THE AI MATURITY MODEL FOR CONTACT CENTERS

An Evidence-Based Path to the Future of Automation

CRESCENDO

Crescendo's CEO on the Future of CX

Matt Price,
Founder and CEO

If you work in CX, you've heard and felt the last 18 months of AI noise.
Tools promising to transform the contact center have delivered, at best, limited automation.

At Crescendo, we see the breakdown every day. Companies are stuck running hybrid systems that can't adapt fast enough to changes in products, customers, or channels. The result is bolt-on bots that look smart in a demo but fail in production.

To navigate the new horizon, we need a credible, evidence-based framework for what AI maturity looks like in the contact center. Not theory. Not slogans. A shared language that operators, analysts, and executives can use to measure progress.

This model lays out what evolution looks like. It charts the path from legacy systems that react to AI-driven operations that self-tune in real time.

And, just as important, how the people inside CX operations evolve. Everyone assumes AI cuts jobs as automation takes on routine work. But we see increased demand as human agents transform into knowledge engineers — the ones who train, refine, and extend AI.

The opportunities for CX are stronger than they've been in decades. Across more than 500 AI deployments, we've seen an undeniable pattern: as maturity increases, service gets faster, empathy scales wider, and outcomes become more predictable.

It's time we build AI systems worthy of the customers we serve.

EXECUTIVE SUMMARY

Contact centers are in the hot zone of AI evolution.

As far back as 2013, Oxford researchers flagged customer service as one of the first jobs likely to be reshaped by automation. A decade later, McKinsey says that generative AI has “arrived in the contact center in a big way.”

It makes sense. No other function handles more customer interactions or produces more measurable outcomes. When AI delivers for contact centers, the result is shorter handle times, higher CSAT, lower cost per contact, and sharper decisions made in real time.

But despite trillions in investment, most AI projects are doing little more than contributing to **CX Waste** — that is, activity without outcomes. 8-18 month deployments, bloated systems that don’t scale, and dashboards that give CX leaders data but not direction. The now-famous MIT report found that 95% of enterprise AI initiatives have failed to reach full deployment. More optimistic research, like a 2025 Columbia University field study, showed measurable value in only five of seven generative-AI deployments, and even then, the impact was a modest $5 in annual value per customer. The performance gap isn’t vision; it’s integration.

1. A key source of inspiration comes from autonomous driving. In the early 2010s, Waymo and its research partners introduced a five-level maturity model that defined the stages from driver assistance to full autonomy. The framework gave automakers and regulators a shared language to track progress and set safety standards, turning what was once abstract innovation into targeted development.

The questions remain:

How can CX leaders get an honest picture of where they are in the AI journey?

How can teams move up levels without waste, risk, or rework?

To find answers, we looked at how other industries mapped their maturity curves.[1]

Transformation follows a pattern: early promise, uneven progress, and eventually a turning point where maturity becomes measurable.

CX is ready to take the next step.

In this paper, we define four levels of AI maturity in the contact center, a framework CX leaders can use to see where they stand and what it takes to move forward.

LEVEL 1 Workflow	LEVEL 2 AI Bolt-On	LEVEL 3 AI-Native	LEVEL 4 AI-Driven
Operations rely almost entirely on human agents. Automation handles less than 5% of total volume and typically spans only one or two channels. Data lives in silos, making every customer interaction reactive and labor-intensive.	Basic chatbots or automation are bolted onto legacy workflows. Efficiency improves in pockets, but experiences remain fragmented and hard to scale. AI sits at the edge, not at the core.	AI is embedded end-to-end, orchestrating interactions across channels in real time. Agents and AI operate as one system, with dynamic routing, multimodal handoffs, and continuous improvement driving measurable gains.	The contact center becomes self-optimizing. AI not only manages customer journeys but tunes operations — forecasting demand, staffing intelligently, and evolving policies without manual input. Humans move from fulfillment to strategic design.

AI transformation has shifted from theory to the greatest untapped opportunity in CX. The companies that close the AI performance gap first will set the new standard for satisfaction, efficiency, and growth.

This whitepaper gives CX leaders a clear, evidence-based path to the future of AI-powered contact centers.

