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Is AI eating software's lunch?

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Ever since ChatGPT first burst on the scene in 2022, generative AI (genAI) has sparked widespread debate about its potential to transform how we work, live, and interact with technology. Hyperscalers like Microsoft, Google and Amazon are investing billions of dollars in anticipation of an AI demand boom. However, the tangible impact on the software we use daily remains in its very early stages. In this article we explore how AI could reshape the software landscape, influence software company business models and who stands to benefit or lose from these developments.

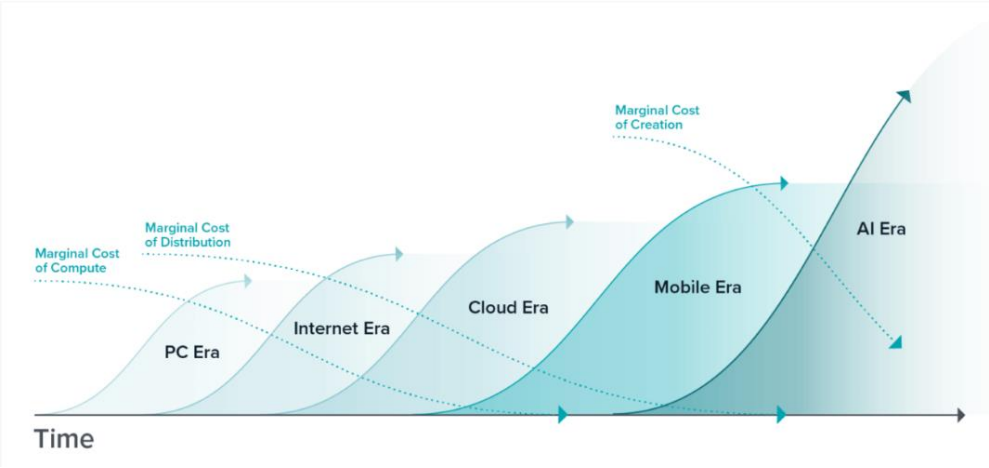
Several major innovation waves have shifted how people interact with technology.

Decades ago, the personal computer helped to make computing a household phenomenon by driving down the cost of compute. Then, the internet and the infrastructure and services built upon it enabled companies to scale to previously unimaginable levels by providing access to global audiences at minimal cost.

Today we could be standing on the precipice of another transformation wave, as new levels of productivity unlocked by AI could fundamentally alter the pace of global economic growth. However, it also has the potential to significantly disrupt work as we know it, as thousands of jobs could be in line to be augmented or replaced.

In a February 2025 interview, Microsoft CEO Satya Nadella said that for AI to be considered truly transformative he would like to see it drive double digit global GDP growth. Even if this proves to be overly optimistic, if the impact is anywhere close it would signify significant value creation.

Figure 1: Technology innovation waves



Source: Andreessen Horowitz, October 2024 Fintech Newsletter

AI is reshaping how we build software.

The new coding language is English.

Thanks to AI, it is becoming increasingly possible to build software by describing what you want in plain English.

During Microsoft's Q3 2025 results presentation, CEO Satya Nadella said that in the first four months of 2025 over 10,000 organisations used the company's services to develop customised AI apps and agents. Microsoft processed 100 trillion AI tokens in the quarter, five times more than the year before. 50 trillion of those tokens were processed in the last month alone (i.e. demand continues to accelerate).

GenAI tools can significantly reduce the barriers to entry to software development and unlock a world of possibilities that previously didn't seem feasible. Anthropic co-founder Jack Clark estimated that even if there are no further advancements to AI from here on out, the existing benefits to coding and software development should already boost GDP growth by 0.5% per annum.

AI solutions can help to significantly reduce the time and effort required to write code. This could free up software engineers to focus on more complex or creative tasks and open the door for entrepreneurs who previously would not have known how to bring their ideas to life. AI could also make it feasible to introduce features previously deemed too costly or complex, which could support product differentiation.

Lower barriers to entry increase the risk of competition.

Easier software development could encourage new competition and increase the pressure on existing companies to keep up. It may be harder for incumbents to implement new technologies as issues around regulation, intellectual property, data privacy and results accuracy pose greater reputational or organisational risks than for more nimble startups. It might also take more preparation to ensure end-users or vendors are ready to deploy their new solutions at scale.

Established companies can leverage their data and expertise to compete.

These companies can leverage proprietary data to fine-tune AI models. Customised solutions based on thousands of real-world interactions can enable sales teams to provide more targeted content or help virtual agents to deliver better contextualised responses to queries.

Proprietary data, trusted client relationships, deep domain knowledge, a superior understanding of customer needs and the ability to ensure data privacy are likely to be key differentiators in the new environment.

The potential disruption from AI extends far beyond software.

Although the global enterprise software market is sizeable at roughly $300bn, it is still dwarfed by the multi-trillion-dollar white-collar labour market. The long-term disruption potential for AI is therefore enormous. However, it is still early days, and it remains to be seen how conditions develop.

