



Point of view

Ensuring robust agentic AI in contact centers through comprehensive process validation and quality assurance

Agentic AI, characterized by contextual awareness and adaptive decision-making, is transforming industries by enabling systems to act independently to achieve business goals. Unlike traditional AI, which follows predefined scripts, agentic AI leverages large language models (LLMs) and reasoning capabilities to dynamically adapt to complex environments.

This evolution introduces unique challenges in process validation and quality assurance (QA). Consider an example of positive validation: Each time a customer interacts with an agentic IVR, they may hear varying prompts. Traditional automation tools cannot assess or validate such a scenario, necessitating advanced frameworks to ensure reliability, safety and ethical compliance. This cannot be accomplished using traditional validation and test automation tools, platforms and approaches, especially within the contact center ecosystem.

Understanding agentic AI definition and characteristics

Agentic AI refers to systems that autonomously perceive environments, process information and execute actions to achieve objectives without constant human intervention. These systems integrate LLMs, enabling them to reason, learn from data and adapt dynamically. Key characteristics include autonomy, contextual understanding and continuous learning, distinguishing them from traditional rule-based AI.

Evolution from traditional AI to agentic AI

Traditional AI operates on fixed pathways, executing predefined scripts (e.g., rule-based chatbots). Agentic AI, however, uses LLMs to derive intelligent execution plans, selecting optimal actions based on real-time data. For example, in an e-commerce order system, traditional AI follows a hard-coded sequence, while agentic AI can adjust pricing or delivery schedules autonomously based on inventory and customer preferences. This evolution stems from advancements in generative AI and reinforcement learning, with global AI investment projected to reach \$250 billion by 2026.

Agentic AI is revolutionizing these sectors in the following ways:



Customer service:

AI agents manage inquiries, manage fraud alerts and personalize interactions, with 90% of businesses adopting AI-driven CX by 2026–27



Healthcare:

Multi-agent systems aid diagnostics, improving accuracy for rare cases



Manufacturing:

Agentic AI enhances quality control, reducing defects by up to 70% through real-time monitoring



Finance:

AI detects fraud and automates trading, with 90% of financial institutions investing in AI by 2027

Contact center evolution with agentic AI

The evolution of agentic AI in contact centers has transformed customer experience, efficiency and the role of human agents. Initially, contact centers used IVR systems and basic chats, which had limited capabilities and often led to customer frustration. Generative AI introduced advanced NLP and machine learning, enabling contact centers to oversee complex interactions more accurately. Agentic AI further advanced this by making autonomous decisions and taking actions based on real-time data, proactively predicting customer needs and enhancing overall experience.

Agentic AI has a lot of additional benefits such as:

Delivering customer service availability 24/7, addressing customer queries at any time and reducing wait times significantly

Maintaining a consistently high level of service quality to offer superior customer experience

Providing responses by analyzing tons of customer data, it can deliver highly personalized interactions, knowing customer history, preferences & behaviors

Automating repetitive tasks like call transcription after each call, data entry, CRM updates and next best actions, enhancing productivity of agents and reducing processing cost per contact

The future of agentic AI in contact centers will include even smarter analytics for understanding customer sentiments, predicting trends and ensuring quality control. Continued integration with other business systems and tools will further smooth operations and enhance customer satisfaction.

