

Reinvent Customer Service With Multi-Agent AI

Whitepaper (May 2025)

Executive Summary

Customer **service** is being fundamentally reshaped.

Large Language Models (LLMs) with advanced reasoning capabilities and sharply declining inference costs have moved AI from simple chatbots into full production-ready **AI Agents**.

Organizations deploying AI Agents see:

-  30–50% reductions in total service costs
-  Average Handling Times (AHT) drops of 20–30% within weeks
-  Process change cycles reduced from months to days
-  Compliance readiness aligned to GDPR and the EU AI Act

This paper explains why enterprises must move beyond AI Assistants and embrace full AI Agent orchestration to stay competitive, and how they can achieve fast, safe adoption in **less than 90 days**.

1. Introduction and Market Landscape

1.1. The Next Phase of Customer Service Evolution

Artificial Intelligence (AI) is no longer a futuristic add-on and it is now essential for delivering faster, higher-quality, and more efficient service.

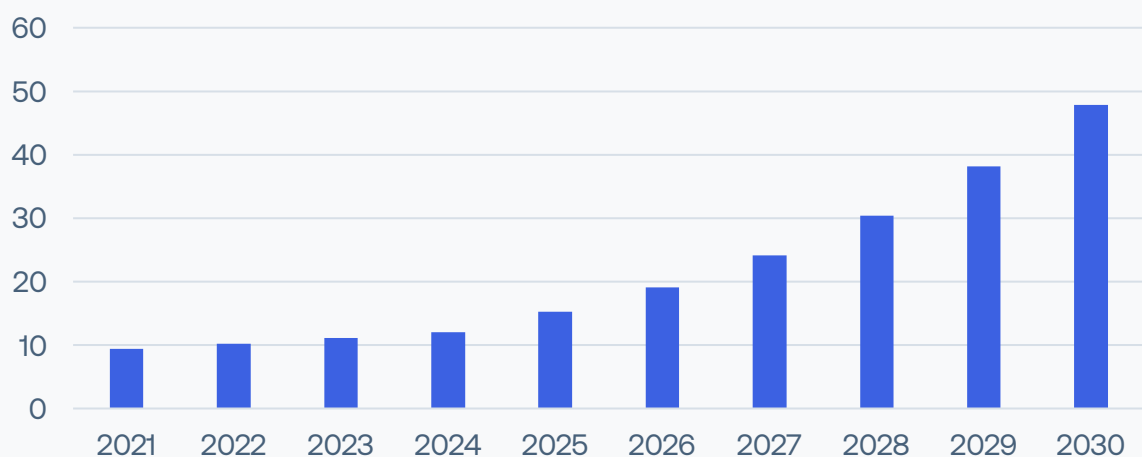
While many companies have piloted chatbots or drafting tools, the real breakthrough lies in **AI Agents**: autonomous systems capable of **classifying inquiries, deciding actions, interacting with systems, and communicating with customers** without step-by-step human guidance.

AI Officers, CTOs, and CIOs, providing real-world data and frameworks to drive strategic decision-making.

1.2. Growing Market and Investment

The global AI market for customer service is projected to reach USD 47.8 billion by 2030, rising from USD 12.1 billion in 2024 (MarketsandMarkets, 2025 [1]). Europe alone has pledged over 100 billion Euros in AI research funding, reflecting strong public and private sector commitments to advancing enterprise AI adoption.

AI in Customer Service Market Size (USD bn)