The AI Performance Gap in Contact Centers

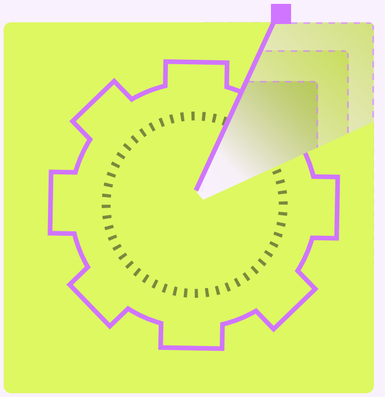
Global AI spending is expected to pass $1.5 trillion in 2025, according to Gartner, reflecting a decade of advances in automation, language models, and data infrastructure. But most operations still run like they did years ago, raising the question: Why hasn't AI transformed contact centers at scale?

CX teams have seen pilots, proofs of concept, and vendor promises. AI models have advanced rapidly, evolving from rule-based automation to large language models capable of contextual reasoning in real time.

Still, **CX Waste** is everywhere: the time, opportunity, and cost lost to projects that deliver features and labor instead of outcomes.

Boston Consulting Group reports that 74% of companies are struggling to achieve and scale value with AI, while Gartner predicts that half of companies pursuing "agent-less" CX will abandon those efforts by 2027.

We call this divide the AI Performance Gap — the distance between automation potential and operational reality.



74%

of companies are struggling to achieve and scale value with AI

Boston Consulting Group

What's behind the gap?

Research and field data point to four core barriers that prevent AI from reaching its full potential in CX:

Legacy Service Models

Contact centers were built for human scale, not machine learning. Traditional BPO and staffing structures depend on headcount to drive capacity. Without feedback loops that feed AI, performance gains plateau, and every improvement must be earned manually. Leaders are working to modernize a model that never designed for continuous learning.

Infrastructure Friction

Even when strategy is sound, infrastructure often isn't. Legacy CRMs, siloed data, and brittle integrations keep AI operating in isolation. Without shared architecture or unified context, models can't optimize performance across channels or customers — they simply react to inputs.

Fragmented AI Adoption

The first wave of AI in CX was tactical, not transformational. Chatbots, summarization tools, and ticket deflection systems promised efficiency, but each lived in its own silo. These disconnected wins made local workflows faster but global operations more complex.

Industry Overload

The explosion of "AI-powered" tools has outpaced the enterprise's ability to assess and operationalize them. Leaders face a crowded ecosystem promising transformation, but most solutions deliver isolated efficiency instead of systemic improvement.

Look closely, and a common pattern emerges:

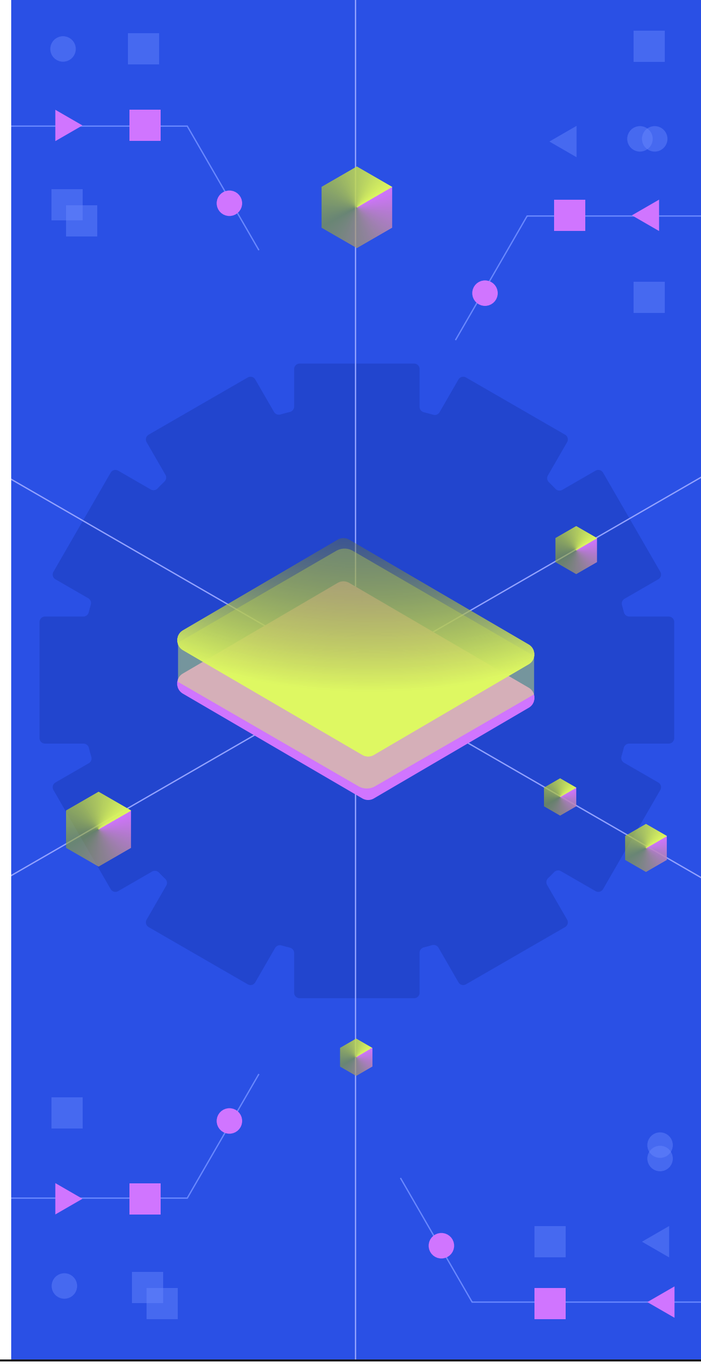
AI has been deployed at the edges of contact center operations, not built into their foundation. Technology has outpaced architecture.

