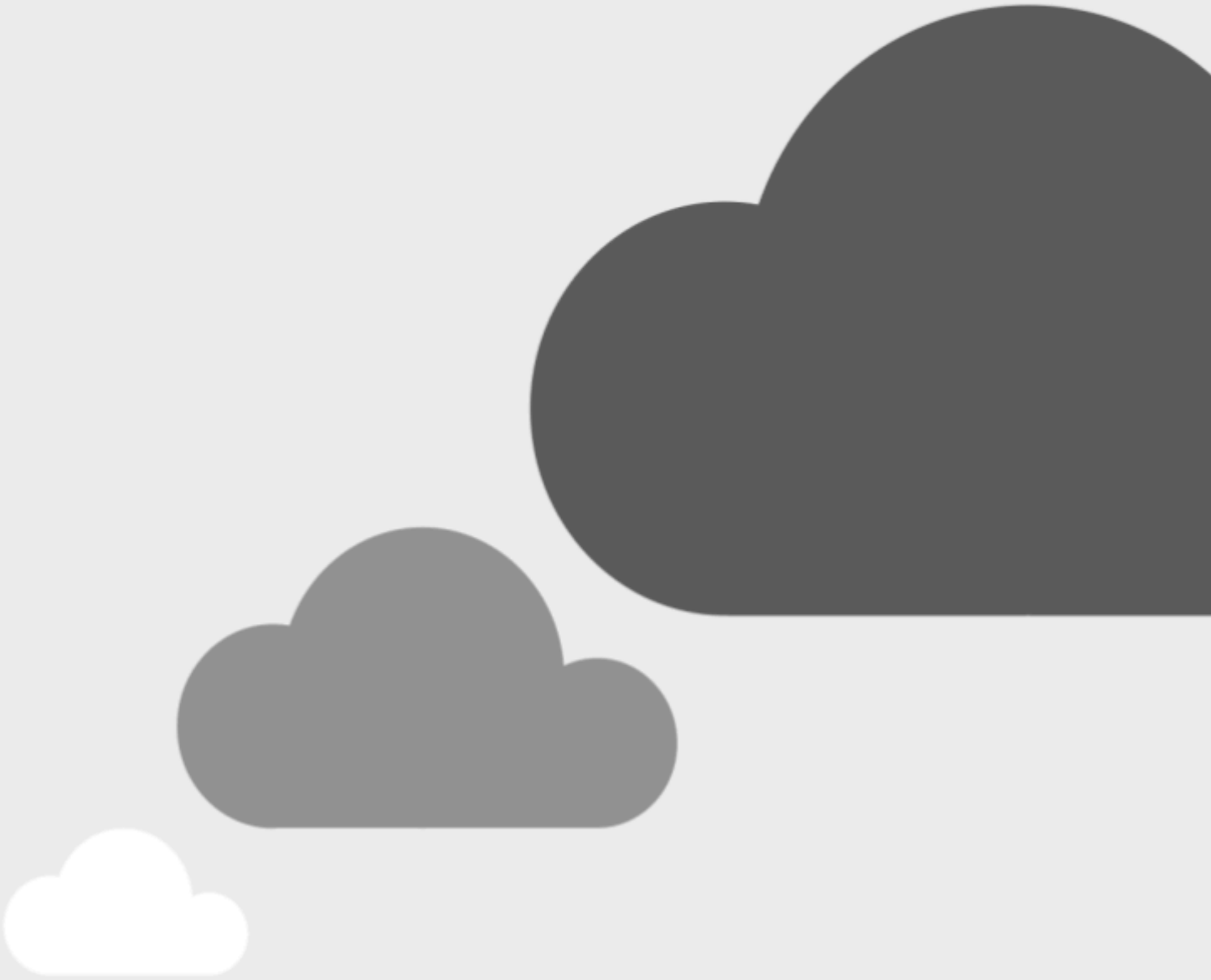

# How Big Cloud becomes **Bigger**

## Scrutinizing Google, Microsoft, and Amazon's investments

By David Gray Widder and Nathan Kim

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# Table of Contents

# 1. Introduction and summary

In an AI gold rush,[1] those selling the proverbial pickaxes are surest to win:[2] cloud companies provide scalable managed computational resources as a subscription service now used by most businesses to store their data,[3] and as a primary ingredient to build and use AI.[4] Just three companies—Amazon, Microsoft, and Google—control two thirds of global cloud compute market share,[5] collectively comprising "Big Cloud." This highly concentrated market raises concerns regarding digital sovereignty, slowed innovation, and a concentration of corporate power.[6]

But cloud computing is not an ordinary pickaxe: it is leased on subscription, easy to pick up, and very hard to put down. Scholars and regulators express concern that smaller cloud providers cannot compete with the free cloud credits Big Cloud doles out,[7] and if customers did want to switch or leave the cloud altogether, Big Cloud's lock-in strategies make this difficult, including licensing practices, egress fees, minimum spend contracts,[8] and the bundling of unrelated products. These are some of the most prominent mechanisms by which companies become dependent on Big Cloud.

In this report, we explore another underrecognized manner in which AI ecosystems increasingly depend on Big Cloud: Big Cloud's investment in other companies. We show how **Big Cloud companies are prolific investors widely deploying hundreds of billions of dollars over thousands of deals, often in smaller, lesser-known startups**. We find that:

1. While some regulators have begun to scrutinize the largest of these deals—such as Microsoft's investment in OpenAI or Google and Amazon in Anthropic[9]—the ecosystem-wide scale of this investment is hard to overstate: **Big Cloud invests as frequently and at similar amounts to the largest venture capital firms and startup accelerators.** Further, **Big Cloud invests about ten times as often as other Big Tech companies, and ten to a hundred times more in total dollar amounts.** (Sec. 2.1)

Further, the way Big Cloud allocates its investments merits closer examination:

2. **Via accelerator programs, Big Cloud companies lock startups into their cloud infrastructure.** Big Cloud ensnares young startups in their cloud ecosystem via cloud

[1] Cahn, "AI's $600B Question."
[2] Widder and Hicks, "Watching the Generative AI Hype Bubble Deflate."
[3] Taylor, "Percent of Corporate Data Stored in the Cloud 2022."
[4] Widder et al., "Why 'Open' AI Systems Are Actually Closed, and Why This Matters."
[5] Taylor, "Percent of Corporate Data Stored in the Cloud 2022."
[6] von Thun et al., *Engineering the Cloud Commons*.
[7] Autorité de la concurrence, "Market Study on Competition in the Cloud Sector."
[8] Fed. Trade Comm., "Cloud Computing RFI."
[9] Federal Trade Commission, *Partnerships Between Cloud Service Providers and AI Developers*.

credits while requiring startups use the Cloud company's other tech, and incentivizing strategies with particularly heavy cloud needs, such as generative AI. (Sec. 2.2)

3. More so than when other Big Tech companies or VC firms invest, **startups funded by Big Cloud are more likely to rely on Big Cloud as their lead or sole investor.** These relationships allow Big Cloud to exercise significant influence over startups and bend them to their interests.(Sec. 2.3)
4. Amid concerns[10] that vertical integration may give one firm too much control over AI supply chains—such as chips, cloud, or data—our work shows that **Big Cloud is *investing* in a way that brings many of the same risks as conventional forms of vertical integration**: when Big Cloud invests in an AI supply chain company—such as a Data, *X*-as-a-Service, or Internet infrastructure company—that company is often more likely to be dependent on that Big Cloud company as their sole or lead investor, compared with other investors. (Sec. 2.4)
5. Intensifying concerns about threats to global digital sovereignty, we find that **American Big Cloud companies make global investments at a far greater pace than other investors we compare against.** Just over half of all Big Cloud investments are made internationally, about twice the frequency of large VCs, top accelerators and other Big Tech companies. Big Cloud also invests through accelerators abroad much more often than at home, highlighting the need for global regulatory scrutiny of startup accelerator programs. (Sec. 2.5)

While these practices merit creative regulatory and policy responses, **we emphasize that such interventions should proceed in light of the following overarching implications**:

- **Dependence on Big Cloud is not just technical or contractual. It is also financial, as a source of investment. This compounds the need for structural separation**: Amazon, Google, and Microsoft must be compelled to split their cloud business from their other businesses that run on the cloud, per past calls,[11] so that they do not both provide infrastructure and compete with the customers *and investees* relying on that infrastructure.
- Big Cloud companies are huge investors, which sets them apart from all other large tech companies. **Any one of these investments may be small and insignificant, but they cumulatively shape the startup and developer ecosystem in Big Cloud companies' interest.** Thus, in addition to "deal by deal" scrutiny, in which only the largest deals receive attention,[12] regulators and researchers should monitor and scrutinize these investments and their effects in an ecosystem-wide, cumulative, and ongoing manner.

[10] Narechania and Sitaraman, "Antimonopoly Gov. of AI"; Luitse, "Platform Power in AI."
[11] von Thun et al., *Engineering the Cloud Commons*; Vipra and West, "Computational Power and AI."
[12] Federal Trade Commission, *Partnerships Between Cloud Service Providers and AI Developers*.

