

Changes in Internet Architecture as a consequence of AI evolution

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Changes in Internet Architecture as a consequence of AI evolution

INTERNET

bandwidth
memory
computing power

AI

AI models
LLM RAG generative AI
coding with AI
(vibe coding / spec coding)

USERS

end – users
devices
AI agents
Autonomous AI agents

Changes in Internet Architecture as a consequence of AI evolution

Internet traffic structure in 2026

- 75% multimedia
- 25% Unicast, Broadcast, Multicast

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Internet resources

- IPV4 & IPV6 addresses + AS numbers + Domains

All Internet resources are:

rented, reserved, for sale or commercially traded on the market !!

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Who coordinates the Internet ?

ISOC (1992) Internet Society

ICANN (1998)

IANA (1988) (included in ICANN)

RIPE NCC (1992) APNIC (1993) ARIN (1997) LACNIC (2002) AFRNIC (2005)

Changes in Internet Architecture as a consequence of AI evolution

Internet gains a new class of users

- Transformer 2017
- GPT-1 & BERT (LLM) 2018
- GPT-3 2020

Moderate Internet Usage

- ChatGPT 30 Nov 2022
- Claude 14 March 2023
- Bard 21 March 2023
- Gemini 8 Feb.. 2024

Higher Internet Usage (remote resources - cloud & AI Factories)

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Internet gains a new class of users