The future of software will likely unfold in phases as AI adoption accelerates.

Each phase is likely to bring different opportunities and challenges:

- Initial implementations are expected to be centred around incremental features to existing software (automated summaries, intelligent search, more sophisticated content generation, etc.).
- The emergence of AI agents that can execute tasks on behalf of users could drive further transformation. Instead of merely providing insights or recommendations, agents will be able to automate complex workflows to increase labour productivity and unlock substantial economic gains.
- Over the long term, AI could evolve from a mere tool to an integral part of the workforce; working alongside humans while humans shift their focus to more creative, strategic, and interpersonal activities.

- Similar to the early days of the internet, it is likely that value will initially accrue to those building out the technology infrastructure. However, once the tools become more widely available and easier to use, the bigger opportunity could be in the apps and services built on top of it.

Enterprises are pursuing AI integration across a range of functions:

- Leveraging AI to reduce costs and unlock operating efficiencies is likely to produce the most immediate tangible benefits.
- Over the medium term, genAI could enable companies to unlock entirely new revenue streams from new products or categories.
- Over the long term, some legacy business models may become obsolete, and businesses may need to entirely rethink their offerings to take advantage of the potential that AI unlocks.

Scepticism remains around AI's commercial viability, and whether it justifies the scale of infrastructure buildout currently underway. While it remains to be seen how AI evolves, its true impact may not come from a single killer app, but rather from thousands of incremental enhancements across industries and use cases.

There are already numerous real-world applications that illustrate the potential of AI.

These include companion robots that reduce loneliness for elderly patients, hyper-personalised tutors that address students' specific needs, tools that facilitate communication for stroke victims or non-verbal patients, enabling doctors to perform precision surgery from across the world and reducing the time and cost of drug discovery.

Two examples that illustrate some of the operational and strategic shifts that are underway include Duolingo and Klarna:

- Online learning platform Duolingo recently redefined itself as an 'AI-first' organisation. Although the company's intention to reduce its reliance on external contractors was met with some alarm, AI-enhancements have enabled the company to launch 148 new language courses in a single year. This compares with just 100 courses over its 12-year history.
- Buy Now, Pay Later platform Klarna has stated that its internally developed AI assistant has enabled it to decrease customer response times from 11 minutes to under 2 minutes, while also reducing the need for 700 human agents (unlocking significant cost savings). However, Klarna has since rehired human support staff, as the AI optimisation drive had, in some cases, come at the expense of user experience. This illustrates both the opportunities and challenges that will have to be dealt with as the technology continues to evolve.

New entrants are often the biggest winners.

New entrants that were able to capitalise on platform shifts by exploiting new revenue opportunities have in many cases been the biggest winners. The innovators dilemma makes it hard for incumbents with existing products and services to tilt rapidly into unproven and potentially less profitable (at least in

the short term) technologies. For every Microsoft, Oracle or Meta that was able to adapt to a changing environment, there is a Yahoo!, Sun Microsystems or Silicon Graphics that has failed to keep up.

The need to satisfy existing customers makes it hard for incumbents to risk the disruption necessary to overhaul their software architectures to fully take advantage of innovation. Attempts to stay relevant by incorporating AI as an add-on can meanwhile come across as forced or gimmicky. Some may describe this as trying to attach a jet engine to a horse carriage.

Growing frustration with the limitations of offerings like Microsoft's Copilot highlights the challenges with retrofitting. Many users feel that the experience has not lived up to expectations. Despite Microsoft's vast resources and access to leading models, the need to continue to service a large existing customer base with established workflows compels it to continue to conform to rigid existing software architectures. This does not mean the company won't be able to adapt over time. But it clearly has work to do.

In contrast, AI-native companies with systems that are designed from day one to learn and improve with each interaction can drive a powerful self-reinforcing flywheel: more engagement drives better services, which attracts more users, which drives more engagement, and so forth.

From an investment perspective, change creates both risks and opportunities.

Established companies may be able to leverage existing technical expertise, superior data, distribution scale and sticky customer bases to stay ahead of the competition. In contrast with previous innovation waves, AI also carries greater computing costs and capital intensity. Access to capital may therefore prove to be an important differentiator.

However, the need to defend existing revenue streams and little appetite for short-term disruption could make it hard for legacy software providers to optimise their platforms for a changing paradigm.

Over time, some established companies will update their systems to make better use of data and AI features. For investors, the key will be to distinguish between real system overhauls and superficial integration.

Vertical software providers are well placed to grow.

Unlike horizontal software that is built to serve a broad variety of use cases (e.g. Microsoft and Salesforce), vertical solutions integrate deeply into industry-specific workflows. Leading vertical software providers include Veeva Systems (life sciences), Toast (restaurants), Autodesk (architecture and construction), nCino (banking), and Guidewire (insurance). These businesses often dominate niche but defensible markets, as deep domain expertise, sticky customer relationships and high switching costs support low churn rates (renewal rates regularly exceed 95%) and create high barriers to entry.