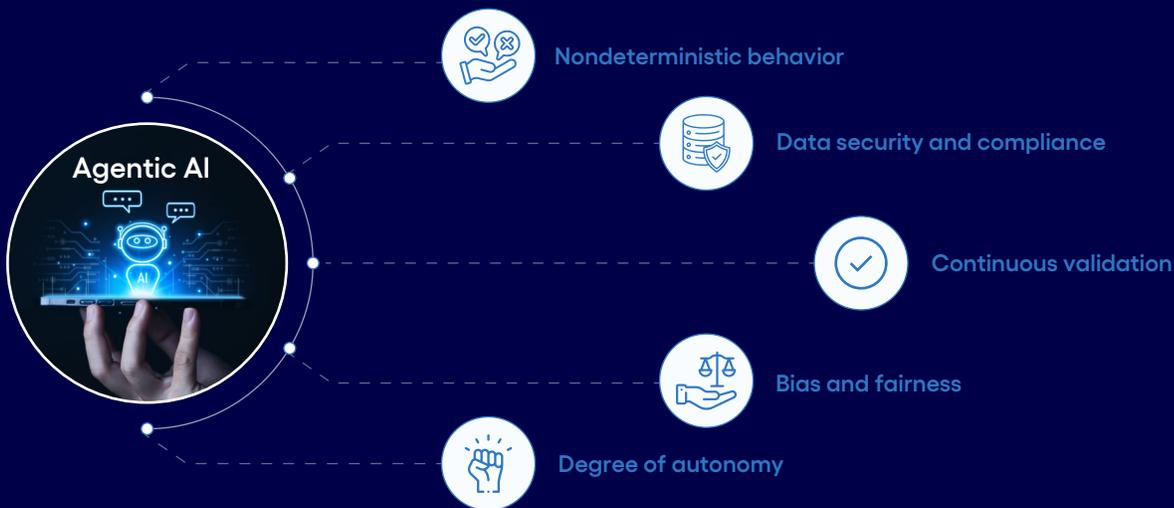


The critical role of quality assurance

Agentic AI actions must be validated for accuracy, quality and data security. Without proper validation, the AI might offer incorrect or irrelevant information, leading to agent inefficiency and customer frustration.

Contact centers deal with a wide range of customer queries and scenarios. Creating manual test scripts that cover all interactions can be complex and time-consuming. Hence automation is mandatory when it comes to the agentic AI validation.

Why is QA more complex for agentic AI?



Nondeterministic behavior

- AI systems can produce different outputs for the same input at different times
- The customer journey is different for each interaction
- This variability makes automation challenging compared to static responses in non-AI applications

Data security and compliance

- AI agents may inadvertently expose sensitive information due to weak input/output filtering
- If agents operate with elevated privileges or inherit user roles, attackers can exploit these to perform unauthorized operations
- Automated validation must ensure secure handling of customer data
- Compliance with data protection regulations adds complexity to the validation process

Continuous validation

- An AI customer support agent might respond differently to the same query based on recent interactions or updated knowledge bases, hence the system will have to be monitored and validated continuously
- Updating test scripts to match system changes demands significant time and resources

Bias and fairness

- AI systems should provide unbiased and equal responses to all users
- Automating validation to check for bias and fairness increases the complexity of the process

Degree of autonomy

- As agentic AI systems become more capable of independent reasoning and action, boundaries will be defined for the level of autonomy in agentic AI. It is crucial to validate it operates within the boundary of autonomy to ensure the systems operate safely, ethically and effectively

To tackle these challenges, we need a combination of advanced validation tools, continuous monitoring and a robust framework for managing and updating test scripts. Advanced validation tools can help automate the validation process, making it more efficient and comprehensive. Continuous monitoring helps spot issues in real time, enabling prompt corrective actions, which in turn minimizes downtime and ensures that the system remains reliable and effective. A robust framework for managing and updating test scripts keeps the validation process organized and effective, even as the AI feature evolves. It will also help to track and document results, making it easier to identify trends and areas for improvement.

By implementing these strategies, organizations can enhance the reliability, security and fairness of AI systems, leading to improved customer satisfaction and trust.

Risks of inadequate QA

Inadequate QA can lead to severe consequences:

Financial losses

A 2023 chatbot failure in a financial institution provided incorrect investment advice, costing \$10 million in losses and penalties

Reputational damage

Poor AI responses erode customer trust, with 64% of consumers less likely to engage with brands after a negative CX