# 2. Research findings

## 1. Big Cloud are **Big Investors:** not just controlling infrastructure, but investing billions to shape markets

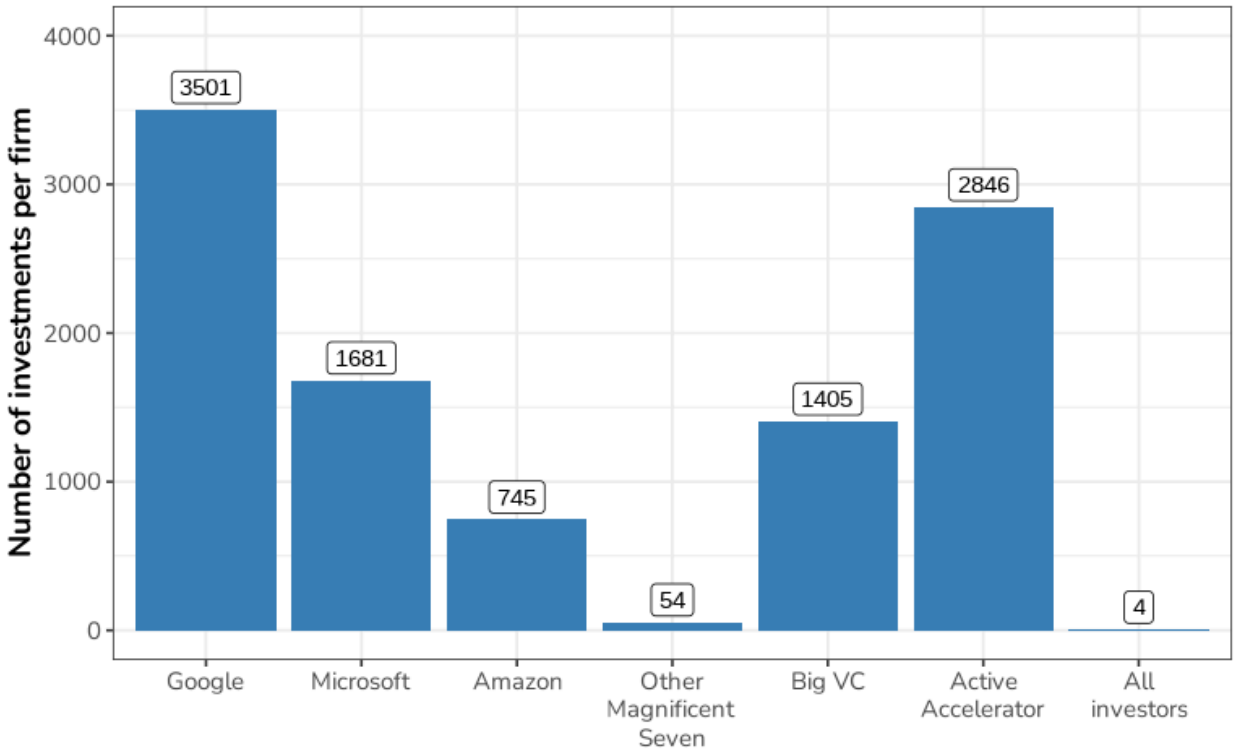


**Figure 1**. Big Cloud invests much more often than other important investors. Here and elsewhere, Google, Microsoft and Amazon are per-firm totals, whereas other bars are averages across their group.

Big Tech employs myriad strategies to consolidate their power and stave off competitors. Several of these emerge from three Big Tech companies' dominance in the cloud market: Amazon, Microsoft, and Google.[13] For instance, in order to build out costly cloud infrastructure, Big Cloud companies were able to sustain large financial losses, losses which new entrants or smaller competitors are unable to sustain. The multi-sector nature of these Big Cloud companies is key: Amazon's existing e-commerce business provided resources and expertise to build out Amazon Web Services (AWS), and the US Department of Justice (DOJ) has recently suggested that

[13] von Thun et al., *Engineering the Cloud Commons*.

Google's dominance in advertising, which a court ruled resulted from anticompetitive practices,[14] may help it extend its dominance into the relatively newer AI space.[15]

But Big Cloud's anticompetitive practices aren't just technical, but also financial. Our first finding demonstrates the scale of this phenomenon: **Big Cloud companies are prolific investors deploying billions of dollars over thousands of deals**. In later sections, we examine how the sheer scale of these investments allows them to pursue anticompetitive practices unchecked.

**Other tech giants aren't doing the same — Big Cloud as a whole invests one hundred times as often as the rest of the "Magnificent Seven",** and several hundred times more than the typical investor in our dataset. Big Cloud's number of investments are comparable to the top ten venture capital firms like Accel and Sequoia Capital ("Big VC") and top ten accelerator programs like Y Combinator and Techstars. Google is a particularly prolific investor, at 3,501 total investments tracked by Crunchbase, followed by Microsoft at 1,681 investments and Amazon at 745 investments, with 215 deals for all other Big Tech firms.

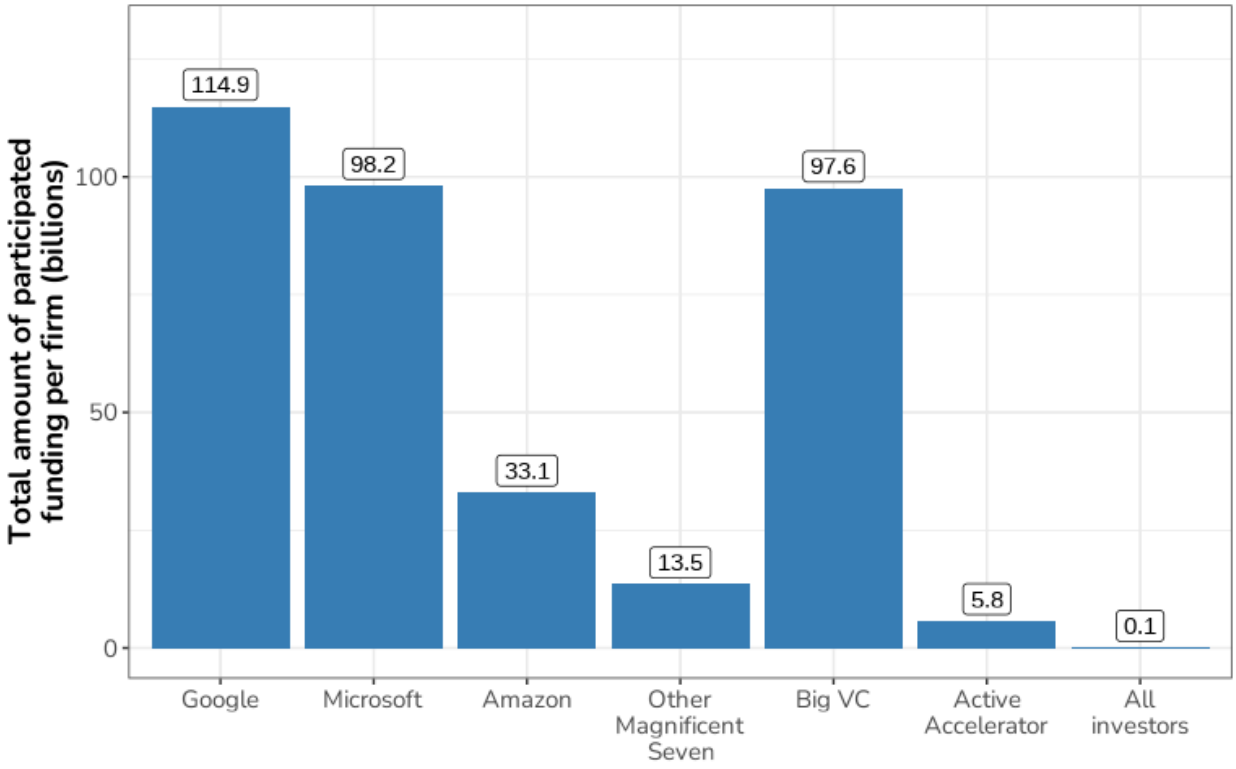


**Figure 2.** Big Cloud participants participate in significantly more funding than other Big Tech companies.

[14] Department of Justice, *Department of Justice Prevails in Landmark Antitrust Case Against Google | United States Department of Justice*.

[15] Godoy and Godoy, "FTC Backs DOJ Proposal in Google Search Antitrust Case."

**Not only does Big Cloud invest prolifically, but it also participates in a huge dollar amount of funding**, as depicted in Figure 2. **Big Cloud companies together participated in deals totaling $235 billion dollars, four times more than all other Big Tech companies** in the "Magnificent Seven" which participated in deals totaling only $53 billion dollars.[16] Google, for instance, has participated in a total of $115 billion in funding while the typical top accelerator has participated in just $5.8 billion. In conjunction with the findings in Figure 1, it is clear that Big Cloud invests with the frequency of leading accelerators but with the scale on par with traditional VC giants.

As we reveal in the following sections, that sheer scale of investment means Big Cloud's investments are an underdiscussed but significant method by which it builds market power: **Big Cloud invests massive amounts of resources that their competitors cannot in a play to build market share.** Adding to past findings on Big Cloud's anticompetitive strategies, we empirically examine how Big Cloud invests broadly across AI ecosystems, to capture startups into their cloud, to protect and build their market share, to expand into new global markets, and shore up their collective stranglehold on the cloud and AI ecosystems via vertical investments.

[16] Crunchbase tracks the total dollar amount of a funding round, and which companies participated in it, but not the breakdown of which participants contributed which amounts that make up this total (see Methods and Data). This also means that the total dollar valuation of all deals involving Big Cloud entities is smaller than the valuations of all deals Google, Microsoft, and Amazon each participated in as they occasionally participated in the same deals.

