

China Unicom and Huawei, Revolutionizing AI Agents

Author: Lian Jye Su
December 2025



Introduction

In 2025, China Unicom launched an artificial intelligence (AI) assistant with memory and a deeper understanding of users for individual and family customers by the name of Tone Tone. Tone Tone offers more than 30 AI-assisted services, including daily life, fashion, travel, emotional companionship, and network management, helping people to simplify repetitive daily tasks while providing warm, caring services for elderly users and people with disabilities. As of December 2025, Tone Tone has brought efficient and convenient AI services to 13 million cloud phones and 2 million family users.

Industry challenges: The need for a unified AI agent

China Unicom envisions a future in which AI agents are fully interconnected, providing users with easier, more convenient services. Most current AI agents are plagued by severe limitations:

- **Device specificity:** Personal AI agents are tied to specific devices, leading to fragmented data and memory loss when switching devices. This lack of cross-device interoperability creates a disjointed user experience.
- **Inaccurate intent recognition:** Simple and complex intent recognition remains a challenge, and existing systems often fail to understand user intentions accurately.

This Omdia White Paper was commissioned by Huawei

- **Complex app operations:** The inability to operate multiple applications through a single command limits the efficiency and usability of AI agents.
- **Security vulnerabilities:** Data leaks and insufficient encryption mechanisms expose personal data to hackers, raising concerns about trustworthiness and safety.

Architectural innovations driving performance

Based on the AI Service Function (AISF) developed by Huawei, Tone Tone addresses the limitations listed above by adopting a unified foundation for intelligent agents that seamlessly integrates across devices and applications. Several key features set AISF apart from the competition:

- The AISF platform is based on a Mixture of Agents (MoA) framework, combining a diverse range of models to accelerate intent recognition. Specifically, the platform leverages rule-based engines and small AI models to enable rapid invocation, delivering responses with a latency of less than 0.2 seconds, streamlining operations, and enhancing user experience.
- The AISF platform features a cross-device fusion memory system that allows AI agents to share and recall user profiles across devices, creating a unified memory foundation. Furthermore, its multi-turn dialogue context compression enables long-term memory retention and multi-turn conversations, ensuring continuity in interactions.
- To enhance model performance and operational efficiency, the AISF platform adopts an integrated software-and-hardware approach to accelerate inference and reduce computational overhead. Neural processing units (NPUs) are pooled and distributed across devices, enabling efficient collaboration and resource allocation.
- The platform bridges virtual and physical worlds through Internet of Things (IoT) integration, enabling AI agents to seamlessly control smart home devices. For instance, the system can automatically adjust lighting and temperature based on user preferences, enhancing comfort and convenience.

As with all agentic AI systems, security and trustworthiness are central to the AISF platform. This platform features a digital identity system that combines SIM card and phone number authentication to ensure autonomous and trustworthy operation of AI agents. The platform allows agents to access only relevant memories with explicit user permission, and data remains encrypted during transmission and storage, preventing unauthorized access and ensuring data privacy. All personal memories are strongly

This Omdia White Paper was commissioned by Huawei

associated with the user's digital identity, giving them full control over their own data, including the ability to view, modify, delete, and export memory records.

Commercial achievements and industry impact

The comprehensiveness of the AISF platform enables several key features for China Unicom's customers:

- **Unified access for all services:** The platform integrates diverse AI capabilities, including cloud gaming, videoconferencing, and smart home control, under a single framework.
- **Digital assistants:** By combining digital assistants with contextual understanding, the platform aims to solve real-life problems and enhance user experiences.
- **Privacy protection:** The platform's core protection logic ensures that data ownership belongs to users: strict encryption and authorization mechanisms safeguard personal memories.

With these features, Tone Tone has achieved significant commercial success. The platform consistently leads the industry in intent recognition accuracy (95%), response speed (millisecond-level), and user profile recall rate (85%). The various automated functions save each user more than 120 hours annually, enhancing end users' happiness index and lowering barriers for people with disabilities. Based on comprehensive integration across several domestic app platforms, the overall user satisfaction rate improved by 8% from 2024 to 89% in 2025, while the Net Promoter Score (NPS) for China Unicom's cloud AI phone users has increased from 70 to 77, reflecting improved user experience.



Conclusions

China Unicom's Tone Tone represents a paradigm shift in AI agent technology, addressing critical industry challenges with innovative solutions. By combining advanced architectural frameworks, cross-device memory systems, and trusted digital identities, the underlying AISF platform delivers telco-grade performance at scale. As the platform continues to evolve, it aims to bridge the gap between the virtual and physical worlds and empower users with intelligent, trustworthy services. Tone Tone is a blueprint for the future of AI, showcasing how cutting-edge innovations can transform the way end users interact with technology.

Appendix

Lian Jye Su, Chief Analyst, Asia & Oceania
askananalyst@omdia.com

Omdia consulting

Omdia is a market-leading data, research, and consulting business focused on helping digital service providers, technology companies, and enterprise decision makers thrive in the connected digital economy. Through our global base of analysts, we offer expert analysis and strategic insight across the IT, telecoms, and media industries.

We create business advantage for our customers by providing actionable insight to support business planning, product development, and go-to-market initiatives.

Our unique combination of authoritative data, market analysis, and vertical industry expertise is designed to empower decision-making, helping our clients profit from new technologies and capitalize on evolving business models.

Omdia is part of Informa TechTarget, a B2B information services business serving the technology, media, and telecoms sector. The Informa group is listed on the London Stock Exchange.

We hope that this analysis will help you make informed and imaginative business decisions. If you have further requirements, Omdia's consulting team may be able to help your company identify future trends and opportunities.

Get in touch

www.omdia.com
askananalyst@omdia.com



Copyright notice and disclaimer

The Omdia research, data, and information referenced herein (the "Omdia Materials") are the copyrighted property of TechTarget, Inc. and its subsidiaries or affiliates (together "Informa TechTarget") or its third-party data providers and represent data, research, opinions, or viewpoints published by Informa TechTarget and are not representations of fact.

The Omdia Materials reflect information and opinions from the original publication date and not from the date of this document. The information and opinions expressed in the Omdia Materials are subject to change without notice, and Informa TechTarget does not have any duty or responsibility to update the Omdia Materials or this publication as a result.

Omdia Materials are delivered on an "as-is" and "as-available" basis. No representation or warranty, express or implied, is made as to the fairness, accuracy, completeness, or correctness of the information, opinions, and conclusions contained in Omdia Materials.

To the maximum extent permitted by law, Informa TechTarget and its affiliates, officers, directors, employees, agents, and third-party data providers disclaim any liability (including, without limitation, any liability arising from fault or negligence) as to the accuracy or completeness or use of the Omdia Materials. Informa TechTarget will not, under any circumstance whatsoever, be liable for any trading, investment, commercial, or other decisions based on or made in reliance of the Omdia Materials.