And customers aren't willing to wait for better CX solutions. As Qualtrics noted in its 2026 Consumer Experience Trends report, AI breakdowns have led to "eroding trust among many customers," and more than half now miss the human connection.

From fragmentation to framework

Bridging the AI divide requires more than another round of innovation. It requires a shared framework for understanding progress and linking every investment back to outcomes.

In adjacent technology transformations, maturity models have helped organizations benchmark where they are, identify what's blocking them, and chart a path toward full capability adoption. The same clarity is now needed in CX.



The Four Levels of AI Maturity

The Contact Center AI Maturity Model helps CX leaders see where their organization stands today and what it will take to advance. Each level reflects a distinct operational mindset, not just a technology stack. When people, processes, and systems evolve together, the customer experience becomes more integrated and adaptive.

LEVEL 1

Workflow

LEVEL 2

AI Bolt-On

LEVEL 3

AI-Native

LEVEL 4

AI-Driven

Use this model to:

- **Identify your current level.** Assess where automation, data, and human expertise intersect in your operation today.
- **Define next-stage priorities.** Each level outlines the capabilities that unlock the next tier of performance.
- **Plan your trajectory.** Maturity isn't linear. Many organizations move multiple levels at once by upgrading architecture, data strategy, and governance in parallel.

LEVEL 1

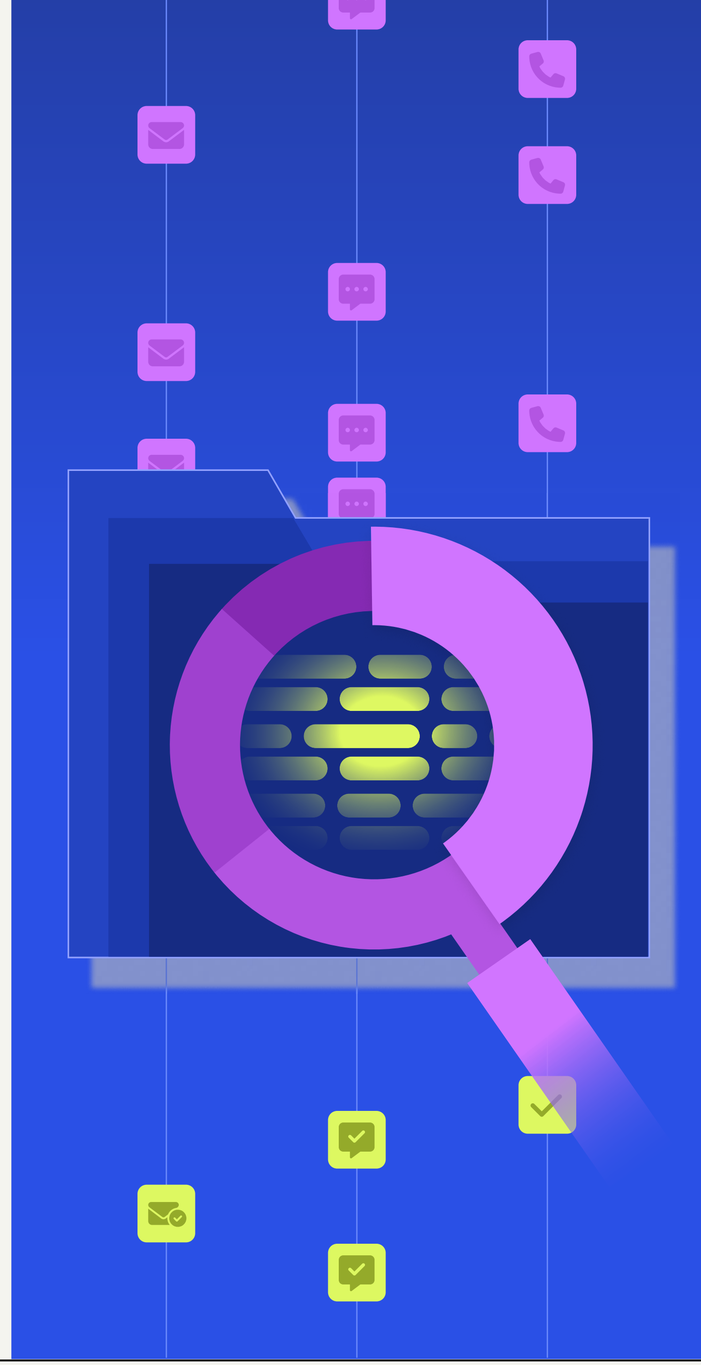
Workflow

Inside a Level 1 contact center

A national retail brand manages 1.2 million inquiries a year with a 200-person team, almost entirely by hand. Agents juggle five systems: CRM, ticketing, email, and two chat tools.

AI exists, technically: a chatbot that answers store-hours questions and a search bot that misfired during last year's holiday rush, confusing return policies and spiking complaints. The pilot was shelved after the vendor missed deadlines and the CTO lost confidence.

Every improvement still depends on hiring or overtime. Leaders know automation could help, but they're stretched thin and reluctant to break what works."We can't risk CSAT dropping while we experiment," is now the standing order.



What Level 1 looks like

Most work still depends on people and process, with minimal automation and limited optimization loops. Common characteristics include:

- Work is handled almost entirely by people; automation covers less than 5% of total volume.