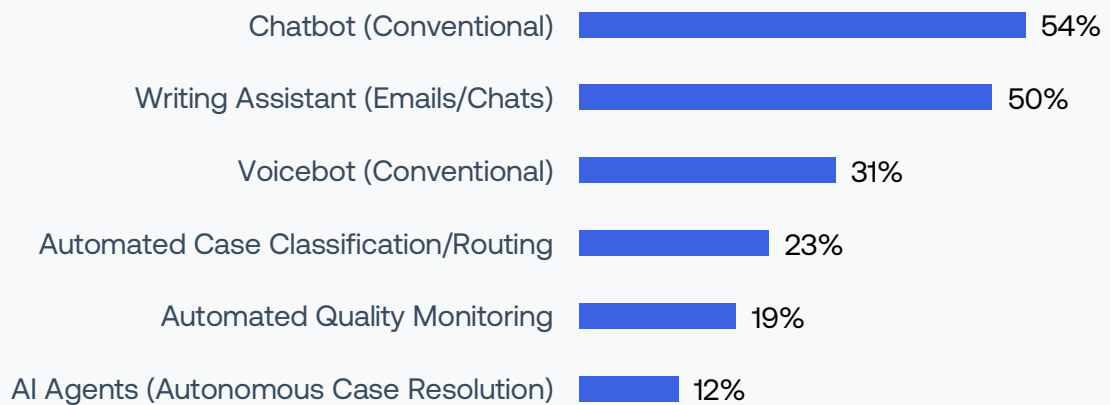


Source: MarketsandMarkets, 2025

1.3. Enterprise Adoption Trends

According to Gartner (2024, [2]), 60% of customer service leaders report feeling pressured to integrate AI into their operations to enhance efficiency and service quality. However, AI adoption varies widely across organizations. In February 2025, we conducted a survey among 26 customer service executives at Call Center World (CCW) Berlin [3], highlighting key adoption trends:

AI in Customer Service Market Size



Source: Typewise, 2025

Despite increasing investment and AI advancements, many enterprises remain cautious, preferring to start with AI Assistants before transitioning to AI Agents for full-scale automation. The data highlights a growing but gradual shift toward more advanced AI-driven service models.

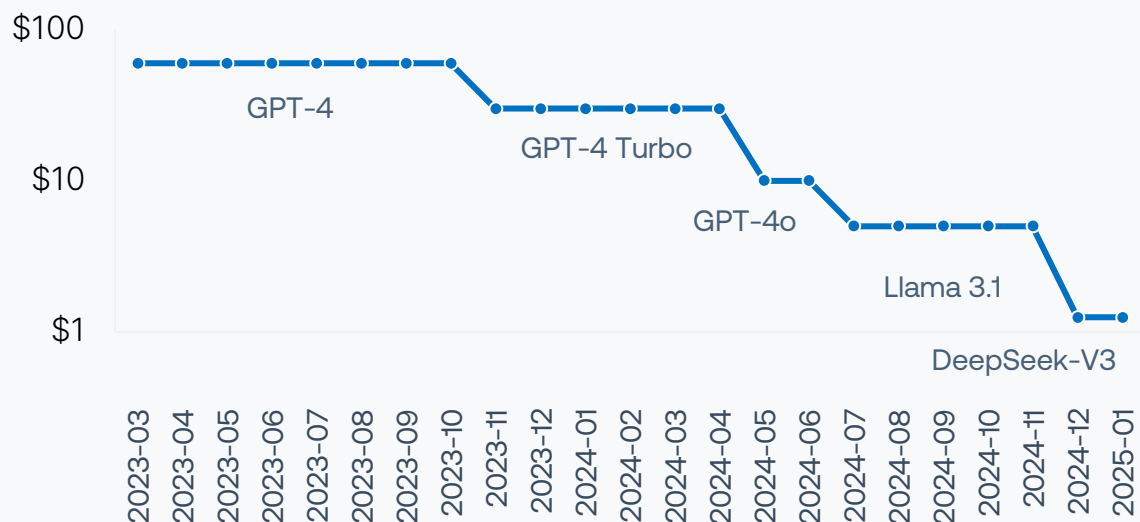
2. The Rise of AI Agents

2.1. The Shift in Enterprise AI

Enterprises once limited by high costs or limited AI capabilities are now rapidly exploring more powerful AI-enabled tools. This shift has been accelerated by:

- **Increasingly sophisticated Large Language Models (LLMs)** with multi-step reasoning abilities.
- **Lower inference costs** for training and running AI models, with expenses declining nearly 10x per year (SemiAnalysis, 2025 [4]).
- **Growing comfort with automation**, as early chatbot deployments have paved the way for more advanced AI-driven processes.