## 2. Big Cloud invests heavily through accelerator programs to lock in startups early

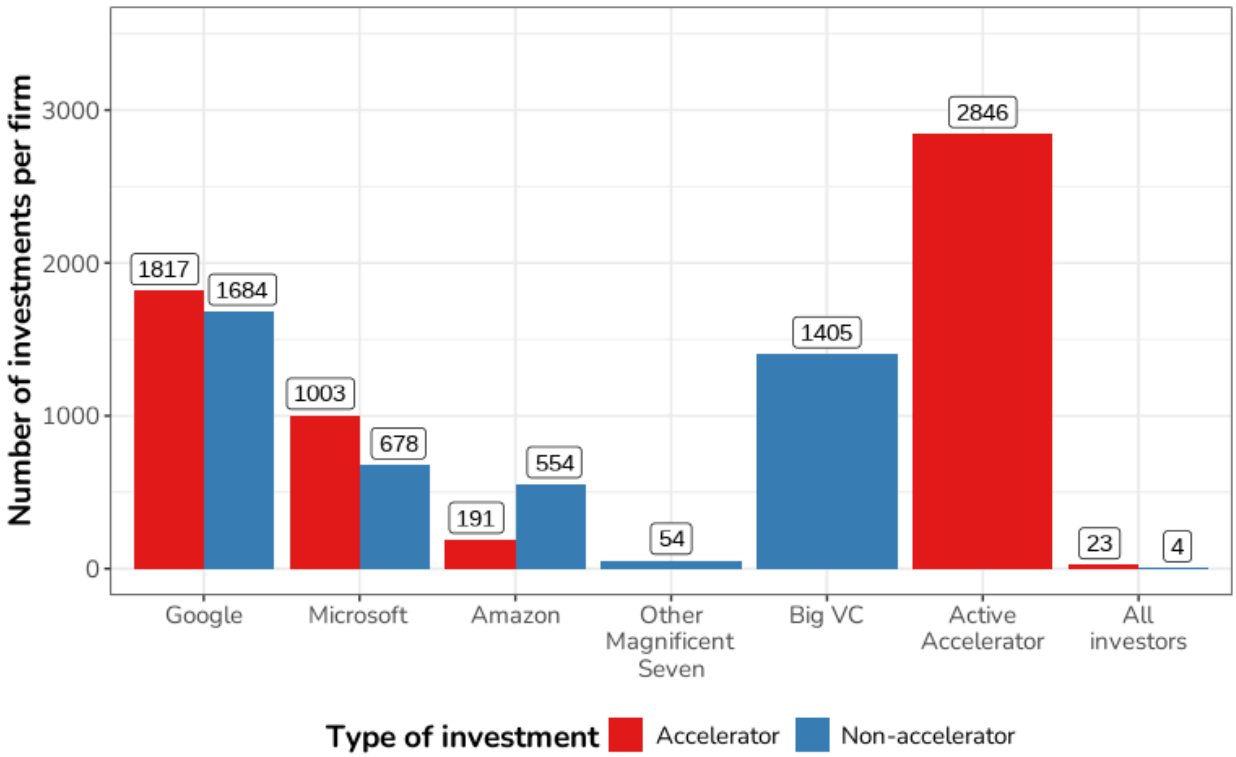


**Figure 3**. Big Cloud invests prolifically across accelerator and non-accelerator investments.

Big Cloud companies run fixed-term, cohort-based startup accelerator programs akin to Y Combinator. Figure 3 shows that a majority of Google and Microsoft's investments are run through their accelerator programs, whereas the reverse is true for cloud market power leader Amazon. Big Cloud giants will often give out cloud credits, offer co-marketing opportunities, and provide founders with guidance. Amazon, for example, advertises the opportunity to "co-build, co-market, and co-sell with AWS to accelerate your growth", and purports to have offered an eye-watering cumulative sum of $1 billion in cloud compute credits every year to startups building their companies on its AWS platform.[17]

**These accelerator programs are often location or technology specific, enabling Big Cloud to expand their market power in emerging technologies or enter markets.** For example, Google for Startup's "Africa Program" offers up to $350,000 in Google Cloud credits, "strategic guidance" and "mentorship from Googlers and industry leaders".[18] Two other Google programs,

[17] Schoeberl, Christian and Corrigan, Jack, *Part 3: Corporate Investments as Golden Handcuffs*, 3.
[18] Google, "Applications Now Open for the 2025 Google for Startups Accelerator Africa Program."

established in 2020, are Google's "Black Founders Fund"[19] which operated within the US, and their "Latino Founders Fund"[20] which operated across the Americas. The former program was ostensibly open to any business type and was said to "strengthen communities, and create generational change", while the latter was scoped to only startups using AI. Both offered cloud compute credits and also equity-free cash awards. On this latter note, Google stands out: as seen in Table 4, a stunning 86% of its accelerator program deals are non-equity, compared to just 2% of its non-accelerator programs. 60% and 50% of Microsoft and Amazon's accelerator investments, respectively, are non-equity investments.

Why does Big Cloud run these programs? Fervent marketing notwithstanding, these programs are not run out of goodwill: we can safely assume it is in their own financial interest to do so. As recognized in past work, "technology companies gain influence over fledgling companies [ ] through 'accelerator' or 'incubator' programs, often designed to "draw startups into the Big Three's product ecosystems".[21] Once they are in their ecosystem, an emerging consensus across scholars and regulators alike raises concerns with Big Cloud's lock-in mechanisms—egress fees, minimum spend requirements,[22] tying and bundling[23]—which will keep them in their ecosystems. Big Cloud even offers discounts if companies agree voluntarily to locking in deals for often several years at a time.[24] As recognized by the French Competition Authority, this lock-in effect is compounded if free credits are "combined with free coaching and training programs at universities and start-ups to accustom the youngest developers to the services of a single provider."[25]

**Accelerator programs also help Big Cloud companies steer the market towards technologies which are beneficial to their long-term interests.** Google's previously mentioned Africa Program, as another example, requires that candidate startups be must "have an AI-first approach" or be "meaningfully integrating AI into their operations" and further "are open to leveraging Google products to enhance their solutions"[26] In other words, such programs are not geared at technology startups generally, but only toward those which stand to require significant cloud compute in the future, and specifically express excitement about building around Google's offerings. This is even more apparent in Amazon's case: Amazon offers $100,000 in AWS Credits for startups, but "may" offer three times more ($300,000) for "Generative AI startups

[19] "Google for Startups Black Founders Fund."
[20] "Latino Founders Fund - Google for Startups."
[21] Schoeberl, Christian and Corrigan, Jack, *Part 3: Corporate Investments as Golden Handcuffs*, 3.
[22] Autorité de la concurrence, "Market Study on Competition in the Cloud Sector"; Fed. Trade Comm., "Cloud Computing RFI."
[23] Vipra and West, "Computational Power and AI."
[24] Amazon Web Services, "Reserved Instances (RI): Save When You Reserve"; "What Are Azure Reservations?"
[25] Jalabert-Doury et al., "French Competition Authority Publishes Opinion On Cloud Computing."
[26] Google, "Applications Now Open for the 2025 Google for Startups Accelerator Africa Program."

building foundation models", disproportionately subsidizing businesses which demand a huge amount of cloud compute, on an ongoing basis across model development and different releases, thus selecting for startups that will be profitable to and dependent on the Big Cloud firm's cloud services. And this influence is likely to extend beyond those startups which apply or are accepted: as scholars examining corporate startup accelerators recognize, Amazon's accelerator serves as a "marketing tool in the developer and startup community to promote the adoption of the Alexa ecosystem more broadly"[27]. In short, while large partnerships may be increasingly scrutinized by antitrust regulators,[28] Big Cloud's accelerator programs should face the same scrutiny: they allow Big Cloud to influence both startups in their program but also the wider developer and startup ecosystems towards business models with high cloud computing demands generally, and toward dependence on their cloud offerings specifically.

**Beyond their concerning effect on developer and startup ecosystems, accelerator programs raise wider anti-competivive concerns in cloud computing markets.** Past scholars raise concerns that Big Cloud may engage in restricting or downgrading access to certain businesses, while "favoring customers they have special relationships with *(such as startups they have invested in)*"[29] (emphasis added). While general eligibility criteria are made available online (such as those we quote from), the criteria by which Big Cloud companies internally choose between multiple applicants meeting these public criteria remain opaque. As recognized by past scholars who state that "cloud infrastructure providers are strongly incentivized to self-preference,"[30] these criteria are likely to preference and complement Big Cloud companies' own product strategies. These programs may additionally constitute a form of pricing discrimination, by providing free services that others must pay for, alongside engaging in other discriminatory and opaque pricing mechanisms as an anticompetitive strategy in the cloud sector. For example, only one-fifth of cloud contracts abide by prices posted on Big Cloud companies' websites,[31] meaning that would-be rivals cannot examine the prices they must compete with, and enabling incumbents to tailor discounts as needed to prevent startups from switching to a competitor. Further, as the French competition authority recognizes, the high amounts of free cloud compute credits offered "set them apart significantly from free trials" seen in other contexts, and "raise doubts about the ability of all cloud providers to offer them profitably,"[32] thus shutting out newer or smaller cloud companies which may not be able to afford to give away hundreds of thousands of dollars worth of their service for free. And it appears that this is a real risk, as Amazon doubled the cloud credits it was offering startups after

[27] Maio and Giudici, Giancarlo, "Corporate Venture Capital and Corporate Accelerator."
[28] Federal Trade Commission, *Partnerships Between Cloud Service Providers and AI Developers*.
[29] von Thun et al., *Engineering the Cloud Commons*.
[30] Vipra and West, "Computational Power and AI," 44.
[31] von Thun et al., *Engineering the Cloud Commons*.
[32] Autorité de la concurrence, "Market Study on Competition in the Cloud Sector."

