

LESSONS FROM GARTNER®: MAXIMIZING AI VALUE IN THE AI PC REFRESH CYCLE

WHITEPAPER | 2025






Up until now, much of the discussion around AI and AI PCs has focused on defining what AI is, how it works, and the underlying chip advances that enable local artificial intelligence processing. While these are important topics, the larger question for information officers is how to evaluate AI and AI PC use-cases, plan deployment strategies, and deliver a meaningful return-on-investment for the nascent technology.

With Windows 10's end-of-support (EOS) fast approaching, businesses are weighing their transitions to Windows 11 and grappling with how AI PCs fit into their refresh cycles. Companies clearly do not feel they have the luxury of waiting; recent IDC data¹ suggests the overwhelming majority of corporations are already experimenting with AI and AI PCs in some form, though many remain uncertain about implementation and adoption timelines.

A recent Gartner[®] article² offers a useful lens for understanding the varying impact of AI investments, with pertinent advice for IT administrators and executives alike. While the report focuses specifically on generative AI, the framework it articulates is flexible and can be applied to other types of AI, as well as the larger question of AI PC deployment timing.

The report states that the various business benefits of AI can be categorized into three categories: Defend, Extend, and Upend, each with its own characteristics and expected value-add, as shown in Figure 1, below:

Figure 1: Three Business Cases of GenAI

GenAI Business Case Types			
Illustrative			
			
	Defend	Extend	Upend
Competitive ambition	Augment individual productivity to maintain competitive parity	Transform existing process/team for competitive differentiation	Disrupt by creating new products, value propositions, markets
Expected return	Return on Employee <i>Improved well-being and employee NPS</i>	Return on Investment <i>Financial return</i>	Return on Future <i>Strategic bet</i>
Examples	Office productivity, coder productivity	Customer service re-org, transformed claims process	Drug discovery, AI creates investment fund
Cost per year (in 2024)	\$500 (per worker)	\$250K to \$5M	\$20M to \$250M+

Source: Gartner
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“Defend” focuses on the individual employee and covers a broad set of use cases that boost productivity, improve employee satisfaction, and allow individuals to work more efficiently.

The report estimates that around half of current AI spending lands here, and while “Defend” rarely produce direct financial ROI, they do create tangible value in a different currency of value. Productivity gains appear throughout a worker’s daily tasks rather than concentrating in a single, easily tracked area. Surveys show, however, that these tools can significantly boost employee satisfaction.



The availability of Copilot and other similar tools correlated with a 180% increase in digital worker NPS (Net Promoter Score) from 21 to 59. NPS measures how likely a person is to recommend a company, product, or service to a friend or colleague; The Gartner report calls the increase from 21 to 59 “extraordinary” but notes that “It is also a hard metric by which to measure the value of defend initiatives.”

“Extend” initiatives are most common in customer service, marketing, and software engineering, with a greater reliance on concrete metrics that translate more directly to improved business outcomes. Focusing on existing objectives and KPIs makes it easier to measure the net improvement AI delivers, especially when such services are integrated alongside other pre-existing tools rather than attempting to entirely replace them. Clear, predefined goals and established metrics of success are essential to a successful “Extend” deployment.

“Upend” represents the high-risk, high-reward zone and aims to disrupt an industry or create entirely new product categories. Such efforts can be transformational, if successful, but Gartner cautions that any single “Upend” initiative has a low probability of delivering the sweeping change often attributed to breakthrough AI. Companies in pharmaceuticals or materials science do see advanced benefits from AI-assisted discoveries, but in practice, dramatic “Upend” events often require many integrated steps and investments over a longer timeframe.

From a corporate planning perspective, “Extend” offers the best near-term financial payoff on AI spending, while “Defend” provides returns via strengthened employee productivity and satisfaction. “Upend” can deliver radical change but remains difficult to plan around for near-term gains.

APPLYING GARTNER INSIGHTS TO WINDOWS 11 AND THE AI PC

Having unpacked the Gartner categorization schema, let’s consider how this framework applies to Windows 11, AI PCs, and the current corporate refresh cycle.

An AI PC is a PC that contains a specialized AI processing engine known as an NPU, or neural processing unit. The first AI PCs debuted in 2023, with a specialized AI co-processor known as an NPU, or neural processing unit. These initial systems featured NPUs capable of up to 10 TOPS. Then, in early 2024, Microsoft announced a new type of high-end PC, known as a Copilot+ PC.

Copilot+ PCs run Windows 11 and must include an NPU capable of at least 40 TOPS (Trillion Operations per Second), 16GB of RAM or more, and no less than 256GB of SSD storage. They are designed to run some AI tasks locally via the NPU rather than relying solely on cloud-based services. Copilot+ PC features have continued to evolve over the past 12 months, with capabilities like Recall (preview), improved Windows search, and Click to Do (preview).

There are a number of companies either working to integrate AI into existing applications or building all-new experiences around AI. The general goal of these efforts is to create software that can interact intelligently with text, images, and other user data, whether that means suggesting edits, translating documents, or surfacing documents the end user is looking for without knowing an exact file name.