Decreasing Inference Cost



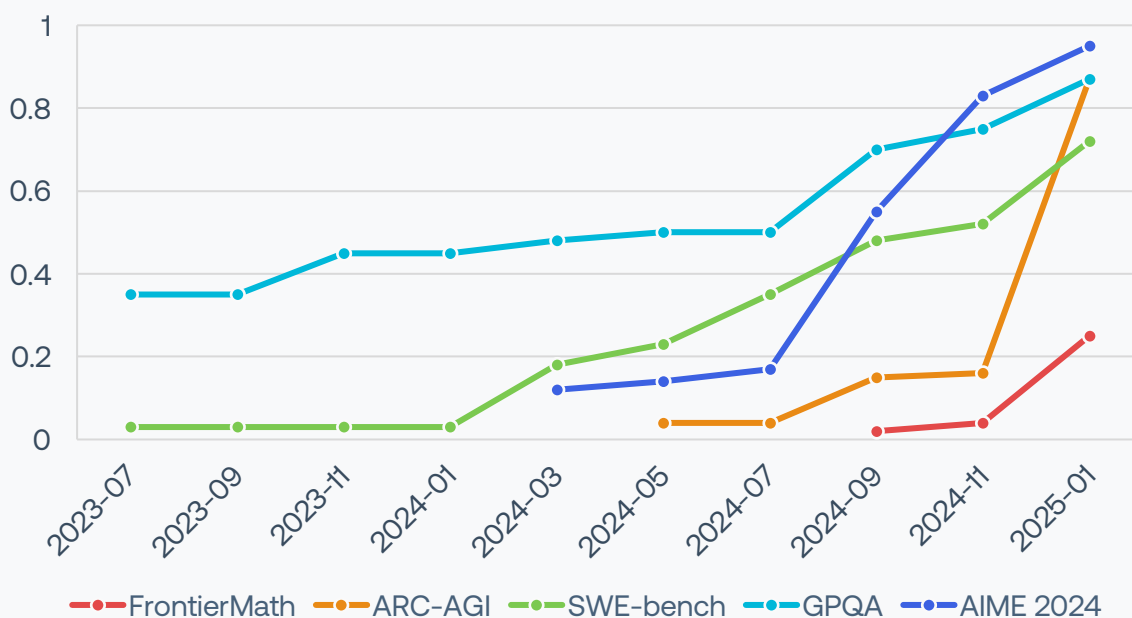
Source: SemiAnalysis, 2025

2.2. Evolution and Accessibility of AI

The new reasoning models such as OpenAI's o3 no longer simply predict the next word. Rather they execute **multi-step reasoning workflows** by chaining logic prompts and integrating tool use.

Since Q4 2024, **reasoning-enhanced LLMs have made dramatic leaps across key benchmarks**. The AIME 2024 scores surged from ~0.15 to 0.95, ARC-AGI from 0.05 to 0.85, and SWE-bench from 0.18 to 0.72 (GOV.UK, 2025 [5]. These models are not just larger chat engines; they're trained with chain-of-thought prompting and structured tool-handling, enabling them to break down and complete complex, multi-step tasks. In practice, this means **AI Agents can now autonomously execute full workflows**, such as “validate warranty, retrieve purchase history”, with a level of precision and flexibility that was out of reach just six months ago.

Evolution of Reasoning Models



Source: GOV.UK, 2025

As a result, these reasoning models excel in:

- **Contextual understanding:** Interpreting nuanced requests across channels
- **Dynamic adaptability:** Adjusting in real time based on updated instructions
- **Scalability:** Seamlessly integrating with CRMs, ERPs, and knowledge bases to retrieve and update data across systems

This evolution has made AI more **accessible** to businesses of all sizes, provided they have the right approach to integration, compliance, and process optimization.

3. AI Assistants vs. AI Agents

Today, many organizations rely on AI Assistants to support human agents with drafting, translation, or data retrieval.

AI Agents go further: independently classifying cases, retrieving and writing to systems, deciding on next actions, and communicating with customers with minimal human supervision.

	AI Assistant	AI Agent
Scope	Draft reply, retrieve info	Classify, decide, act, reply
Autonomy	Human-on-the-loop	Human-on-the-loop (i.e. handover when required)
Typical ROI	1-2 months	3-6 months

3.1. AI Assistants

AI Assistants support human agents by:

- Suggesting draft responses
- Auto-filling data from a knowledge base
- Adhering to brand style and tone
- Allowing multi-lingual communication through translation

Key Impact: Many organizations observe **Average Handling Time (AHT) reductions** in the range of 20-30% using AI Assistants, as the assistant handles repetitive drafting tasks.

 dpd Switzerland

DPD Switzerland successfully deployed AI-powered writing assistants, leading to 20–30% reductions in handling times for customer service agents. The AI provided sentence suggestions, spell checking, and real-time access to a multilingual knowledge base, improving both efficiency and response quality. The smooth integration was supported by training the AI on historical customer communications, which ensured high adoption rates among agents.