Microsoft gained ground in cloud market share.[33] **In summary, accelerator programs are run in opaque and likely self-preferential ways. They also offer huge amounts of free cloud computing credits, which newer or smaller cloud companies will struggle to emulate and thus struggle to compete with Big Cloud.**

[33] Novet and Rooney, "Amazon Is Doubling Value of Credits for Some Startups to Build on AWS as Microsoft Cloud Gains Ground."

# 3. Companies depend on their Big Cloud investor

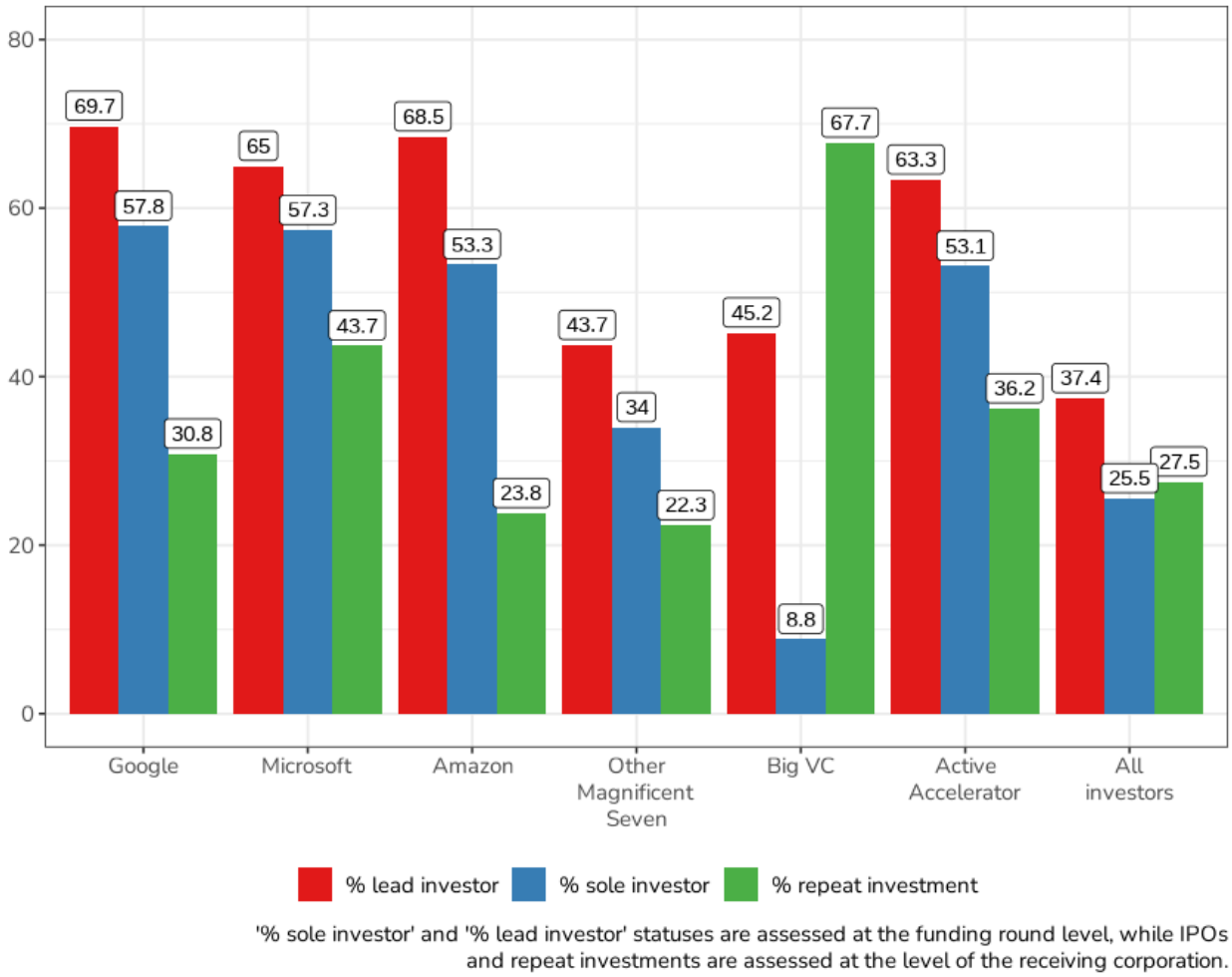


**Figure 4.** Big Cloud companies are more often the lead and sole investors in target firms, compared with other Big Tech companies and Big VCs, raising concerns of financial dependence on Big Cloud investors.

**Our analysis shows that Big Cloud builds financial dependence via their investment, intensifying other forms[34] of infrastructural, technical, and contractual dependence.** Here we illustrate this financial dependence with two measures: the percentage of time that Big Cloud companies *lead* an investment funding round, and the percentage of time that Big Cloud companies are the *sole investor* in a funding round. Big Cloud companies lead deals nearing 70% of the time, roughly on par with Accelerator programs, and far above other Magnificent Seven large tech companies and VC firms, which lead deals about 45% of the time on average. Big Cloud companies are the sole investor in a deal around 55% of the time, at a similar rate to

[34] von Thun et al., *Engineering the Cloud Commons*; Vipra and West, "Computational Power and AI"; Autorité de la concurrence, "Market Study on Competition in the Cloud Sector"; Balayn and Gürses, "Misguided."

Accelerator programs, and exceeding other Big Tech companies which average about 34% of the time, and far exceeding VC funds at 9% of the time.

The dependence of companies on lead investors is hard to overstate. As one startup advice column relays, the lead investor is the "first and most significant" entity to contribute capital in a funding round, whose involvement forms a "signal to other potential investors about the startup's credibility and potential".[35] Their involvement often extends beyond investing capital and into deciding how to run the business, including "shaping its strategic direction", even going so far as to include formal "governance and advisory roles, such as securing a seat on the board of investors", while others call lead investors the "captain of the ship".[36] This demonstrates that not only does leading an investment round often imply financial dependency, but also implies significant influence into operations. Sole investors, as one would expect, are even more important, as without them, there is definitionally no funding round, and we expect similar influences to exist here too.

What practices might dependent startups be influenced to adopt? One particularly concerning practice is so-called "circular spending". As per the US FTC's recent investigation, investment partnerships often "require AI developers to spend a large portion of their [Big Cloud investor's] investment on cloud services from their [Big Cloud] partner".[37] It is especially notable that they call out this as a concerning practice, even though they write in the context of their investigation of actors—such as OpenAI—with much higher relative bargaining power vis-a-vis their Big Cloud investor than most companies we study. Like the accelerator programs, where large amounts of free cloud compute credits are in fact redeemable only on Big Cloud's platform, such circular spend stipulations comprise a form of "investment" which provides greater returns for the Big Cloud investor than may initially appear. Big Cloud entities use their influence to funnel money back onto their own platforms and recoup their investment, tying the company receiving investment to the Big Cloud platform in the process.

**This dependence—infrastructural, technical, contractual, and now financial—is so strong as to risk scaring off other investors.** In a market where AI startups "must secure compute credits or make other contractual arrangements"[38] with Big Cloud to access compute, and in cases where they further depend on their Big Cloud for capital, this creates a risk that the cloud company may abuse this dependency by stealing ideas or otherwise abusing this relationship. This dynamic is so extreme that other VCs are wary to invest in what other scholars call a "kill zone," these scholars asking "why would anyone invest in a new venture, when the dominant

[35] Eeles, "Unlocking Startup Success."
[36] Long Term Stock Exch., "What Is a Lead Investor?"
[37] Federal Trade Commission, *Partnerships Between Cloud Service Providers and AI Developers*.
[38] Vipra and West, "Computational Power and AI," 7.

cloud provider is likely to just copy the idea and integrate it into their platform?"[39] This dynamic is particularly concerning where Amazon has already competed with its customers in the past.[40] Other scholars characterize this market as one with a high likelihood for the powerful platform company to act as a "shark" and steal an investment target firm's intellectual property.[41] In other words, the massive power wielded by having an oligopoly on cloud compute compounded by startup's financial dependence on Big Cloud may yoke a startup so fully to their Big Cloud overlord that it may dissuade other investors. This creates a void of investment in which Big Cloud's accelerator programs (discussed in the previous section) can then fill, and build dependence on their cloud offering in the process, thus securing a cut of the companies' revenue in cloud fees, and perhaps even secure stakes in these companies at a discount, as they do not have to compete with the VCs scared off by the kill zone created in their wake.

[39] Narechania and Sitaraman, "Antimonopoly Gov. of AI," 25.

[40] Novet, "Amazon's Cloud Business Is Competing with Its Customers"; Leonard, "Amazon Has Gone From Neutral Platform to Cutthroat Competitor, Say Open Source Developers."

[41] Maio and Giudici, Giancarlo, "Corporate Venture Capital and Corporate Accelerator."

# 4. Big Cloud quietly vertically integrates via investment


**Figure 5a, b.** In most cases, Big Cloud companies are more likely to be sole or lead investors in AI supply chain companies than other Big Tech or VC investors. Note: very dark or very light squares may be volatile, see Tables 5 and 6.