- Improvement depends on adding headcount or hours.
- Agents rely on experience and repetition rather than shared data.
- Budgets grow faster than performance, with more cost tied to effort than outcomes.
- Information lives in silos — CRM, email, chat — making context hard to track.
- The contact center reacts to customer problems with little ability to anticipate needs.
- Service quality is inconsistent; customers have to put in extra effort to get problems resolved.

At Level 1, operational metrics dominate, with a focus on handle time, occupancy, and headcount. Learning metrics such as containment rate, self-resolution accuracy, or training reuse barely register. And AI-driven or system-level learning metrics aren't in play yet.

Breaking point

As volume grows, costs scale linearly. Each new product, language, or channel adds complexity without adding intelligence. Even top-performing teams hit a ceiling, trapped in a cycle of heroic effort instead of structural improvement. When teams can't keep up with demand, customer retention erodes.

The shift forward

Move from human effort to human-informed data.
Capture what your best agents already know, and use it to instruct the AI. This turns institutional knowledge into intelligence.

Beyond Level 1, progress comes from making work easier to standardize and share. As teams document processes and unify context across channels, automation begins taking on simple tasks. Leaders shift from "just keep up" to "let's make this run smoother," unifying basic data, cleaning up policies, and creating the building blocks for sharper orchestration.

With clearer inputs and fewer one-off workflows, teams stop depending on heroics and start building a system that can support the work.

OUTCOMES OF AI

Automation Coverage	CSAT Impact
Local efficiency gains; limited integration	Flat or slightly negative
Cost Change	**CX Waste**
No measurable ROI	Activity without outcomes

Check your signals

- What knowledge could be documented or standardized to prepare for automation?
- How much time do your agents spend searching for information rather than resolving issues?
- Are customer interactions managed by channel instead of a unified platform? If so, does this consume noticeable maintenance time or create recurring errors?
- What existing data could be unified to create a single view across two or more channels?
- Do you have the data and documentation that an AI system would rely on, or is critical knowledge still trapped in people's heads?