Beyond improving productivity, this AI Assistant implementation also revealed valuable insights into ticket categories that required minimal human intervention, paving the way for the future deployment of AI Agents to automate repetitive tasks such as updating shipment information and generating return labels. (Source: CCW 2025, [6])

*“The implementation Typewise led to an average time **saving of 20 to 30% in customer service**. The integration went smoothly, and acceptance was high as the AI was trained with historical customer communications and multilingualism was successfully mastered.”*

Joshua Martić, DPD Switzerland

3.2. AI Agents

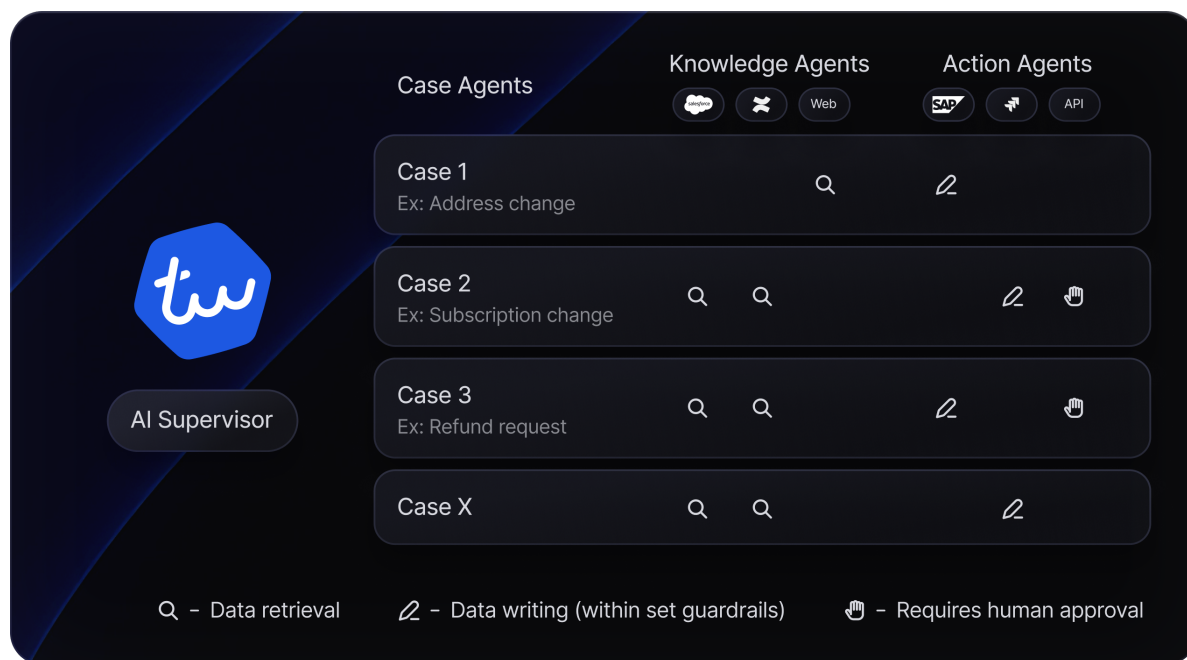
AI Agents take automation to the next level by independently managing entire workflows with minimal human intervention. Unlike AI Assistants that support agents, AI Agents can classify customer inquiries, retrieve relevant data from external systems, execute actions within CRMs and ERPs, and communicate directly with customers, all without requiring step-by-step human oversight.

At the core of this architecture is a **Supervisor AI** that dynamically coordinates a network of specialized sub-agents, each with a distinct role:

- **Case Agents** handle end-to-end requests such as address changes or refund processing
- **Knowledge Agents** retrieve structured or unstructured information source, e.g., corporate wikis, knowledge-base systems, CRM records, external databases, and even public APIs, to surface the precise policy, transaction history, or context needed for a specific customer interaction
- **Action Agents** write data into systems like SAP, Jira, or via custom APIs, sometimes requiring human approval

Instead of maintaining rigid workflows, the Supervisor interprets text-based process instructions and assigns tasks to the appropriate agents based on logic and confidence thresholds. **Data retrieval**, **writing**, and **human approvals** are orchestrated in real-time.

Multi-Agent Orchestration



This multi-agent orchestration model dramatically accelerates deployment, simplifies updates, and ensures guardrails for compliance. A single Action Agent can serve multiple use cases (e.g., refunds, cancellations) simply by following different instructions, reducing complexity while increasing flexibility.

