TRENDS REPORT

The Year Of The AI PC Is 2025

Resist The Impulse To Invest This Year

March 28, 2024

By Andrew Hewitt with Glenn O'Donnell, J. P. Gownder, Paddy Harrington, Paige Ludl, Frank Harris

FORRESTER®

Summary

PC vendors and chipmakers are promising 2024 as the year when PCs make the transition to AI PCs. Advanced chips will bring AI processing to your fingertips, delivering bold new power to your work; however, ignore the hype that 2024 is the big year. Only early adopters will experiment with AI PCs in 2024 — plan for wider adoption in 2025 and beyond.

The AI PC Offers Digital Workplace Leaders A New Tool To Create Value

Artificial intelligence (AI) on the personal computer (PC) was the center of the 2024 Consumer Electronics Show (CES) in Las Vegas earlier this year. PC and chip manufacturers — such as AMD, Dell, HP, Lenovo, Intel, and NVIDIA — all announced AI PC innovations to come in the so-called "year of the AI PC." While employees have run AI on client operating systems (OS) for years — think background blur or noise cancellation — most AI processing still happens within cloud services such as Microsoft Teams. AI PCs are now disrupting the cloud-only AI model to bring that processing to local devices running any OS. But what is an AI PC exactly? Forrester defines an AI PC as:

A PC embedded with an AI chip and algorithms specifically designed to improve the experience of AI workloads across the computer processing unit (CPU), graphics processing unit (GPU), and neural processing unit (NPU).

After the release of ChatGPT in November 2022, the prospect of the AI PC — one that would take advantage of the immense opportunity of generative AI (genAI) as well as other types of AI — quickly gained attention as leaders grappled with how to bring AI to every employee, on every endpoint, across every organization (see Figure 1). The AI PC captivated the imagination of the industry because of its promise to:

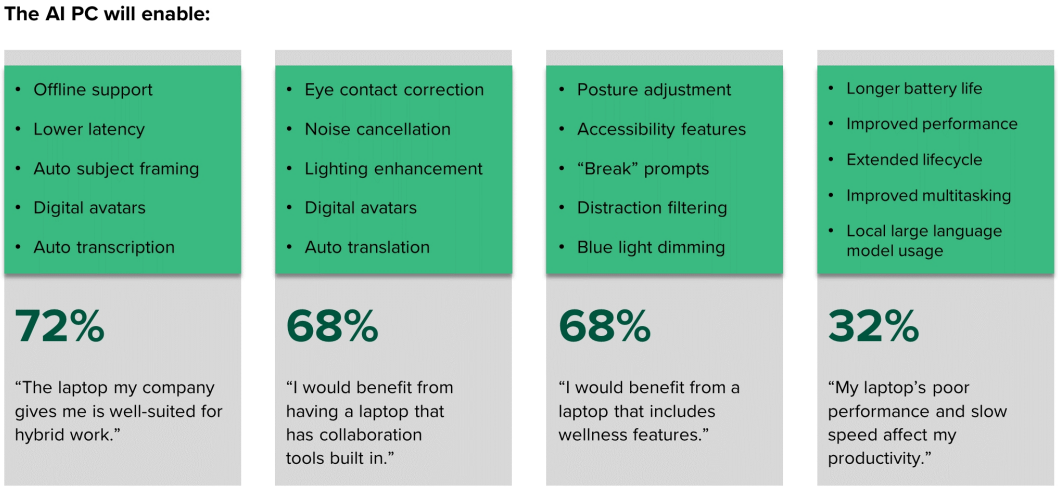
- **Supercharge employee productivity.** Leaders foresee many use cases for genAI, from content creation, to meeting transcription, and code development. While corporate-approved genAI apps, such as Microsoft Copilot, often run as cloud services, running them locally enables them to interact with local hardware, such as cameras and microphones, with less latency. Independent software vendors (ISVs) will also use AI chips to enable new use cases, especially for creatives. For example, Audacity — an open-source music production software company — is working with Intel to deliver AI audio production capabilities for musicians, such as text-to-audio creation, instrument separation, and vocal-to-text transcription.
- **Improve the collaboration experience.** Dedicated AI chipsets will improve the performance of classic collaboration features, such as background blur and noise, by sharing resources across CPUs, GPUs, and NPUs. Upset that your hair never looks right with a blurred background? On-device AI will fix that, rendering a much finer distinction between the subject and the blurred background. More importantly, the AI PC will also enable new use cases, such as eye contact correction, portrait blur, auto framing, lighting adjustment, and digital avatars.