Vertical integration when a company seeks to control more than one stage in the supply chain. This can reduce competition in two main ways: firstly, firms may use monopoly power in one stage to disadvantage or eliminate competitors in other stages as they seek to become dominant in that stage too, or secondly, firms may simply buy competitors which operate at a different stage before they can themselves become horizontal competitors.[42] The result is a company with

[42] Abdela et al., "Vertical Integration and the Market Power Crisis."

massive market power, because "either consumers or suppliers have no other route to either obtaining what they want or to getting their products to market than to go through [the] powerful intermediary or gatekeeper".[43]

In the context of AI, vertical integration may look like a cloud company buying or becoming a chip designer—upstream in the supply chain as an input to cloud computing; or building models in-house—downstream in the supply chain with cloud computing as an input to model building.[44] It is important to note that Big Cloud is *already* highly vertically integrated: past policy reports note that these companies "own the underlying 'upstream' infrastructure while also competing against businesses dependent on this infrastructure in 'downstream' activities, such as model development." For example, cloud compute provider Google is also designing its own "TPU" AI chips in an attempt to vertically integrate upwards and compete with chip designer Nvidia, and also building its own Gemini models in an attempt to vertically integrate downwards to compete with other model builders such as OpenAI. Big Cloud companies operating in other domains have faced scrutiny from competition regulators for vertical integration—for example, Australian competition regulators called out Google for their vertical integration in the advertising tech supply chain. Google appears to have modified their messaging in response to competition concerns inherent in their vertically integrative strategy: when they recently acquired Israeli cloud security company Wiz—in a move which triggered antitrust review by the Trump Department of Justice[45]—the company's announcement emphasized that "Wiz's products will continue to work and be available across all major clouds."[46]

There are many possible anticompetitive consequences from vertical integration in cloud computing, including "cross-subsidization between cloud computing and other business lines, using ownership of other services to steer customers towards proprietary cloud infrastructure, and using insights collected from cloud customers to compete against them in other markets,"[47] alongside simply providing preferential treatment to one's own downstream endeavors. As legal scholars Tejas Narechania and Ganesh Sitaraman recognize: "vertically-integrated firms that dominate utility-like services (such as cloud computing) can leverage that power [...by...] tying products, integrating products together, predatorily pricing competitors in downstream markets, charging unreasonable prices for utility-services to downstream competitors, copying the products of downstream competitors, and self-preferencing their own downstream products, among others."[48] As Narechania and Sitaraman state plainly: vertical integration is ultimately

[43] Abdela et al., "Vertical Integration and the Market Power Crisis."
[44] Vipra and West, "Computational Power and AI," 44.
[45] *Reuters*, "Google's $32 Billion Deal for Wiz Gets Antitrust Review, Bloomberg News Reports."
[46] Google, "Google Announces Agreement to Acquire Wiz."
[47] von Thun et al., *Engineering the Cloud Commons*, 8.
[48] Narechania and Sitaraman, "Antimonopoly Gov. of AI," 38.

"likely to restrict the number of providers of services at downstream layers in the stack, reducing innovation and choice."[49]

While competition regulators may be on the watch for competition concerns as Big Cloud builds out vertical capacities in house, and will certainly be wary of any acquisition or merger towards further vertical integration, **our work shows that Big Cloud companies are *investing* in a way that brings many of the same risks as conventional forms of vertical integration, yet is less likely to attract scrutiny.** Using fine grained company categories included as part of the Crunchbase dataset, we observe that Big Cloud is investing in Developer Services, Infrastructure/ Platform /Software-as-a-Service, Data, Internet Infrastructure, and Hardware companies; and indeed, other Cloud companies too (see Tables in appendix). Moreover, as shown in Figures 5a and 5b, in many cases **when Big Cloud invests in an AI Supply Chain company, that company is more likely to be dependent on that Big Cloud company as their sole or lead investor** in that funding round**,** when compared with other large technology company investors (Apple, Meta, Nvidia) or venture capitalists (Accel, Sequoia Capital).

These investments in firms in other verticals are smaller in scale but numerous, and as we argue in the previous two sections, sole and lead investors can exert control over the target firm, and when made across an ecosystem or vertical, enables a broader control over that ecosystem or vertical, even while this strategy is less likely to trigger the alert of competition regulators.

[49] Narechania and Sitaraman, "Antimonopoly Gov. of AI," 5.

# 5. Big Cloud's dollars threaten global digital sovereignty

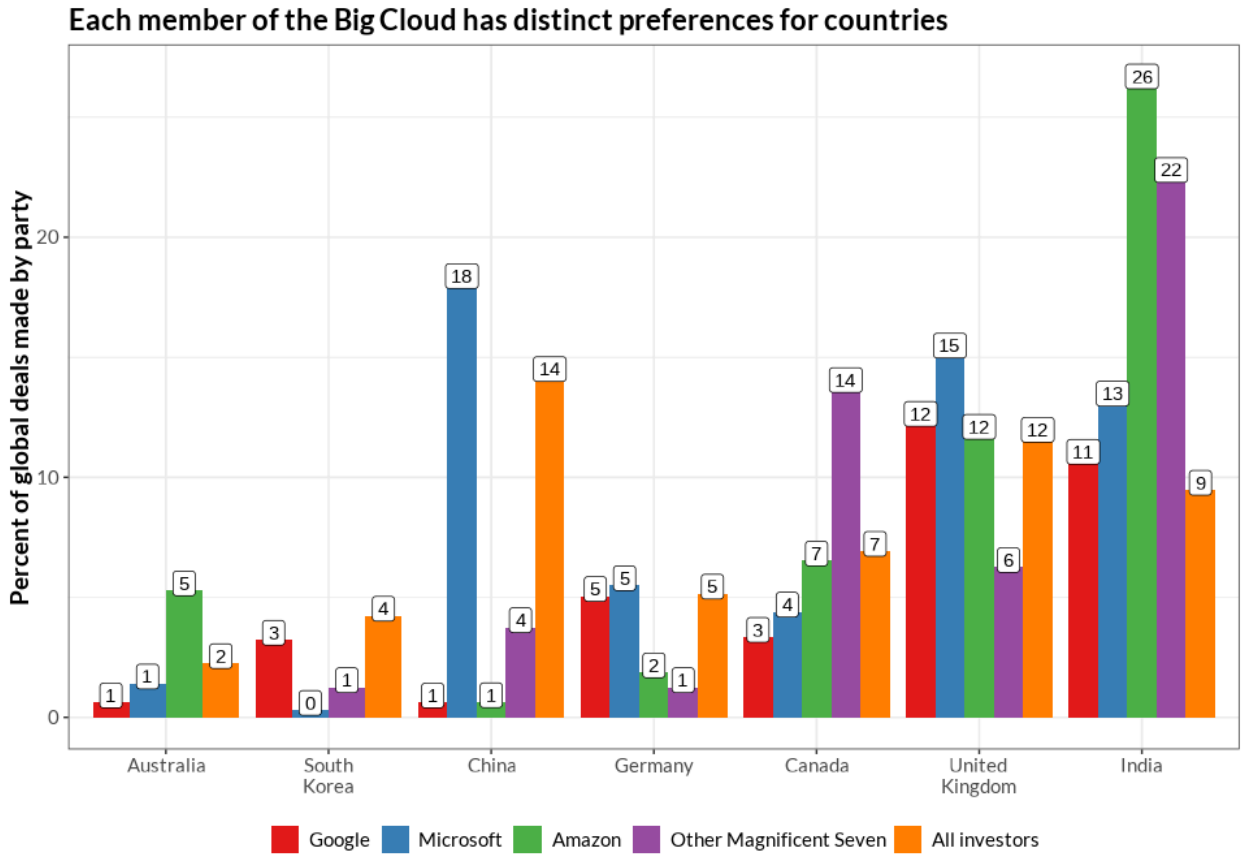


**Figure 6.** Each Big Cloud company has distinct geographic preferences—for example, 26% of Amazon's global investments are in India, and 15% of Microsoft's are in the UK.

Perhaps the greatest impact of the American Big Cloud's investments can be seen when we examine their global reach. Big Cloud's infrastructural nature, their importance to the contemporary digital economies, and the sheer size of these corporations—with each having annual revenue higher than one hundred and fifty countries' GDP—make these American corporations important geopolitical actors that may threaten the digital sovereignty of other nations.[50]

The Trump administration's deregulatory attitude will strengthen Big Cloud's power, and makes this a particularly pressing issue. Analysts expect that cloud giants may pursue mergers and acquisitions more openly[51] as the Trump administration has signaled a friendlier stance towards

[50] von Thun et al., *Engineering the Cloud Commons*.
[51] Goovaerts and King, "What the Trump Win Means for Cloud Policy."

mergers even as it has retained Biden-era merger guidelines,[52] and Trump replaced[53] Biden-era regulations around AI development with a strategy meant to "enhance America's global AI dominance."[54] In his second day in office, Trump announced OpenAI's Project Stargate,[55] a $500 billion AI infrastructure project funded by Softbank, Middle east fund MGX, and others, including Microsoft. Trump has also boasted of Google's $25 billion investment into data center infrastructure in Pennsylvania.[56] In support of initiatives like these, Trump declared a national "energy emergency" to ease regulations on new energy infrastructure for data centers.[57] Finally, the US Military is itself an eager customer of nascent AI services: with a July 2025 announcement of four contracts[58] to Google, Anthropic, OpenAI, and xAI (on the heels of xAI's Grok chatbot praising Hitler)[59]—with a ceiling of $200 million each.