Example: A Real-World Walkthrough

Here's how an Agent Supervisor handles a **Warranty Inquiry** from start to finish:

1. Classification

- a. The customer's incoming message via email, chat, or WhatsApp mentions a defective product and a request for a warranty claim.
- b. The **Supervisor** AI recognizes the inquiry as a "warranty claim" and assigns a specialized sub-Agent to handle it.

2. Textual Process Instructions

- a. The organization defines a textual process guide for warranty claims, outlining steps like checking the warranty period, validating purchase details in SAP, and generating a return label in the DHL portal.
- b. Because LLMs handle text more flexibly than rigid logic flows, changes are made by updating textual guidelines rather than overhauling entire workflow diagrams.

3. Modular Sub-Agents

- a. **Research Agent:** Connected to Confluence (for policy details) and SAP (for purchase history), it retrieves relevant info (e.g., warranty terms, purchase date).
- b. **Action Agent:** With write-access to SAP and integration to DHL, it completes tasks like creating a return label or updating the claim status. (Potentially only after human confirmation.)

4. Dynamic Coordination

The **Supervisor** AI orchestrates these sub-Agents. For example:

- a. **Research** whether the claim falls under the 2-year coverage limit.
- b. **Action** to verify coverage in SAP, then generate a DHL shipping label.
- c. **Research** any additional steps if the product requires an inspection.
- d. **Action** to send the generated label and instructions back to the customer.
- e. If critical information is missing (e.g., proof of purchase), the Supervisor AI autonomously reaches out to the customer to request it before proceeding further.

Human Handover for Exceptions

- Certain steps may require human approval, e.g., high-value claims or potential fraud.
- The AI seamlessly transitions to an **AI Assistant** mode, prompting a human agent to review or override a decision.
 - AI asks a human to take over the whole ticket.
 - AI asks a human agent for some information it can't access.
 - AI asks a human agent to confirm a certain action the AI wants to execute.

This **modular, agentic approach** fosters reusability. The same “SAP Agent” can handle different tasks (e.g., address changes, order cancellations) by referencing textual instructions and the relevant system documentation, rather than relying on lengthy, hard-coded workflows.

3.3. Hybrid Intelligence

A key advantage of this agentic architecture is its hybrid approach:

- **AI Agents** operate autonomously; classifying, deciding, and executing actions
- **AI Assistants** provide real-time guidance and escalation when needed

AI <> Human Collaboration



Like a human agent calling their supervisor in complex or uncertain situations, AI Agents **proactively seek human input** when:

- Confidence thresholds aren't met
- A policy requires dual validation
- High-risk or exceptional cases are detected

In those cases, the Supervisor AI transitions seamlessly into Assistant mode and prompts human review at the right step, not the whole case. AI Agents request human intervention in three ways:

- Ask a human to take over the entire case (e.g., unusual refund request)
- Ask for specific missing information the AI can't access (e.g., internal notes, attachments)
- Ask for confirmation before executing a sensitive action (e.g., canceling a premium subscription)

The first type is common in traditional chatbot handovers. But what is novel is the granularity and precision of the second and third.

This approach ensures that AI Agents remain in control of the workflow, while humans stay in control of the outcome. It's a true **"human-on-the-loop" model** that delivers the efficiency of automation without compromising compliance, safety, or customer trust.

Additionally, thanks to the modular setup, the same system components (e.g., SAP Agent) can be reused across workflows simply by updating the process instructions, eliminating the need for hard-coded flows or brittle integrations.

"As machines get better at being machines, humans have to get better at being more human. So human empathy, EQ, et cetera, will all become more important for employment."

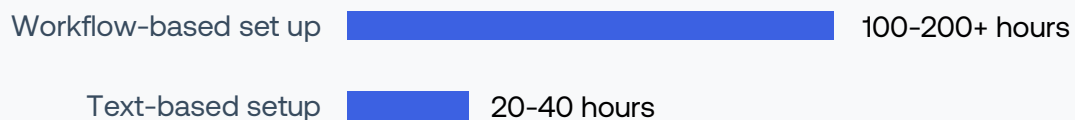
*Andrew J. Scott, Professor of Economics at London Business School
(McKinsey, 2023 [7])*

4. How AI Agents Transform Operations

Faster Implementation & Maintenance

Compared to rigid, scripted workflows (which can take 100-200+ days to set up, especially in complex environments), an agentic approach drastically cuts deployment time. By **simply refining textual instructions**, companies can:

- Build or expand AI-driven processes in **1-2 days** once the core connectors (e.g., CRM, ERP) are in place.
- Maintain adaptability, as updates to the process no longer require complete workflow redesign.