LEVEL 2

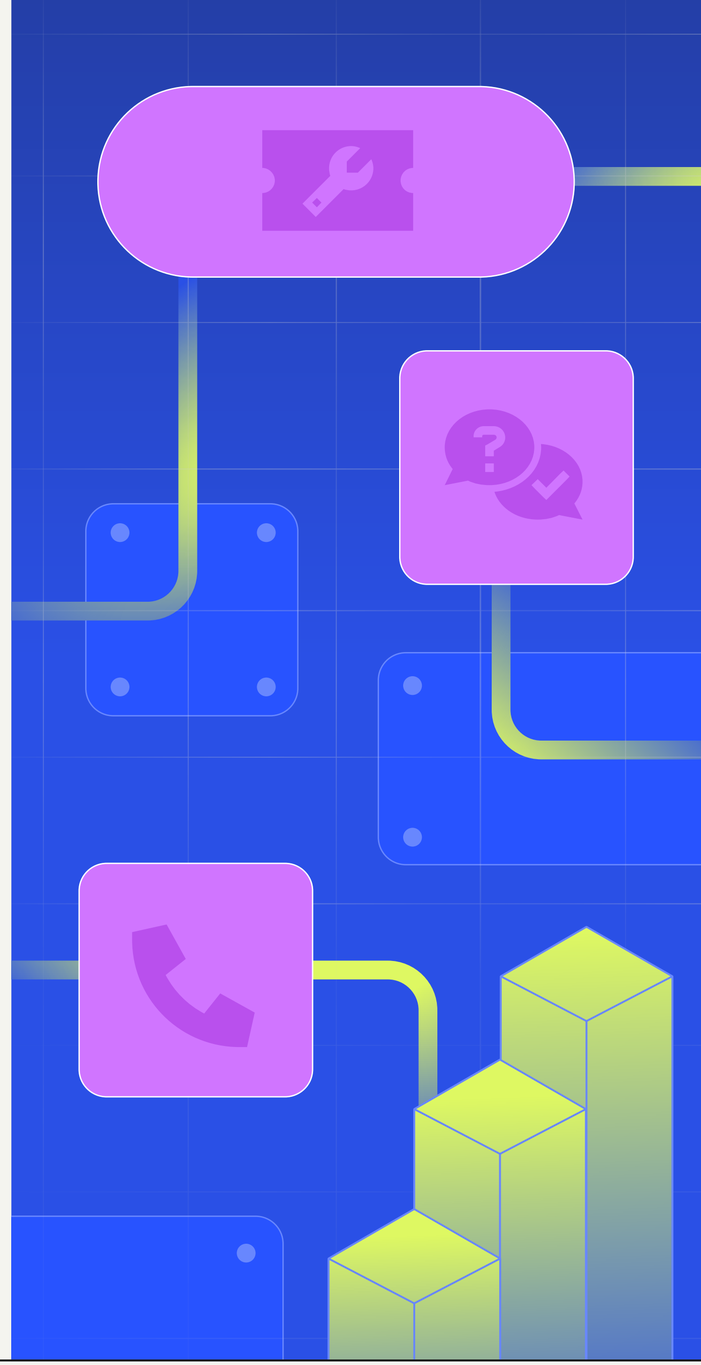
AI Bolt-On

Inside a Level 2 contact center

A national healthcare network manages millions of patient and provider requests each month, covering everything from appointment scheduling to claims status and prescription refills.

In the past year, the company has invested heavily in “AI for efficiency.” A chatbot now handles basic appointment questions, an AI summarization tool drafts clinical call notes, and a sentiment tracker flags patient frustration for supervisors.

Each tool works as promised, but none connect. Agents still toggle between EHR, billing, and scheduling systems to verify coverage or update records. A vendor upgrade broke an integration last quarter, and QA is still reconciling duplicate tickets. Leaders report, “We’ve automated 20% of inbound call volume,” but day to day, it still feels like a manual system surrounded by spikes of automation.



What Level 2 looks like

At this stage, AI is active but disconnected. Each tool improves a slice of the process, creating local gains, but fragmentation limits impact. Common traits include:

- AI exists but remains limited to bolt-ons within existing systems and workflows.
- Automation covers roughly 10-30% of total volume, primarily through rule-based bots and self-service tools.
- Human agents have access to AI-assist tools and automation workflows.
    - Each channel runs on its own technology stack, duplicating data and creating friction for agents and customers.
    - Any system change requires IT support or vendor intervention.
    - Local efficiency gains are offset by inconsistent experiences and fragmented reporting across channels.
    - Investments multiply while impact stays flat; every new tool adds cost and complexity without scaling performance.