As others point out, Trump's aggressive state investment in the American Big Cloud exacerbates existing threats to global sovereignty. Some label Big Cloud's business strategies as "cloud colonialism," pointing to the giants' excitement to bring customers in Latin America, Africa, and Asia into the cloud.[60] Other researchers reason that because the US government can demand data from US-based cloud providers using the Foreign Intelligence Surveillance Act and the Cloud Act, regardless of where this data is physically stored, this raises dire foreign policy and national security concerns.

Here, complementing these existing concerns, we examine how Big Cloud invests internationally. Building on past analyses,[61] we examine how often companies in each country receive investment, and the three cloud giants' unique preferences in their global investment strategies. **Big Cloud makes global investments at a far greater pace than the other investors we have compared against in this report. Further, just over half (50.2%) of all Big Cloud investments are made internationally.** While Google has the most number of investments abroad (1,645 investments, 47.1% of its total investments), Microsoft leads in the share of its investments which are abroad (1,001 investments, 59.5% of all of its investments), with Amazon at 322 investments abroad (43.6% of its total). This far outpaces all other Big Tech companies—at only 80 international investments total (37.2% of their share), large VCs (23.8%

[52] Wales and Haimi, *Antitrust Enforcers Will Take a Friendlier Approach to Mergers but Retain Biden-Era Guidelines and HSR Rules*.
[53] The White House, "Initial Rescissions Of Harmful Executive Orders And Actions."
[54] The White House, "Removing Barriers to American Leadership in Artificial Intelligence."
[55] Alex Gangitano, "Trump Announces up to $500 Billion Investment to Build AI Infrastructure."
[56] Kim and Levy, "Trump Promotes Energy and Tech Investments at a Summit in Pennsylvania."
[57] The White House, "Declaring a National Energy Emergency."
[58] Chief Digit. Artif. Intell. Off., "CDAO Announces Partnerships with Frontier AI Companies to Address National Security Missio."
[59] Taylor and reporter, "Musk's AI Firm Forced to Delete Posts Praising Hitler from Grok Chatbot."
[60] Mann, "The Era of Cloud Colonialism Has Begun."
[61] Schoeberl, Christian and Corrigan, Jack, *Part 3: Corporate Investments as Golden Handcuffs*, 3.

of their share) and active US accelerators (38% of their share). As Appendix Table 2 shows, they carry out these investments using dozens of corporate shell structures or partnerships with intermediary organizations.[62] These investments are not evenly distributed, as Figure 6 and 7 explore. Each of the Big Cloud entities form distinct preferences for countries, with Amazon having a decided interest in investments into Indian companies and Microsoft having by far the most aggressive investment relationship with China. Microsoft's accelerators in Chongqing and Shanghai are particularly prolific and have made 181 total investments.

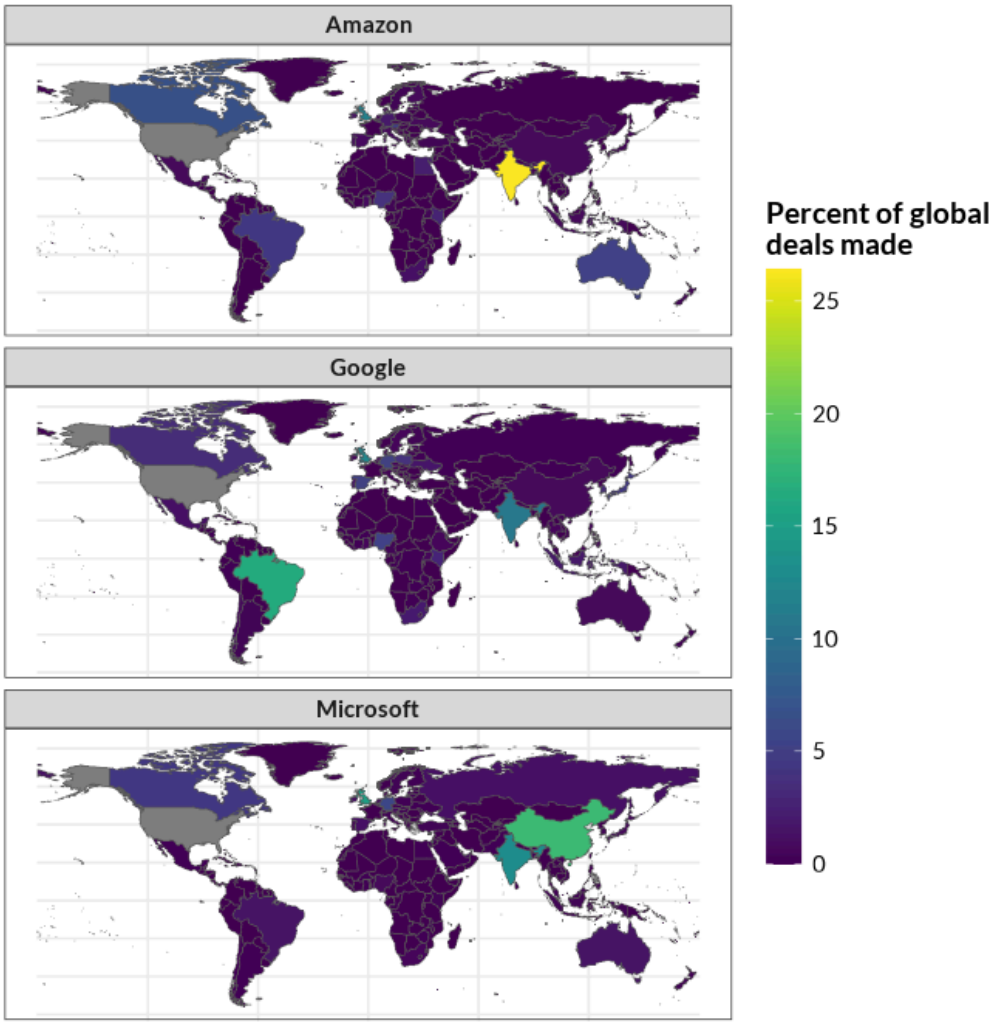


**Figure 7.** Maps illustrating the geographic preferences for each Big Cloud investor.

[62] One case of this is the AWS FinTech Africa Accelerator, run for one cohort and organized by Vestbee, a Polish firm connecting investors with startups. Vestbee had other programs with AWS, including a B2B SaaS accelerator for startups located in the UK, and accelerators focused on Web3, climate tech among others.

Big Cloud invests heavily abroad primarily to create or enter new markets. **As Figure 8 shows, Big Cloud has stark differences in investment practices abroad and domestically, investing primarily through accelerators abroad while prioritizing traditional investments at home.** Google, for instance, makes 79.5% (1,285) of its non-US investments using its accelerator programs, but just 26.8% (489) of its US-based investments are made through accelerators. This is notably a trend unique to the Big Cloud: investors overall and the ten most active accelerators don't show a similar preference for non-US activity for accelerator investments.

Building on our findings from Section 2 about Big Cloud's extensive use of accelerators, we argue that Big Cloud's preference for accelerators abroad reflects a strategic aim to expand influence in new markets, in contrast to their goal of reinforcing existing dominance at home. Because accelerators operate through cohort-based programs and target early-stage startups, they are especially effective for reaching a wide pool of emerging companies. This makes them ideal tools for seeding long-term presence and loyalty in less mature or developing ecosystems, where Big Cloud seeks growth rather than consolidation.