Enhanced Accuracy & Consistency

AI Agents can cross-verify data across multiple systems and knowledge bases. This reduces the risk of human error, especially in repetitive tasks, and ensures consistent application of policies.

Automatic Scalability

AI Agents automatically scale to ticket volume, allowing businesses to handle peak demand periods, such as Christmas or Black Friday, without requiring urgent hiring processes. This ensures service levels remain stable even during surges in customer inquiries.

Employee Upskilling

With AI Agents handling mundane inquiries, human agents can focus on high-value tasks such as relationship building, empathy, and complex problem-solving. This redefines roles in the customer service organization, elevating job satisfaction.

5. Implementation Approach and ROI

A phased approach ensures a smooth transition from AI Assistants to fully autonomous AI Agents while minimizing risks and maximizing adoption. This structured methodology allows organizations to test, refine, and scale AI-driven automation efficiently.

Phase 1: Pilot with AI Assistants (low-risk, measurable impact)

- Focus on drafting support and data retrieval only (no autonomous actions)
- Measure impact on AHT, CSAT, and agent adoption rates
- Identify top “low effort” ticket types suitable for future automation

Expected ROI:

- ✓ Positive operational ROI within **1–2 months**
- ✓ AHT reduction by **20–30 %**
- ✓ Quick wins build stakeholder confidence

Phase 2: Targeted AI Agent Deployment (low-risk, high-volume workflows)

- Automate specific workflows (e.g., address changes, return labels) with supervised AI Agents
- Implement human-on-the-loop checkpoints for quality and compliance
- Fine-tune text-based process instructions based on real-world iterations

Expected ROI:

- ✓ Expanded cost savings by **15–25 %** within **3–6 months**
- ✓ First fully autonomous processes operational
- ✓ Minimal disruption to existing teams

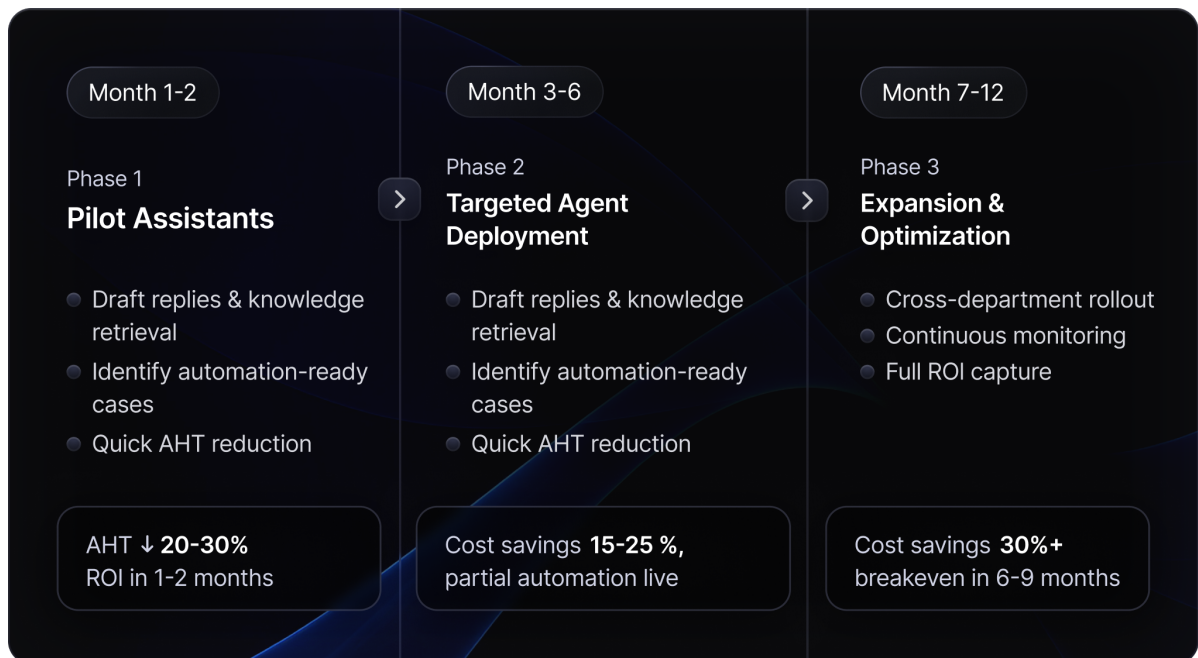
Phase 3: Expand and Optimize Across Departments (scaling and cross-functional alignment)