At Level 2, metrics remain fragmented across channels. Chatbots track containment, voice reports handle time, and email measures response speed. Without a unified view, leaders see local efficiency but no consolidated performance impact.

Waste amplified

Counterintuitively, at this level, CX Waste often grows rather than shrinks. Each new AI tool introduces separate configuration, training, and oversight requirements. Data fragments across platforms, increasing reconciliation and reporting time. Administrative effort rises as teams manage vendors and maintain parallel workflows. Despite higher spend, gains remain localized and difficult to scale, leaving efficiency and customer satisfaction largely unchanged.

OUTCOMES OF AI

Automation Coverage	CSAT Impact
Local efficiency gains; limited integration	Minor improvements offset by inconsistency
Cost Change	**CX Waste**
Higher spend from tool overlap and admin load	More tools, same outcomes

The move to integration

The next leap isn't achieved with "more AI." It comes from connected AI.

This means unifying data models, simplifying handoffs, and creating shared context across channels. Integration turns isolated tools into a single optimizing system, where every interaction improves accuracy and speed instead of adding new complexity.

Human roles evolve, too. Less time is spent fixing brittle workflows or patching integrations, giving teams more time to shape the data and design that automation depends on. Metrics shift from channel efficiency to journey-level outcomes, giving leaders a clearer view of what customers experience. This is where the operation starts moving in one direction instead of fighting channel by channel.

Check your signals

- Is automation reducing workload in pockets but failing to impact the full operation? Is your reported automation rate based on a small portion of total volume?
- Do customers get different experiences by channel (fast in chat, slow on the phone)?
- When systems update, does the result feel like rework instead of progress?
- Are strategy conversations still centered on tools, not architecture?
- Are all channels drawing from the same policies, data, and decision logic? Or does each tool operate independently?

LEVEL 3

AI-Native

Inside a Level 3 contact center

A leading online learning company supports thousands of learners worldwide through an AI-native contact center that blends automation and human expertise in one system. Every conversation, policy, and transcript lives inside a unified workspace, giving both a gents and AI access to the same context in real time.

AI now resolves the majority of routine requests — enrollment issues, password resets, and refund checks — instantly, while complex cases reach human experts with full history preserved. Each interaction feeds back into the system, improving accuracy and speed without manual tuning.

Leaders describe the difference as structural, not incremental. But it wasn't friction-free. Agents had to unlearn old workflows, leaders re-scored KPIs to match hybrid performance, and knowledge cleanup took longer than planned. But once trust in the system caught up, improvements compounded.

Handle times have dropped sharply, CSAT has climbed, and operational planning now runs on data that updates itself.

What Level 3 looks like

This level marks the shift from execution to intelligence. Human agents and automation share context, data, and goals — a foundation where every resolved interaction strengthens the next. Defining features include:

- AI runs natively within core platforms, orchestrating interactions across channels rather than layering on top of them.
- Automation resolves 30-70% of total volume, with accuracy improving through continuous optimization.
- Human and AI teams share one workspace, with unified context, conversation history, and handoff logic.
  - Every resolved interaction automatically updates the underlying data, prompts, and policy flows.
  - No manual retraining required.

At Level 3, performance metrics mature beyond operational tracking to capture continuous learning and experience. CSAT, customer-effort score, and containment rate sit alongside improvement velocity and model accuracy.

Momentum stage

Once AI and people share a unified system, progress accelerates. Optimization loops close automatically, and each step forward amplifies the next. Improvements arrive faster, cost less, and deliver greater impact with every iteration.

The road ahead

The future of CX will be built on systems that self-govern.

As AI begins to predict, plan, and act across every channel, the contact center transforms into an adaptive network. Picture a CX infrastructure that forecasts volume, anticipates issues, and recommends operational adjustments before they're needed. That's the AI-driven opportunity.

At Level 3, the AI Performance Gap closes. Automation manages the routine flow of work with near-perfect instructional accuracy, while people supervise outcomes instead of individual transactions. Journeys stay consistent because routing, policies, and responses adjust in real time. Humans are forward deployed, expanding into work that strengthens the system rather than patching what's broken.

The result is an operation that stays ahead of demand, with the intelligence to improve itself as volume, customers, and products evolve.