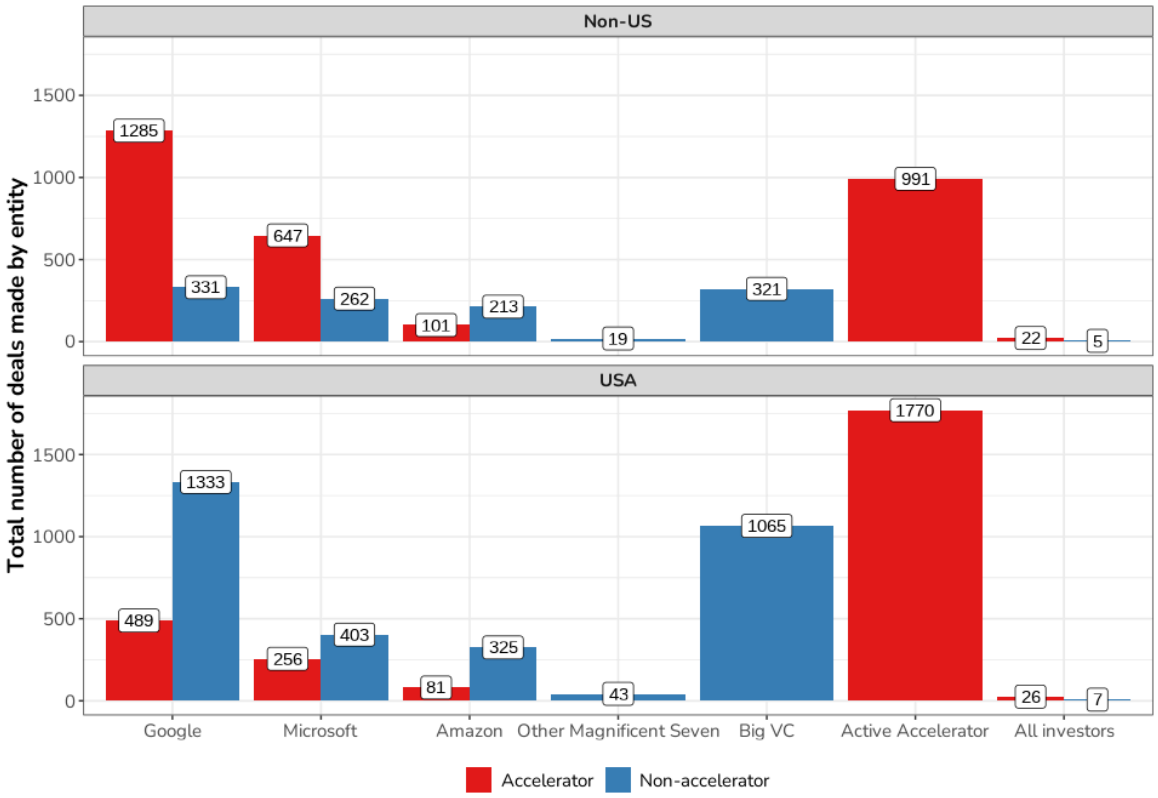


**Figure 8.** Big Cloud prefers accelerator investments abroad, but traditional investments at home.

How can nation-states across the globe respond to these encroachments? So far, existing regulation has promoted frameworks of digital sovereignty[63] and cloud sovereignty.[64] If threats to autonomy from the Big Cloud corporations are made toward individual citizens, major corporations, and even national security apparatuses, nations' fundamental notions of sovereignty are threatened. Calls for a EuroStack[65] are one particularly concrete articulation of this, arguing that concerns for sovereignty must stretch from control of material resources and energy all the way to accountability for consumer-facing products.

Our findings in this section reinforce the urgency of coordinated policy responses to Big Cloud investment through both traditional venture capital mechanisms and accelerator programs. As shown in Section 2, accelerators have become central to Big Cloud's market strategies. We show in this section that this is a particularly strong trend outside the United States, and deserves greater scrutiny as tools of Big Cloud's influence. This dynamic also calls for international coordination responding to Big Cloud's specific patterns of investment: Google investing with special preferences in India and Brazil calls for joint oversight through forums like BRICS. Similarly, European Union competition authorities should analyze investment trends across member states to coordinate a unified regulatory approach. Given others' analyses attributing a struggling AI ecosystem in Europe due in part to a weak VC funding ecosystem,[66] and calls for public cloud infrastructure in Canada,[67] countries may consider state-funded venture capital funds to support domestic startup ecosystems. Public investment and strategic direction across all stages of technological development and innovation are essential to fostering a model of cloud sovereignty that ensures true independence,[68] rather than relying on the corporate-led approaches such as Nvidia's contradictory call for Europeans to adopt "sovereign AI" by investing in Nvidia's infrastructure.[69] These state interventions to prevent US influence in investments can reduce reliance on foreign capital and infrastructure while fostering technological independence.

[63] Duranton, "Why Europe Needs A Sovereign Cloud In The AI Race."
[64] Ferreira Gomes, Alexandre and Okano-Heijmans, Maaike, *Too Late to Act?*
[65] Bria et al., *EuroStack – A European Alternative for Digital Sovereignty*; Scott and Bonfiglio, "XI. Why Europe's Cloud Ambitions Have Failed."
[66] European Commission. European Political Strategy Centre., *The Future of European Competitiveness. Part B, In-Depth Analysis and Recommendations*.
[67] Marx, *Canada Should Build Public Cloud Infrastructure Rather than Relying on U.S. Tech Giants - CCPA*.
[68] Fiebig et al., "Heads in the Clouds."
[69] Mukherjee, "Nvidia's Pitch for Sovereign AI Resonates with EU Leaders."

# 3. Future research needed

Our analysis opens a new line of inquiry when examining competition in digital ecosystems, but further studies are needed to fully develop actionable insights for policymakers. We identify several priorities that deserve further research here.

Future work should **examine trends in particular countries or regions**. Our analysis hints at possibilities of coalitional responses and international alliances to fight the anticompetitive policies described here, given the common interests against encroachment of US corporations, the investment strategies of Big Cloud favoring specific nations, and pre-existing relationships within the European Union and BRICS that may offer strategic advantages in competition policy. Further analysis is needed to understand what nation state-level factors make it profitable for American tech companies to adopt these nation-specific investment strategies, and what successful policy tailored to a specific country's needs may look like.

Another class of questions concerns how each of the Big Cloud entities came to adopt this kind of investment strategy, and **how their specific strategies may vary over time** as they become more or less dominant in a particular aspect of cloud infrastructure. We are also interested in understanding these investment practices in relation to historical events and industry-wide trends. These corporations may have shifted investment strategies during, and in the wake of, the COVID-19 pandemic, and they may have responded more or less quickly than other tech companies and investors to trends around crypto and the release of large language models.

Future work should also investigate **differences in investment strategies between the three Big Cloud giants**. In our analysis, we found that Amazon participates less frequently in startup investments overall, and typically commits smaller amounts of capital and prefers to engage in non-accelerator deals. Just 25.6% of Amazon's deals come from its accelerator programs versus Google's 51.9%, and Google invests five times as much overall. We hypothesize that this divergence can be explained by AWS's longstanding lead over both Azure and GCP, as AWS does not face the same pressure to aggressively court new users through investment into startups. Further analysis is needed to test this hypothesis, and to understand the varied ways that this difference—and other differences in business strategies among the three cloud entities—can lead to different kinds of anticompetitive practices.

# 4. Appendix

## 1. Methods and data

The data used for these analyses comes from Crunchbase, an American corporation whose primary product is a database of corporations, investors, and investments. Our analysis was conducted on a bulk export of the Crunchbase database from April 11th, 2025. At the time of writing in July 2025, this data are sourced[70] from 4,000 corporate members of Crunchbase's Venture Network, which submit their own investment data to Crunchbase in exchange for access to Crunchbase's full database. Crunchbase also relies on information submitted by its individual users, their own algorithms processing publications and government filings, and human data reviewers to clean the collected data.

For the sake of interpretability and data cleanliness, we made several changes to Crunchbase's data snapshot. When an investor was not marked as a sole investor by Crunchbase itself but was the only investor linked to a particular deal, we imputed that investor as the sole investor for that deal. When the lead investor on any given deal was missing from the data but there was only one investor present, we labeled that investor as that funding round's lead investor. "Lead investor" in this report is thus a strict superset of "sole investor."

We created three constructs for our analysis. Firstly, and most importantly, we identified corporate entities as belonging to one of the "Big Cloud" investors by searching for any entity that had the strings "Google" or "Alphabet" for the cloud giant Google, the string "Microsoft" or the exact match "Azure" for the cloud giant Microsoft, and "Amazon" or "AWS" for the cloud giant Amazon.[71] Secondly, "active accelerators", a full list of which is displayed in Table 3 below, is defined as the ten firms with the highest total number of investments tracked by Crunchbase, which are marked as "accelerators" by Crunchbase and are US-based (for the purpose of comparing with Big Cloud). Finally, "Big VCs" were chosen as the ten largest US-based (again, for comparison with Big Cloud) venture capital firms by assets under management (AUM).

[70] Crunchbase Staff, "Where Does Crunchbase Get Their Data?"
[71] No investors in Crunchbase's data invested under the name "GCP."

## 2. Limitations of data sources

The comprehensiveness and scope of Crunchbase's data on venture investments is nearly unmatched and a major boon for the magnifying glass we hope to take to Big Cloud, especially considering data on venture investments (in the United States) are not collected and released as a part of a unified national dataset by regulation. However, Crunchbase's methodology involving industry-sourced information, as well as the structural nature of venture investment data being released by a variety of nonstandardized sources, poses several limitations for our analyses.

Crunchbase does not document temporal limits on its coverage of investments, and has records of investments dating as far back as 1922. However, Crunchbase's records of investments are strongly skewed towards recent years; 95% of all funding rounds recorded occurred since 2009, and 99% have occurred since 2005. This trend is even stronger for Big Cloud specifically, for which 95% of recorded funding rounds have occurred since 2012 and 99% of which have occurred since 2007. The lack of documentation by Crunchbase on the scope of its database and the lack of comprehensive external sources to compare against prevent us from assessing how strongly this skew may simply reflect the growth of the venture industry versus true database limitations and recency biases, but we caution any interpretation of our results to generally be primarily reflective of recent activity.  A table documenting the distribution of investments over time is shown in Table 7.

Crunchbase's News Team staff identifies several additional limitations,[72] including reporting delays due to the nature of collection via news sources, selective reporting bias wherein contributors may withhold unfavorable information, sector and business under-coverage prioritizing fidelity in high technology, and geographic under-coverage likely prioritizing US investments. In our analysis, for a few dozen funding rounds, the number of investors participating in a given funding round Crunchbase displayed could be shown to be incorrect because a greater number of investors were linked to a given funding round in Crunchbase's database. Anecdotally, we found cases where Crunchbase recorded information only very sparsely for deals that took place many decades ago, suggesting that coverage of  more recent deals is more comprehensive. Other cases of data quality are difficult for us to verify given we could not compare Crunchbase's statistics against an external baseline.