Many of the AI solutions currently on offer aim to serve a variety of general uses. However, most customers don't want general tools that they still have to figure out for themselves; they want solutions that are ready to be deployed out of the box to address their specific needs.

Many of the industries served by vertical market software lack any technical capacity to build and maintain bespoke solutions. Even in more tech-savvy sectors, choosing to build software inhouse instead of using proven existing offerings can introduce significant operational and compliance risk. Developing a software solution is rarely a one-off exercise and will likely require ongoing updates and maintenance to ensure that it maintains its functionality. For many businesses, it makes more sense to focus on their core competencies instead of on software development. We therefore believe that vertical software developers will continue to have a strong position in the market.

Vertical software vendors are themselves also leveraging AI to expand their value propositions. With proprietary datasets and a superior understanding of the regulatory landscape and industry-specific challenges, vertical software companies are often uniquely positioned to embed AI in a meaningful way. It stands to reason that vertical software engineers would also be able to leverage increased efficiency to accelerate product launches and stay ahead of the competition, or to reduce costs and keep prices competitive.

AI is reshaping how software companies monetise their products.

Similar to how business models had to adapt as we moved from mainframe computers to PCs and eventually to mobile and cloud, AI will force software vendors to rethink their monetisation strategies.

Many modern software business models have shifted to user- or seat-based licensing models billed at regularly recurring intervals. However, as AI drives efficiencies and automates tasks previously handled by people, this could shrink their target markets. Usage-based or outcome-driven pricing strategies may prove more appropriate and should better align customer costs with the value derived from these offerings.

Still, monetising AI capabilities is proving complex. Customers have quickly come to expect freely available general applications to serve their basic needs and for software firms to bolt AI features onto their existing offerings. However, for genAI to be a sustainable business, customers will ultimately have to be convinced to pay for it.

Ultimately monetisation will depend not on the novelty of AI, but on the measurable ROI it delivers. Software vendors will have to demonstrate an ability to deliver tangible savings or new revenue streams to customers that justify the cost. The vendors that are most likely to succeed are those that are best able to address specific industry pain points, link pricing to performance and deliver tangible economic value.

There are key factors that will shape AI's impact across software businesses.

We do not expect AI to affect all software companies equally. Nevertheless, some key factors that could influence software business models are included below.

- Access to high-quality, proprietary data and large install bases could give companies an edge in training and fine-tuning models.

- Software that is able to learn and evolve by incorporating real-time feedback could create network effects and feedback loops where performance improves with use.
- Cloud platforms that are flexible and easy to integrate with other tools should be better positioned than monolithic legacy systems.
- Enterprise software that is deeply integrated into customer workflows, or where accuracy and dependability are key, may be harder to disrupt.
- A need to conform to strict compliance or regulatory requirements could favour established companies over unproven new entrants.
- Software that serves broad, general use cases, or more lucrative profit pools may be bigger targets for new competition.
- Companies that serve more tech-savvy customers may face greater pressure from those customers trying to develop internal solutions.
- Providers that maintain deep industry knowledge, are well versed in industry-specific practices and are integrated into customer workflows (like vertical market software) should benefit from higher switching costs.
- Software that requires frequent updates for constantly evolving needs should be better protected than those with one-off license sales.
- Companies will have to actively leverage AI to boost productivity and reduce costs to remain competitive.
- Knowing when to prioritise AI initiatives, including allocating capex and R&D, will be important for existing companies to adapt.
- Leadership will have to be able to recognise when retrofitting is no longer sufficient, and it is necessary to rearchitect platforms to ensure long-term success.

AI presents an opportunity for investors to identify the next generation of software leaders.

The rise of genAI marks a pivotal moment for the software industry; one that brings both significant opportunity and considerable disruption risk. While some current AI solutions may still be immature and overhyped, the long-term implications could be profound. It is also likely that the current form of genAI may not be the end state, but merely another step towards broader Artificial General Intelligence.

Historically, the winners of each new technology wave have significantly eclipsed prior incumbents in terms of value creation. The winners are likely to be those companies that view AI not merely as an enhancement, but as a catalyst to reimagine how software is built, distributed, and monetised. Investors that are able to identify this next wave of leaders stand to benefit meaningfully from the coming transformation.

Glacier Research would like to thank Ryno Truter for contributing to this week's *Funds on Friday.*

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Ryno is an equity analyst, responsible for researching developed market equities. His career in the investment industry started in 2010 with a year-long graduate programme at Bank of America, after which he moved on to become an equity analyst at Renaissance Capital. He joined Nedgroup Investments in 2012, where he spent 10 years as an equity analyst. During this time, he also served as co-manager of the Nedbank Private Wealth Small and Mid Cap Fund. Ryno joined Denker Capital in 2023.