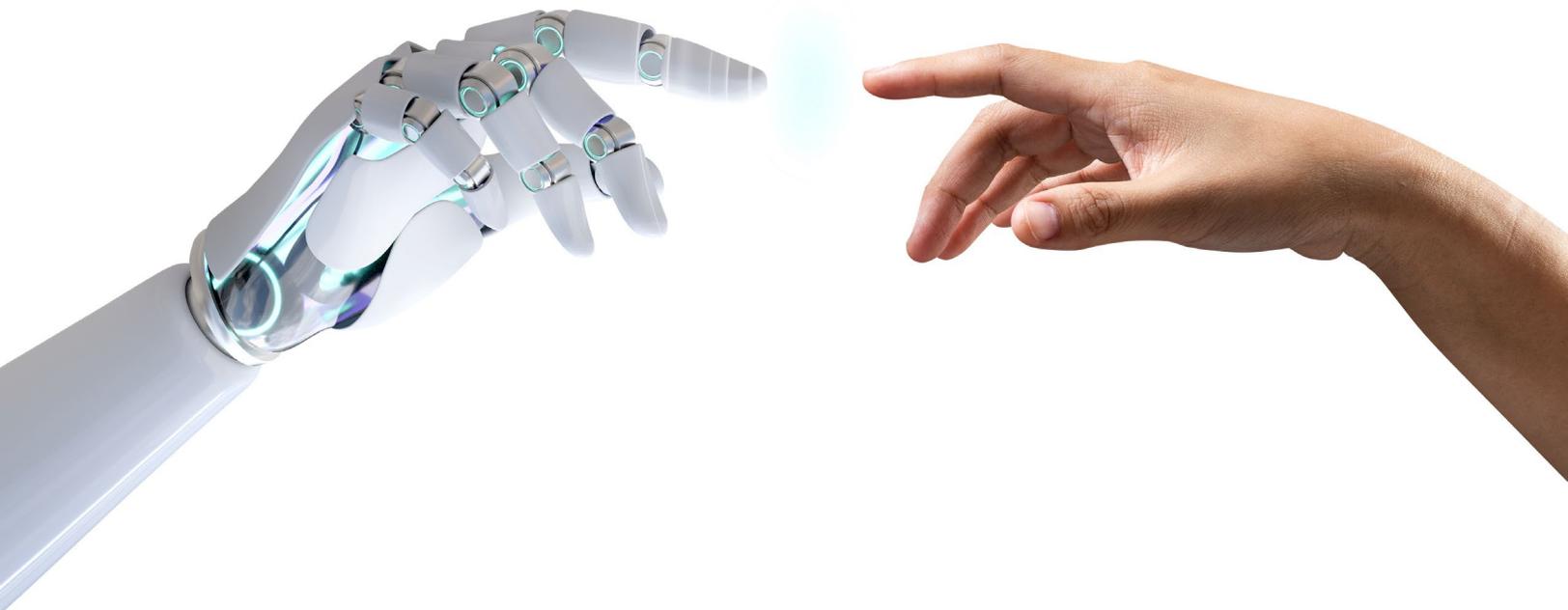
Ethical violations

Unchecked AI can produce biased or harmful outputs, with 30% of AI systems failing compliance checks due to insufficient validation

Examples of potential errors when AI is not trained and validated:

Consider a customer with a good financial record at Bank ABC but a poor credit score due to loan defaults at Bank XYZ. If the customer asks Bank ABC, "Can I get a loan? Am I eligible?" the AI agent might incorrectly respond "yes", based solely on the customer's record at Bank ABC, failing to consider the poor credit score.

Imagine a scenario where the bank updates its interest rates, but the AI agent isn't trained to retrieve the latest information. As a result, when a customer inquires about the current interest rates, AI would provide outdated data.



Functional validation for agentic AI

Functional validation for agentic AI focuses on verifying that the AI system performs its intended functions correctly and produces the expected outputs for given inputs, in line with its design and requirements. Agentic AI, characterized by its ability to act autonomously or semiautonomously, make decisions and adapt to dynamic environments, requires functional validation to ensure it behaves as intended across various scenarios. This involves validating the AI's decision-making, task execution and interaction capabilities to meet specific objectives, such as solving problems, completing tasks or interacting with users or systems.

Examples of functional validation for agentic AI:

Validating a chatbot to ensure it understands and responds correctly to user queries

Checking a recommendation system's ability to suggest relevant items based on user preferences

Functional validation validates agentic AI's ability to make autonomous decisions. Scenario-based validation simulates real-world interactions, such as customer queries or supply chain disruptions, to assess intent recognition and response accuracy.