- Extend agentic automation to adjacent teams (e.g., billing, logistics)
- Monitor and enhance exception handling and escalation paths
- Regularly update compliance frameworks (GDPR [8], EU AI Act readiness)

Expected ROI:

- ✓ Full-service cost reduction of **30–50 %**
- ✓ Breakeven on initial investment typically within **6–9 months**
- ✓ Sustainable scalability with minimal new hires

Journey to AI Agent ROI



*“Enterprises typically see a **30% or higher reduction in total service costs** after implementing advanced AI Agents at scale (Deloitte, 2024 [9]).”*

6. AI Service Readiness Checklist

- ☐ 12-month labeled ticket history
- ☐ API or RPA access to CRM & ERP (read AND write)
- ☐ Documented service policies (warranty, refunds, KYC)
- ☐ GDPR-compliant Data-Protection-Impact Assessment (DPIA)
- ☐ Role-based access control (RBAC) in CRM/ERP
- ☐ Zero-trust network & SSO
- ☐ Change management & re-skilling plan
- ☐ Pilot budget secured (approx. USD 20-30k)
- ☐ Executive sponsor + cross-functional steering group

Robust data security and compliance mechanisms are mandatory:

- ☒ Encryption of data in transit and at rest
- ☒ Full audit trails
- ☒ EU AI Act-ready governance frameworks

7. Conclusion & Future Outlook

AI Agents represent the next frontier in customer service.

Within the next 2–3 years, advancements in LLMs and orchestration frameworks will enable:

- Full multi-department workflows (e.g., support → billing → logistics)
- Multimodal processing (text, images, voice)
- Proactive customer service models

Organizations who adopt early and build modular, human-aligned AI ecosystems will dominate the next wave of customer experience innovation.

“The **most important step is to simply start applying AI**. From there, new doors continue to open.”

Guido Messere, vTours (FVW, 2024 [10])

Early adopters stand to gain a **competitive advantage** with faster service, lower costs, and a more empowered workforce, while meeting evolving regulatory expectations in the EU and beyond.

About Typewise

Typewise is an enterprise-grade AI customer service platform that fundamentally optimizes and automates customer service with the help of custom AI Agents and an intelligent Agent Assistant. Numerous Fortune 500 companies, including Unilever and DPD, have reduced effort by 50% or more using Typewise's cutting-edge AI technology.

Typewise is backed by Y Combinator (S22) and has repeatedly been recognized as a "High Performer" in AI-driven automation on G2.



David Eberle – CEO & Co-founder, Typewise

David Eberle has over a decade of experience in tech strategy and has led multi-million-dollar transformation projects for Fortune 500 companies. A global entrepreneur, he has lived in eight countries and speaks six languages.



Janis Berneker – CTO & Co-founder, Typewise

Janis Berneker leads AI and technology development at Typewise. A lifelong AI innovator, he previously built data science models for Swiss national TV (SRF) and has extensive experience in large-scale data analytics and automation.

Contact

David Eberle – CEO & Co-founder | david.eberle@typewise.app

References

- [1] MarketsandMarkets, “AI in Customer Service Market: Global Forecast,” 2025
- [2] Gartner, “Market Guide for Customer Service & Support AI Applications,” 2024
- [3] Typewise, CCW 2025 Survey with 26 Customer Service Leaders, 2025
- [4] SemiAnalysis, “DeepSeek Debates: Chinese Leadership on Cost, True Training Cost,” Closed Model Margin Impacts, 2025
- [5] GOV.UK, “International AI Safety Report,” 2025
- [6] CCW, DPD (Schweiz) AG Case Study presented by Joshua Martic, 2025
- [7] McKinsey Global Institute, “Forward Thinking podcast, July 2023,” 2023
- [8] EU GDPR Official Website, <https://gdpr.eu/>
- [9] Deloitte, “Enterprise AI Adoption Survey,” 2024
- [10] FVW, “KI in der Touristik: So lassen sich Chat GPT und Co im Vertrieb nutzen”, 2024