform and product engineering to help clients quickly innovate for growth, create digital products, build service platforms, and drive smarter, data-driven performance. With 17 locations across the U.S., the UK, Romania, Canada, Mexico, and India, our growing global workforce of nearly 6,000 Brillians blends the latest technology and design thinking with digital fluency to solve complex business problems and drive competitive differentiation for our clients. Brillio has been certified by Great Place to Work since 2021.

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