CHATBOTS

GENERATIVE AI

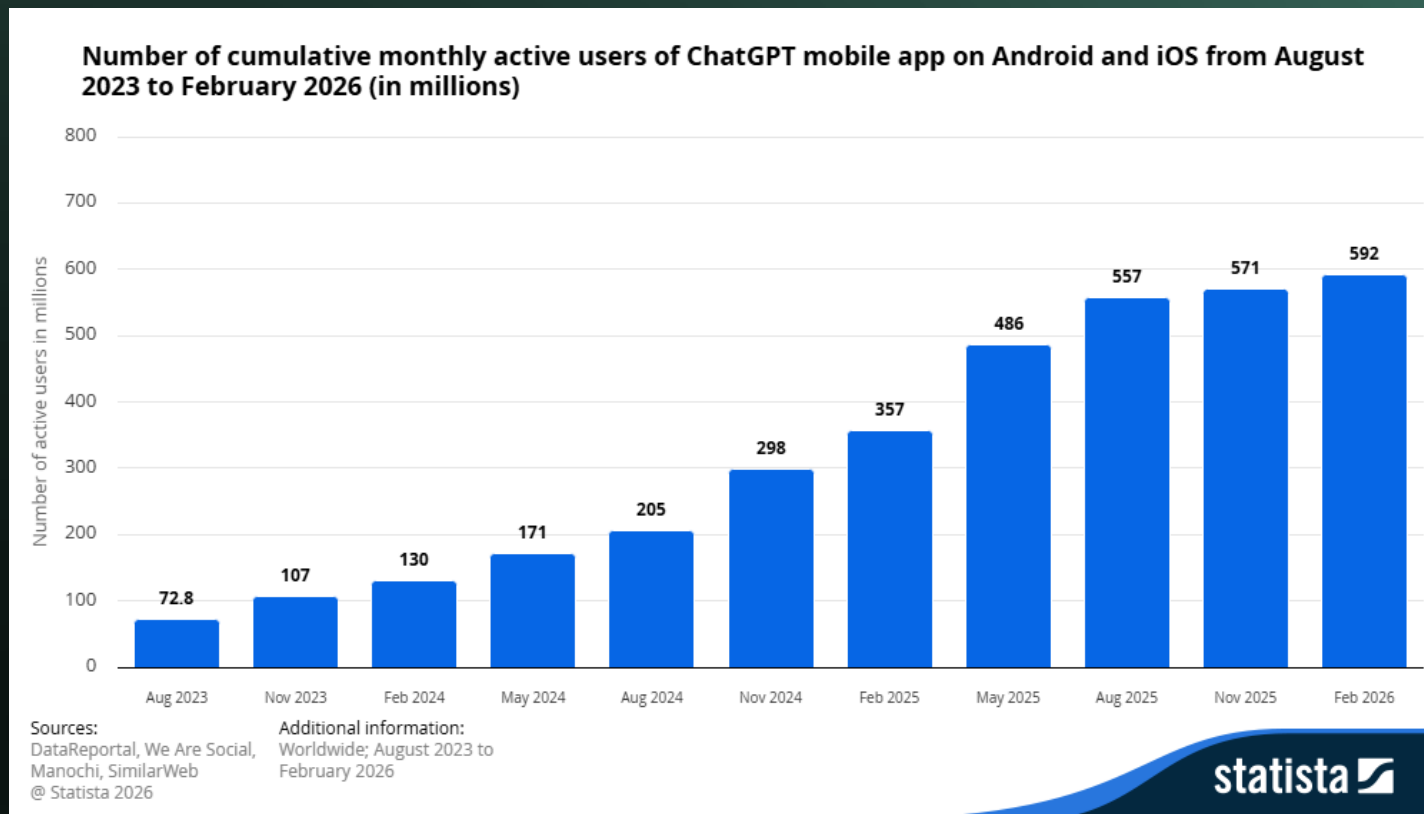
AUTONOMOUS AGENTS

AI changing traffic patterns not only the volume

- More requests (AGENT to API transactions)
- Richer media (Upstream audio / video / images)
- New hotspots (cloud peering , data centers, edge)

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AI Online Usage Growth (based on Internet)

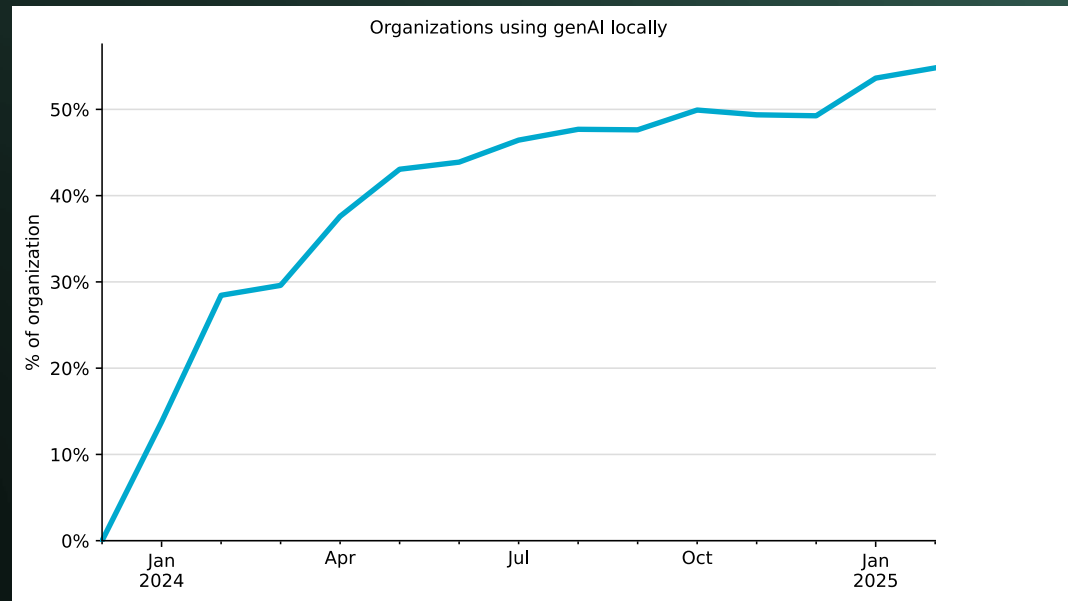


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AI Local Usage growth

After Ollama first released: in 2023

Organizations using local genAI growth 2023-2024



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AI Local Usage growth

WHY MORE AI LOCAL USAGE ?

Some reasons

AI expands the cyber attack surface over the Internet

Autonomous AI agents are uncomfortable Internet users
(stolen business models through AI agents)

] Cost for processing power and memory in the cloud explosive growth

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AI and Internet Usage

Consequences of local AI usage growth

- Local models in companies from under 1% to 54% (Netskope report 2025)
- Migration Cloud ----→ Local Resources
- New APPLE CEO: John Ternus, Apple's former senior vice president of hardware engineering - APRIL 2026. Tim Cook --→ Exec Chairman

Companies use now mixed cloud & local resources for generative AI

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AI sometime useful for the Internet

AI can make networks more adaptive

Security agents: detect, investigate, respond (AI agents against AI agents)

AI code generation (sometimes good)

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Some directions for the future

2030: the Internet becomes AI-driven — and AI-managed

Internet and especially TCP/IP will remain the core layer

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History is always important for the future



Unix History 1969 → 2026

Changes in Internet Architecture as a consequence of AI evolution

History is always important for the future



Internet History 1969 → 2026

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THANK YOU

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