Perhaps most intriguing, local AI will enable real-time translation for speakers of different languages.

- **Optimize device performance and longevity.** Previous AI use cases were feasible on PCs, but they drained the battery quickly. The addition of an NPU will help preserve battery life while employees run sustained AI workloads. Component monitoring for clock speeds, fans, or thermals will feed AI algorithms on the device to optimize its performance, reduce breaks, and extend PC life. Running models locally will also reduce latency compared to cloud-hosted versions and enable employees to access them without an internet connection.
- **Deliver personalized computing.** AI PCs will get to know a user's preferences and behaviors over time and adjust accordingly. They'll understand personal traits like accents and speech patterns through microphones to create more accurate email responses. They'll learn individual productivity preferences, filtering out notifications and distracting content while a developer is trying to code or alerting a salesperson when a high-value prospect emails back. The AI PC will even provide suggestions on how best to structure the day to support optimal productivity.
- **Support employee wellness.** According to our Workforce Survey, 2023, 68% of workers who use a laptop at least weekly for work agree that they would benefit from a laptop that includes wellness features. Features like anti-blue-light displays, light dimming effects that mimic circadian rhythms, and greyscale color schemes that limit exposure to harmful light have been around for years. But AI will supercharge these effects with features such as suggesting ergonomic adjustments based on meeting posture, prompting employees to take stretch breaks, and automatically transcribing voice to text for those with hearing disabilities.

Figure 1

The AI PC Will Improve Digital Employee Experience



Base: 3,536 respondents employed full or part time in an enterprise who use a laptop at least weekly for work purposes
Source: Forrester's Workforce Survey, 2023

AI PC Adoption Is Inevitable, But Not In 2024

While the employee benefits of the AI PC are intriguing, they are not enough to convince IT purchasers to go all in on AI PCs. Why? Because IT admins do not make purchasing decisions about PCs based purely on their EX impact (see Figure 2). Compatibility does drive PC purchasing and impacts experience; however, economic, privacy, and security considerations will play a larger role in AI PC purchasing. IT organizations will invest in AI PCs because, compared to cloud-hosted models, they offer benefits like:

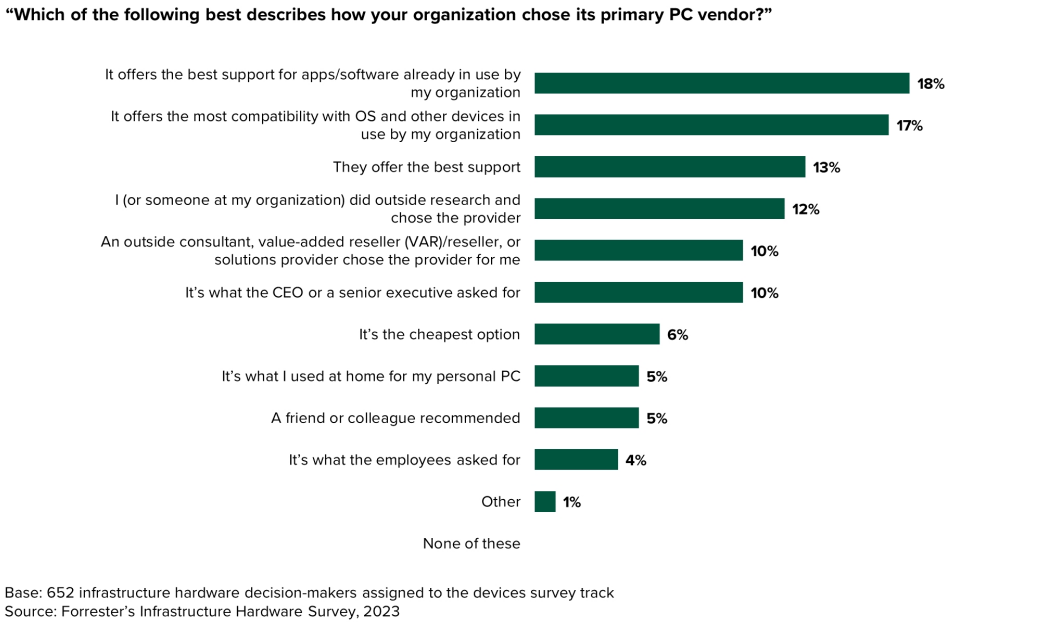
- **Costs improvements.** Running AI in the cloud is notoriously expensive. Consider the story of Latitude, the AI gaming startup that found its cloud costs skyrocketing in 2021 to nearly $200,000 a month when its AI Dungeon game became more popular. It's not just cloud consumption costs either; hardware, software, and labor also increase cloud AI costs. These will only increase as end users continue to utilize cloud iteratively through BYOAI tools and/or company-owned genAI. IT organizations will embrace AI PCs because running these models locally will reduce cloud costs significantly. An AI PC ranging from $1,000 to $3,000 per device — plus its associated software — costs pennies next to hosting and running

AI models in the cloud. This is a major reason why Apple and Samsung have pushed genAI to the forefront of their OS.

- **Privacy enhancements.** Data privacy and security are top concerns for genAI, and 55% of privacy decision-makers indicate that their organization is developing privacy controls and policies for genAI. The AI PC will give employees more control over what data stays local and what gets sent to the cloud. This will help avoid issues such as the use of personal data to train AI systems, copyright infringements, and patent violations. A recent Cisco study revealed that one in four organizations banned the use of genAI for such privacy reasons. Local AI could also make employees more willing to accept personalization use cases. For example, AI cameras could alert an employee when someone is looking over them while they're on calls.
- **Faster security response times.** According to our Infrastructure Hardware Survey, 2023, 30% of end-user computing infrastructure hardware decision-makers say that improving security and privacy is one of their organization's most important priorities. AI PCs will help support that goal by running detection algorithms on NPUs, thereby enabling a faster response time for attacks. Security vendor Xcitium is integrating with Intel's Threat Detection Technology (TDT) to analyze an attack's progression and escape attempts from its virtualization technology; Bufferzone's antiphising technology is leveraging Intel's NPU for faster phishing identification; AMD's Ryzen AI now enables customers to run anomaly detection algorithms on NPUs; and HP's Sure Sense technology conducts chip-level analysis of threats and models their behavior to protect against zero days, ransomware, and fileless threats, all without a cloud connection.

Figure 2

AI-Driven Experience Enhancements Are Unlikely To Drive AI PC Purchasing



Base: 652 infrastructure hardware decision-makers assigned to the devices survey track
Source: Forrester's Infrastructure Hardware Survey, 2023

While AI PCs Are Here, Widespread Enterprise Adoption Won't Happen Until 2025

Approximately 50 models of AI PCs are available for purchase today, and multiple AI chips are ready for enterprise deployments (see Figure 3). Pat Gelsinger, Intel's CEO, recently remarked on Bloomberg TV about AI PC adoption, "It will be tens of millions next year [2024] … and over 100 million in the next two years." Despite the hype, it's clear that the industry is still in its beginning stages. AMD CEO, Lisa Su, remarked, "I really believe that we're actually at the beginning of this AI PC journey." While it's clear AI PCs will gain traction, they won't in 2024 because:

- **There is still no "killer app" for the average information worker.** Forrester expects certain roles with high computing needs, such as creatives, data scientists, and developers, to benefit substantially from AI PCs. For example, Suraj Raghuraman, head of AI engine at Topaz Labs, says his company is now enabling users, via AMD's Ryzen AI, to run powerful AI video and picture enhancement features on local PCs much faster than they could four years ago on GPU-enabled

desktops. For most information workers, however, there simply aren't enough game-changing applications for day-to-day work to drive rapid AI PC adoption.