OUTCOMES OF AI

Automation Coverage	CSAT Impact
End-to-end orchestration across channels	Consistent, context-aware experiences
Cost Change	**CX Waste**
Lower cost per contact through automation and optimization	Compounding gains; waste in decline

Check your signals

- Do your agents and AI share one continuous view of the customer?
- Do you track performance for individual customer journeys (e.g., refunds, renewals, billing changes)?
- Does your system automatically update and improve its responses as new interactions are resolved?
- Are you able to launch new use cases at the pace your business needs? Do you experience friction or delays when moving new use cases into production?
- What percentage of your time is spent on break-fix work versus optimization?

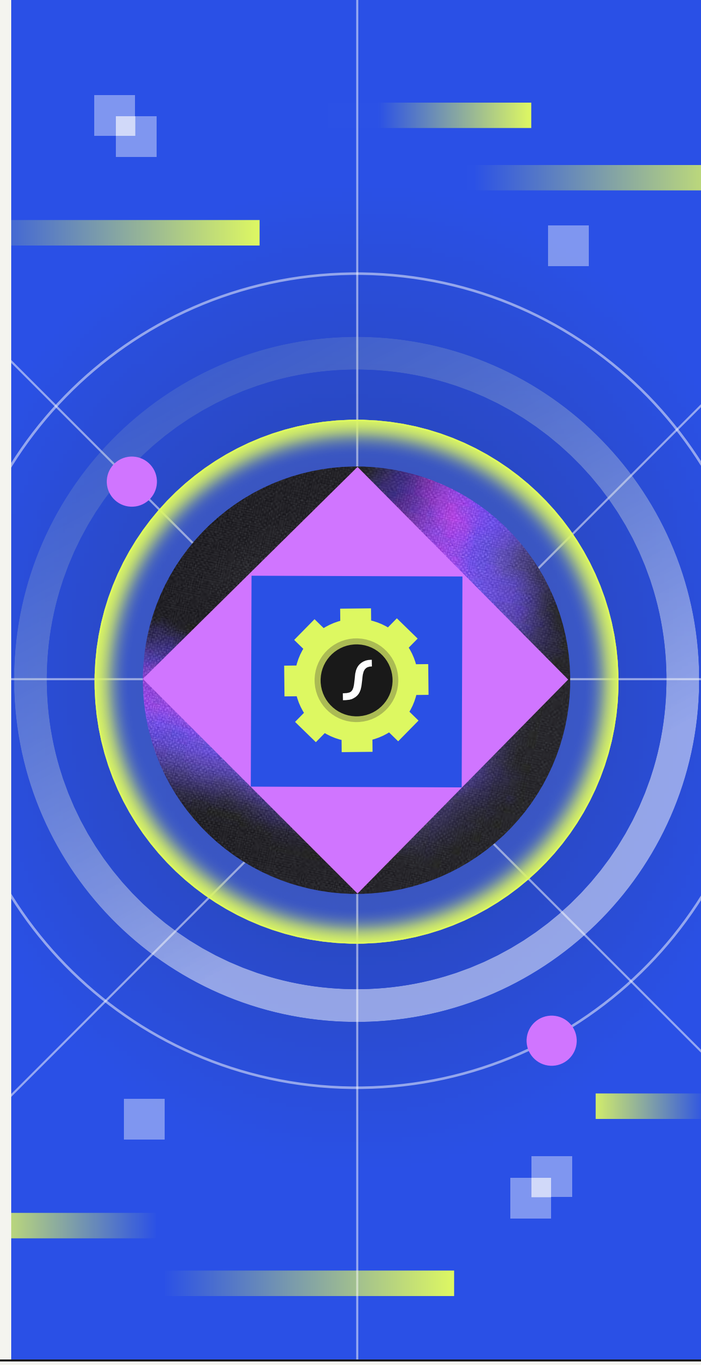
LEVEL 4

AI-Driven

Inside a Level 4 contact center

An enterprise apparel brand illustrates what's next. Behind the scenes, AI monitors live performance data — satisfaction, handle time, forecasted demand — and adjusts staffing and routing in real time. The system predicts order surges, refines responses within hours, and gives product teams real-time insight into what customers love.

Human teams no longer manage tickets; they manage intelligence. Leaders focus on governance, design, and experience quality, defining how AI serves both customers and the brand. The result is the full realization of AI maturity: a self-optimizing operation where every interaction, decision, and outcome builds toward profitability and growth.