What sets AI PCs apart from earlier systems is a more sophisticated grasp of context that has long eluded more traditional methods of computing. This is very much by design. One of the underlying long-term goals behind AI is to shift the PC from a tool that people can use into a collaborative partner that can help you analyze, create, and process information.

The ability to perform specific contextual actions or run searches that rely on semantic indexing is both a significant value-add relative to how the PC has typically functioned and a step towards a more human-like way of associating and processing data. Semantic indexing more closely mimics the behavior of the brain, which tends to store related concepts close together. This is why it’s easy to think “chair” after you read the word “table.” It’s a fundamentally different approach than the more traditional method of using wildcard search terms or relying on exact file names.

The broad industry effort to incorporate AI and improve the PC’s ability to leverage context can be viewed through the lens of Gartner-recommended research. Evaluated in this context, and considering the general trends towards AI and AI PC adoption, it’s clear that the entire PC industry is moving through its own version of Defend / Extend / Upend, with a long-term goal of changing both how people relate to PCs and the types of work the PC is seen as being able to accomplish.



Computing has gone through at least three similarly profound transformations before – once in the late 1980s and early 1990s as desktop GUIs and mice became standard devices, once when internet adoption exploded and networked computers became the corporate norm, and once in the mid-2000s, when continuing advances in battery life, CPU design, and power efficiency made touchscreen-enabled, full-screen smartphones a reality. Each of these transition points altered how people related to computing devices by reshaping perceptions of what a desktop, laptop, or smartphone could achieve. AI is poised to drive a similar long-term transformation as more companies experiment with the technology.

Even systems with NPUs rated for less than 40 TOPS can take advantage of the additional flexibility and power efficiency that an NPU provides. Regardless of the underlying hardware capability that an IT department chooses to target, AI and AI PC workloads are going to be an important part of the future.

AMD AND THE AI PC

AMD was the first x86 manufacturer to bring an NPU-equipped processor to market, with performance rising from a peak of 10 TOPS (Trillion Operations per Second) in 2023³ up to 55 TOPS in 2025^{4,5}. It is invested in bringing this flexibility and capability to commercial IT deployments at every price point, with nine different SKUs featuring an NPU rated for > 40 TOPS.

Multiple analyst firms agree that AI PC adoption will be near-universal within a handful of years. AI use-cases vary depending on the field, but there's broad agreement that AI will be common. That means the PCs a company buys today are likely to be running AI workloads before the next refresh cycle, no matter what. The question is, will those workloads be running on systems designed to support them optimally, or on older hardware that may struggle to do the same?

AMD is the company with PRO Technologies, a comprehensive suite of security and manageability tools that enable easy fleetwide software deployment across systems from multiple vendors. The AMD Instinct™ GPU accelerators drive AI inference workloads at data center scale, while the AMD XDNA™ 2 NPU at the heart of the AMD Ryzen™ AI 300 PRO Series and Ryzen™ AI Max PRO Series processor drives new AI experiences at the edge. No other company combines such a pervasive ecosystem with the benefits of the x86 ecosystem and decades of experience in CPU and GPU design. As of January 2025, AMD offers the most comprehensive lineup of Copilot+ PC-supporting, next-generation mobile PC processors for enterprise PCs⁶.

Companies planning AI deployments while simultaneously navigating a Windows refresh and potential regulatory uncertainty don't need additional sources of confusion stacked upon the present moment. The Gartner report can help businesses understand where and how AI and AI PCs could create value. AMD Ryzen™ AI PRO Series processors ensure you've got a platform to deliver it.

ENDNOTES

1. IDC White Paper, sponsored by AMD, Accelerate Your Organization's AI Strategy by Deploying High-Performance AI PCs, doc #US53192925-WP, March 2025.
2. Gartner, The 3 Business Cases of Generative AI Value, Nate Suda, Hung LeHong, 6 January 2025
3. As of May 2023, AMD has the first available dedicated AI engine on an x86 Windows processor, where 'dedicated AI engine' is defined as an AI engine that has no function other than to process AI inference models and is part of the x86 processor die. For detailed information, please check: <https://www.amd.com/en/technologies/xdna.html>. PHX-3a.
4. Based on AMD product specifications and competitive products announced as of October 2024. AMD Ryzen™ AI 300 Series processors' NPU offer up to 50+ peak TOPS. AI PC is defined as a laptop PC with a processor that includes a neural processing unit (NPU). STX-04a.
5. Trillions of Operations per Second (TOPS) for an AMD Ryzen processor is the maximum number of operations per second that can be executed in an optimal scenario and may not be typical. TOPS may vary based on several factors, including the specific system configuration, AI model, and software version. GD-243.
6. Based on AMD's product specifications and competitive products announced as of January 2025, AMD's lineup of mobile processors for enterprise use offering 40+ TOPS NPU performance required for Copilot+ PCs consists of 9 models within the Ryzen™ AI PRO 300 and Ryzen™ AI Max PRO Series. It represents the largest offering of mobile processors with this capability among all PC processor manufacturers. An AI PC is defined as a laptop PC equipped with a processor that includes a neural processing unit (NPU). KRKP-9

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