- **Incremental user experience enhancements don't drive PC purchasing.** While some newer PC experiences do benefit from an AI chip, most can still run on traditional CPU and GPU, just not as efficiently. Microsoft's Windows Studio Effects are some of the only commonly used features that explicitly require an NPU today, but they only focus on AI capabilities such as background blur, eye contact, framing, and voice focus. These evolutionary features — while nice to have — aren't revolutionary enough to disrupt traditional buying patterns. The AI PC is still a premium purchase that won't immediately appeal to the cost-conscious IT buyer.
- **Windows 10 end-of-life is just around the corner.** IT organizations frequently match hardware upgrades with OS releases to avoid compatibility issues. Today, over half of infrastructure hardware technology decision-makers indicate that 50% or less of their company-issued PCs are running Windows 11, according to Forrester's 2023 data. With the end-of-life for Windows 10 coming in October 2025, Forrester expects many to align AI PC adoption with the next version of Windows 11. While little is known about this next release, it's likely that Microsoft will focus its enhancements on features that utilize an NPU.
- **AI platform budget expansion will accelerate AI PC adoption in 2025.** We forecast that AI platform budgets will triple in 2024 to meet the demand of genAI applications. Enterprise workloads will be cloud-dependent, which means usage bills for customers on public cloud services will be on the rise. This will provide an opportunity for digital workplace leaders to save cloud costs by pushing AI workloads to the PC.
- **PC budgets remain buoyant.** Seventy-two percent of director-level or above infrastructure hardware decision-makers indicated they increased their budget for PCs and PC OSes from 2022 to 2023. That's good news for the AI PC long term, but most organizations set budget goals toward the end of 2023 before the hype around AI PCs went mainstream.

Figure 3

Sample AI PC Chips Available Today

Manufacturer	Processor name	Architecture	Sample OEM offerings
AMD	AMD Ryzen AI	x86	Acer Swift Edge 16 HP Omen Lenovo Yoga Slim 7
Apple	M-series	ARM	Apple M3 Apple M3 Pro Apple M3 Max
Intel	Intel Core Ultra (Meteor Lake)	x86	MSI Prestige 16 HP Spectre Dell XPS 13
NVIDIA	GeForce RTX 4080 Super	Turing	Alienware M18 HP Envy Samsung Galaxy Book 3
Qualcomm	Snapdragon X Elite	ARM	Available mid-2024

Ignore The Pressure To Buy AI PCs In 2024, But Start Preparing For 2025

AI PCs will remain a niche innovation opportunity in 2024 as IT leaders prepare for a widespread refresh in 2025. However, given the cost, security, privacy, and potential productivity benefits of AI PCs long term, IT leaders should take a cautious, exploratory approach to AI PCs in 2024. Avoid the temptation to buy first-generation AI PCs right away. Instead, educate your organization and prepare for the inevitable rise of the AI PC by:

1. **Identifying personas that would benefit from an AI PC now.** The application ecosystem that can benefit most from a dedicated NPU centers around creativity. Applications for video/photo editing, music production, and graphics design have plenty of use cases that can utilize an NPU, such as voice and instrument isolation, person masking, automatic reframe, and object removal. Because of the massive impact these features have on productivity, consider creatives a first test group for the AI PC. Next, look toward high-compute users, such as engineers and developers, that can benefit from the improved performance that a dedicated NPU can provide for sustained multitasking, especially those working on AI models. Executives are also likely candidates due to the handful of apps that support tasks like speech practicing (Yoodli), resume building (Kickresume), and presentation creation (Gamma).