What Level 4 looks like

The shift from AI-assisted operations to autonomy is still early, but already underway. Over the next five to ten years, leading systems will learn to manage outcomes across channels with little to no manual intervention. The contact center of the future features:

- AI orchestrates CX and operations across every channel and mode, forecasting volume, tuning staffing, and optimizing policies based on live data.
- Optimization is continuous. Every resolved interaction improves not only customer journeys but also internal workflows such as routing, scheduling, and QA.
- Humans shift from responders to designers, focusing on strategy, governance, and experience quality rather than manual execution.
- Data moves freely across systems, giving AI full situational awareness to make decisions autonomously and support human teams in real time.

At Level 4, contact centers track how accurately AI forecasts demand, how quickly it adapts to change, and how each adjustment impacts cost, satisfaction, and loyalty. Real-time visibility gives leaders a live view of outcomes across every channel and function.

LEVEL 4: AI-DRIVEN

The rise of knowledge engineers

The people who once answered tickets now train and tune the systems that do. These “knowledge engineers” review transcripts to identify new types of customer requests, write and test AI instructions, and decide which interactions should stay human. They translate brand voice into prompts, map exceptions that automation can’t handle, and make sure customer empathy is built into every policy update.

The payoff is broader-impact work for teams, faster optimization for systems, and customer experiences that stay accurate and on-brand.

OUTCOMES OF AI

Automation Coverage	CSAT Impact
End-to-end orchestration with continuous human oversight	Highly consistent experience, punctuated with empathy
Cost Change	**CX Waste**
Structural efficiency drives broad savings	Spend tightly linked to outcomes

Future signals

Level 4 is an operating model, not an endpoint. Where people-powered CX fights to keep pace, Level 4 companies move in sync with change.

AI becomes the sensor, the engine, and the feedback loop that keeps them ahead.

CX as a Value Layer

At higher levels of AI maturity, customer experience stops being a cost to manage and becomes a source of business advantage. When every interaction feeds automatic improvements and every system aligns to outcomes, CX becomes a value layer that strengthens the entire organization.

And the results are measurable. According to BCG's report "Where's the Value in AI?," companies classified as "AI leaders" have achieved 50 percent higher revenue growth, 60 percent higher total shareholder returns, and 40 percent higher returns on invested capital than their peers. In other words, when AI maturity drives outcomes, the whole business performs better.

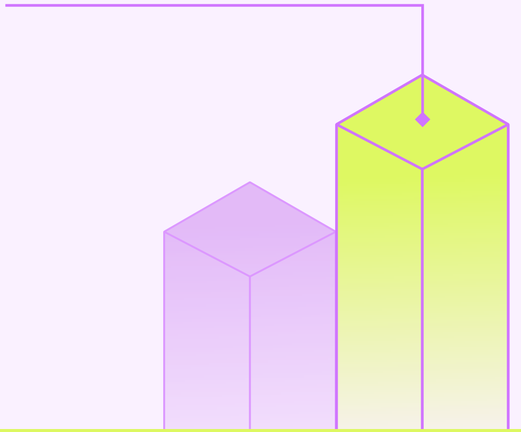
Industry leaders have long understood the link between service and performance.

Former American Express CEO Ken Chenault put it plainly in a recent Crescendo event: "Most competitors wouldn't sustainably invest in customer service. They'd cut it to make the numbers. At American Express, we invested in service over the short, moderate, and long term. We poured it in." During Chenault's tenure, Amex delivered 129% total shareholder returns.

AI maturity offers the same advantage at scale, turning customer experience into a lasting source of growth and competitive strength.

50%

higher revenue growth achieved by AI Leaders



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Ken Chenault
Former CEO,
American Express

From Framework to Reality

AI has reshaped what's possible in customer experience. What remains unresolved is how quickly organizations turn that potential into performance.

The AI performance gap stands in the way of scalable CX. It forms when teams layer tools onto systems built for another era, rather than redesigning CX around intelligence, shared context, and human-AI alignment. The difference shows up fast: in speed, consistency, cost, and customer trust.

Closing the AI performance gap doesn't require more tools. It requires clarity on where systems break, where intelligence compounds, and where human expertise creates leverage.

This maturity model is not a checklist or a timeline. It's a lens. One that explains why progress stalls, where waste creeps in, and what actually moves the operation forward. It explains why more AI doesn't always produce better experiences, and why the right foundation changes everything.

Across hundreds of real-world deployments, the pattern is consistent:

When AI is built into the core of CX, outcomes compound, and the teams finally get out of reaction mode.

The standard for customer experience is being reset. The leaders who recognize that shift, and act on it, will define what comes next.

Visit crescendo.ai to learn more about AI-native CX.

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