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AI Evolution: From Hardware Dominance to Application-Layer Economics

By Brian Regan

Since OpenAI revealed what modern AI could do in late 2022, an industry wide race has taken off as companies large and small try to capture what I expect to be a massive new market, lifting everything from hardware and energy providers to data-center infrastructure firms and even strategically located landowners. The boom has countless ripple effects and has sparked a lively bull bear debate as heavy investment meets pressure for quick returns. I thought it would be useful to share how I see this trend evolving based on past cycles in computing, not as a technologist but as a generalist investor focused on distilling business models and industry patterns into investable ideas.

The way I frame the AI evolution is through the lens of major transitions in how we interact with computer networks and applications.

In the 1990s, computing was dominated by desktop native applications and portals like Microsoft, AOL, and Yahoo!, with on premises memory and processing power driving the importance of hardware companies such as EMC, IBM, DEC, Intel, Gateway, Compaq etc.

The next phase was browser-based computing initially Netscape, but ultimately Google with Chrome and search (and JavaScript). As memory and compute became cheaper and more widely available under Moore's Law, hardware companies steadily lost economic importance.

Mobile applications then accelerated cloud adoption, enabled SaaS, and created an entirely new ecosystem that is unrecognizable to users of the1995 version of the AOL portal that we loaded using free CDs from magazines into our Gateways (that sentence if fun because it's gibberish to many people).

Throughout these transitions, Microsoft and Google persisted by owning key parts of the ecosystem. Google and Apple in mobile and consumer applications with one using a closed system and one an open one, and Microsoft in the enterprise. A consistent pattern with some exceptions has been that hardware becomes commoditized over time, while the owners of the dominant application ecosystems capture the economic rents.
That framework explains why hyperscalers are spending so aggressively today. They understand that owning the next iteration of engagement, the AI ecosystem, will

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determine who earns the economic rents of the future. Today's hardware beneficiaries include Nvidia, Broadcom, Micron, and AMD. Over time, I do expect these companies to become less economically dominant as compute capacity eventually catches up to compute needs, even though we appear very far from that point today given the scale of current buildouts and the continued surge in hardware revenues. This dynamic is what investors are worried about when they reference an AI "bubble," and it's something we need to continuously monitor. It is important to notice that a decrease in the capex wouldn't necessarily hurt all companies in the AI conversation but largely would impact the hardware providers.

Looking ahead, my base case is that Google will dominate retail and mobile AI applications much as it has with search, browser-based applications, and mobile apps, aided by its partnership with Apple. I expect OpenAI's IP to continue powering Copilot and maintain a strong retail presence. Claude is likely to underpin Amazon's strategic AI initiative, potentially including Amazon branded services such as legal offerings. Grok will largely serve Elon Musk's broader ambitions. Over time, I expect large language models themselves to become increasingly capable and commoditized. As that happens, the economic rents should accrue primarily to the companies investing in and owning the next generation of application engagement, rather than to the underlying models or hardware alone.

If all this seems to be the status quo with Google, Microsoft and Amazon continuing to be huge players then I would say you're correct. These companies are not sitting idle waiting to be disrupted but they are engaging in the new way we'll write and consume computer applications (and they'll take a cut for each). Each hyperscaler is trying to carve out their slice of the future app store which will have a very long tail and that scale will come with big returns.

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