2. **Watching for NPU-powered experiences within the operating system.** Today, most AI use cases stem from third-party applications installed on an OS. As NPUs become more ubiquitous, expect to see specific OS capabilities similar to Windows Studio Effects that leverage an NPU from major OS providers like Apple, Google, Linux, and Microsoft. It's likely that these experiences will also force hardware prerequisites to increase; there are already rumors that Microsoft will set minimum RAM requirements for the AI PC to 16 GB, up from the standard 8 GB. While still unconfirmed, IT buyers should take a closer look at their existing fleet and target devices with less than 16 GB RAM for potential upgrades.
3. **Keeping an eye on new AI capabilities embedded into key enterprise applications.** The adoption of the AI PC will require a vast ecosystem of applications that can utilize the AI chipset to improve performance of key workloads. There are many of these applications today, ranging from video and audio editing, to design, to collaboration assistance (see Figure 4). Intel recently launched its AI PC Acceleration Program to connect hardware providers to major ISVs. The program currently includes 100 ISVs but will expand. Enterprises should take an inventory of their apps to determine what percentage of them could benefit from an AI PC today.
4. **Avoiding the temptation to overfocus on the PC.** Despite all the hype around AI PCs, it's not the only form factor that will benefit from AI at the edge. For example, Apple is reportedly building a version of ChatGPT directly into iPhone 16, in addition to the company's Neural Engine chips that run on the M-series MacBooks. Google's Tensor G3 chip is already enabling AI use cases like Audio Magic Eraser on Android mobile devices. Clarius Mobile Health recently released the first AI-enabled handheld ultrasound scanner to identify and measure tendons in the foot, ankle, and knee. According to Ohad Arazi, the company's CEO, AI is "now enabling less proficient healthcare practitioners to acquire quality images to make meaningful decisions quickly."

Figure 4

Sample List Of NPU-Aided Applications Available Today

Application name	Category	Sample AI features
Adobe	Photo/video editing and design	Filler word detection (i.e., “um” “uh”) Image isolation Text to image
Audacity	Music production	Instrument isolation Vocal-to-text transcription Text-to-audio creation
Blackmagic DaVinci Resolve	Video editing	Speech-to-text translation AI audio classification Face refinement Object removal
Descript	Podcast production	AI voice cloning Background noise removal Subject replacement
Kickresume	Resume production	Resume writing Cover letter creation Resume benchmarking
Microsoft Windows Studio Effects	Collaboration	Auto-framing Copilot integration Language translation
Spark Mail	Collaboration	Email writing assistant Email summarization Focus assistant
Topaz Labs	Photo and video editing	Photo resolution sharpen Image upscaling Video stabilization Motion interpolation
Webex	Collaboration	Speaker tracking Voice equalization Voice filtering
Yoodli	Speech coaching	Filler word detection Eye contact detection Pacing suggestions
Zoom	Collaboration	Noise suppression Meeting summarization Meeting summary dissemination

FORRESTER®

We help business and technology leaders use customer obsession to accelerate growth.

FORRESTER.COM

Obsessed With Customer Obsession

At Forrester, customer obsession is at the core of everything we do. We're on your side and by your side to help you become more customer obsessed.

Research

Accelerate your impact on the market with a proven path to growth.

- Customer and market dynamics
- Curated tools and frameworks
- Objective advice
- Hands-on guidance

Learn more.

Consulting

Implement modern strategies that align and empower teams.

- In-depth strategic projects
- Webinars, speeches, and workshops
- Custom content

Learn more.

Events

Develop fresh perspectives, draw inspiration from leaders, and network with peers.

- Thought leadership, frameworks, and models
- One-on-ones with peers and analysts
- In-person and virtual experiences

Learn more.

FOLLOW FORRESTER

Contact Us

Contact Forrester at www.forrester.com/contactus. For information on hard-copy or electronic reprints, please contact your Account Team or reprints@forrester.com. We offer quantity discounts and special pricing for academic and nonprofit institutions.

Forrester Research, Inc., 60 Acorn Park Drive, Cambridge, MA 02140 USA
Tel: +1 617-613-6000 | Fax: +1 617-613-5000 | forrester.com