Validating autonomy and decision-making

Functional validation evaluates an AI agent's ability to make contextually appropriate decisions. This involves validating goal-oriented behaviors, such as an AI scheduler optimizing meetings based on user preferences. Tests must measure decision accuracy and alignment with objectives.

Scenario-based validation and simulation

Simulations replicate real-world environments to validate AI responses. By implementing these strategies, organizations can enhance reliability, security, and fairness of the AI systems, leading to improved customer satisfaction and trust.

Nonfunctional validation for agentic AI

Nonfunctional validation ensures agentic AI handles high loads. It focuses on evaluating the performance, reliability, scalability, security and usability of AI systems designed to act autonomously or semiautonomously (i.e., agentic AI). Unlike functional validation, which verifies whether the AI produces correct outputs for given inputs, nonfunctional validation assesses the system's behavior under various conditions, ensuring it meets quality attributes beyond core functionality. For agentic AI, which can make decisions, adapt to environments and interact with users or other systems, nonfunctional validation ensures the system operates robustly, efficiently and safely in dynamic, real-world scenarios. Nonfunctional validation ensures that the system remains secure, robust, scalable and user-friendly in the real-world applications.

Challenges in validating agentic AI

Dynamic and unpredictable behavior

Challenge

Agentic AI systems often learn and adapt in real-time, leading to non-deterministic outputs that are hard to predict or replicate. This makes it difficult to establish consistent benchmarks for performance or reliability.

Adversarial robustness and security

Challenge

Agentic AI is vulnerable to adversarial attacks, such as manipulated inputs designed to trick the system, or data poisoning that corrupts its learning process. Validation for these requires anticipating malicious behavior.

Defining nonfunctional requirements

Challenge

Nonfunctional requirements (e.g., acceptable response time, scalability thresholds) are often vague or context-dependent for agentic AI, as they depend on the use case and user expectations.

Complex environments and interactions

Challenge

Agentic AI often operates in complex, multi-agent or real-world environments with numerous variables (e.g., user inputs, network conditions or external systems). Validating all interactions is impossible.

Cyara moves agentic AI from pilot to production for better CX

By 2029, **80% of customer service will run autonomously**, according to industry analysts. But today, **88% of AI projects are stuck in proof of concept**-not because the technology doesn't work, but because enterprises can't prove it's safe to deploy.

The problem: You can't script-test unpredictable agentic AI

Agentic AI doesn't follow scripts. It adapts, learns and makes decisions in real time. And traditional testing built for predictable IVRs can't keep up.

The risks are real: AI hallucinates answers, makes decisions without guardrails, shows bias, and breaks in ways you can't trace. One bad customer interaction goes viral. Regulatory fines follow. Your brand takes the hit.

Cyara's approach: AI-native CX assurance

Cyara is building the first AI-native CX assurance platform that uses AI agents to test AI agents. These test agents act like real customers, taking unpredictable journeys, switching between channels mid-conversation, asking multiple things at once. Cyara catches what traditional CX testing misses.

Dynamic behavior under pressure

Cyara verifies how your AI responds when customers digress, get frustrated or ask unexpected questions. These are the scenarios that break scripted tests but happen every day in production.

Accuracy and trust from day one

Cyara checks every AI response against your knowledge base, flags bias, verifies compliance and ensures brand alignment. The platform catches issues in preproduction, not in customer conversations.

The difference between “does it work?” and “will customers love it?”

Cyara shows you how your AI solves customers’ problems and delights them in the process — before they tell you on social media.

The path to production-ready agentic AI

Companies that succeed with agentic AI share a common approach: Test early, catch issues before customers encounter them and build stakeholder confidence with proof. Cyara gives you proof: AI systems customers trust and brands stand behind.

Conclusion

As agentic AI systems become more autonomous, adaptive and embedded across industries, the stakes for quality assurance, process validation and ethical oversight have never been higher. Traditional validation methods are no longer sufficient to validate systems that learn, reason and make decisions in dynamic environments. To build trustworthy and resilient agentic systems, organizations must embrace a holistic validation strategy—one that combines functional accuracy with nonfunctional assurance, ethical safeguards and continuous learning checks.



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