Perhaps the most important way the data quality has limited this report lies in missing values. 13.2% of funding rounds were known to be a venture capital series round but lack information on what stage of investment that deal took place in, for instance, and it is completely unknown what kind of funding was involved for 0.9% of funding rounds. More importantly, 28.6% of all funding rounds and 18.4% of Big Cloud's funding rounds that were known to involve some

[72] "How The Crunchbase News Team Uses Data In Its Reporting."

transfer of equity did not have a dollar amount listed for that funding round, a factor that made it difficult to judge the business strategies of cloud giants.[73]

Finally, we seek to caution our findings by noting a limitation of scope regarding available investments data. Typically, multiple venture capital investors participate in a given funding round for a startup, but only the total amount raised in the funding round and the names of participating investors (including which investors led the funding round) are released to the public and recorded by aggregators like Crunchbase. The specific contributions of each investor in the funding round are usually not released to the public. A representative example can be found in xAI's $6 billion Series B funding round: while it is known that Valor Equity Partners, Vy Capital, and several other firms invested in xAI, the specific breakdown of their contributions to this $6 billion are unknown. Funding rounds where individual firms' investments are made public are highly exceptional[74] and it is not possible to glean this information using Crunchbase's current database structure. We can address this issue in certain cases by focusing on investments in which they were the sole investor, which, as discussed earlier, was often the case for the Big Cloud corporations. However, this information is generally lacking and dollar amounts displayed throughout this report should be taken as only a blunt indicator of investor activity. For this reason, we generally prefer investment counts to the total size of participating deals when describing Big Cloud's investment activity in this report.

[73] Many investments, especially those that took place under accelerator programs, are recorded by Crunchbase as "non-equity assistance" and can involve non-monetary donations like office space, mentorship, or (and especially in the case of Big Cloud), cloud compute credits.

[74] An example funding round where a specific investor's contribution was made public can be found in this year's $40 billion funding round for OpenAI, led by Softbank's contribution of $30 billion. This was the single largest private investment round in history, so the circumstances that moved Softbank and OpenAI to make Softbank's contribution public are somewhat unique.

# 3. Tables

Table 1. US Big Cloud investment entities

| | Alias | Number of deals |
|---|---|---|
| Amazon | Amazon | 158 |
| | Amazon Web Services | 148 |
| | Amazon Alexa Fund | 140 |
| | AWS Impact Accelerator | 63 |
| | AWS Space Accelerator | 37 |
| | AWS FinTech Africa Accelerator | 25 |
| | AWS Healthcare Accelerator | 23 |
| | AWS Startup Loft Accelerator | 23 |
| | AWS Foundation | 17 |
| | Amazon Business | 15 |
| | Amazon Industrial Innovation Fund | 14 |
| | AWS Activate | 11 |
| | Amazon Corporate Holdings | 11 |
| | Amazon Smbhav Venture Fund | 11 |
| | Amazon Launchpad | 5 |
| | AWS Double Equity | 4 |
| | Amazon.com.incs Ltd | 4 |
| | Amazon Future Engineer | 3 |
| | AWS Fintech Accelerator | 2 |
| | Amazon AWS Incubator | 2 |
| | Amazon.com NV Investment Holdings | 2 |
| | AWS EdStart | 1 |
| | AWS Investments LLC | 1 |
| | Amazon Australia | 1 |
| | Amazon Housing Equity Fund | 1 |
| | Amazon One Medical | 1 |

| | Alias | Number of deals |
|---|---|---|
| Google | Google for Startups | 1654 |
| | Google Ventures | 1178 |
| | Google | 313 |
| | Google Launchpad Accelerator | 117 |
| | Google.org | 85 |
| | Alphabet | 27 |
| | Google Cloud | 26 |
| | Google for Startups Latino Founders Fund | 24 |
| | Google Assistant Investments | 21 |
| | Google Digital News Initiative | 11 |
| | Google for Startups Accelerator Canada | 11 |
| | NCAIR-Google AI Fund | 10 |
| | Google for Startups Women Founders Fund | 7 |
| | Google Canada | 2 |
| | Google Umbono | 2 |
| | Google's Africa Investment Fund | 2 |
| | Google AI | 1 |
| | Google Quantum AI | 1 |
| | Google for Startups Israel | 1 |
| Microsoft | Microsoft Accelerator | 387 |
| | M12 - Microsoft's Venture Fund | 317 |
| | Microsoft | 302 |
| | Microsoft for Startups | 126 |
| | Microsoft Accelerator Bangalore | 125 |
| | Microsoft ScaleUp Tel Aviv | 109 |
| | Microsoft Accelerator Paris | 72 |
| | Microsoft Accelerator London | 71 |
| | Microsoft Climate Innovation Fund | 51 |
| | Microsoft Accelerator Seattle | 43 |
| | Microsoft Accelerator Berlin | 41 |

| | Alias | Number of deals |
|---|---|---|
| | Microsoft Accelerator Shanghai | 14 |
| | Microsoft AI for Good Accelerator | 13 |
| | Azure | 4 |
| | Microsoft Founders Hub | 2 |
| | Microsoft Airband | 1 |
| | Microsoft Imagine Fund | 1 |
| | Microsoft Research | 1 |

Table 2: Non-US Big Cloud investment entities

| | Alias | Country | # of deals | Total participated funding (USD, millions) |
|---|---|---|---|---|
| Amazon | Amazon Australia | AUS | 1 | $0.11 |
| | Amazon AWS Incubator | CHN | 2 | $0.71 |
| | Amazon Smbhav Venture Fund | IND | 11 | $257.88 |
| | AWS Double Equity | AUT | 4 | $4.23 |
| | AWS Fintech Accelerator | POL | 2 | $0.10 |
| | AWS FinTech Africa Accelerator | POL | 25 | $0.03 |
| | AWS Space Accelerator | IND | 24 | $0.00 |
| Google | Google Canada | CAN | 2 | $3.36 |
| | Google Umbono | ZAF | 2 | $0.03 |
| | NCAIR-Google AI Fund | NGA | 10 | $0.06 |
| Microsoft | Microsoft Accelerator | CHN | 152 | $49.29 |
| | Microsoft Accelerator Bangalore | IND | 125 | $249.73 |
| | Microsoft Accelerator Berlin | DEU | 41 | $1.50 |
| | Microsoft Accelerator London | GBR | 71 | $1.06 |
| | Microsoft Accelerator Paris | FRA | 72 | $2.31 |
| | Microsoft Accelerator Shanghai | CHN | 14 | $0.00 |
| | Microsoft AI for Good Accelerator | ISR | 13 | $0.00 |
| | Microsoft ScaleUp Tel Aviv | ISR | 109 | $7.06 |

Table 3. Investors in comparison groups

| | Corporation or Investor | Number of Deals |
|---|---|---|
| Active Accelerator | Y Combinator | 323 |
| | Techstars | 6205 |
| | MassChallenge | 3200 |
| | 500 Global | 3174 |
| | SOSV | 2881 |
| | Plug and Play | 1975 |
| | Newchip Accelerator | 1285 |
| | VentureOut | 1093 |
| | Cleantech Open | 679 |
| | HAX | 643 |
| Big VC | Accel | 2173 |
| | Sequoia Capital | 2122 |
| | Insight Partners | 1136 |
| | New Enterprise Associates | 2232 |
| | General Catalyst | 1445 |
| | Andreessen Horowitz | 1673 |
| | Tiger Global Management | 1206 |
| | Greenspring Associates | 217 |
| | Thrive Capital | 361 |

| | Corporation or Investor | Number of Deals |
|---|---|---|
| | Lightspeed Venture Partners | 1485 |
| Other Magnificent Seven | Meta | 59 |
| | Apple | 32 |
| | Tesla | 2 |
| | NVIDIA | 122 |

Table 4: Non-equity investments by Big Cloud

| | | # of Deals | % of deals which are non-equity |
|---|---|---|---|
| Google | Non-accelerator | 1676 | 2% |
| | Accelerator | 1817 | 86% |
| Microsoft | Non-accelerator | 678 | 6% |
| | Accelerator | 1002 | 60% |
| Amazon | Non-accelerator | 548 | 9% |
| | Accelerator | 190 | 50% |

Table 5: Sole investments by sector

| | Google | Microsoft | Amazon | NVIDIA | Apple | Meta | Accel | Sequoia Capital |
|---|---|---|---|---|---|---|---|---|
| Developer Services | 28.9% (37/128) | 48.1% (50/104) | 44% (11/25) | 40% (2/5) | 0% (0/2) | 0% (0/1) | 3% (6/200) | 9.9% (15/151) |
| As a Service | 55.5% (213/384) | 51.7% (139/269) | 50% (29/58) | 18.2% (2/11) | 33.3% (1/3) | 66.7% (2/3) | 4.9% (18/368) | 11.9% (29/243) |
| Cloud | 26.1% (24/92) | 40.6% (39/96) | 50% (7/14) | 15.4% (2/13) | 0% (0/1) | 0% (0/1) | 3% (4/133) | 9.8% (11/112) |
| Data | 42.1% (75/178) | 54.3% (76/140) | 50% (9/18) | 25% (2/8) | | 100% (2/2) | 4.6% (7/151) | 10.5% (15/143) |
| Internet Infra | 43.8% (7/16) | 69.2% (9/13) | 75% (3/4) | 0% (0/2) | | | 2.3% (1/43) | 9.6% (5/52) |
| Hardware | 100% (2/2) | 0% (0/6) | | 33.3% (1/3) | 0% (0/2) | | 33.3% (1/3) | 33.3% (1/3) |

Table 6: Lead investments by sector

| | Google | Microsoft | Amazon | NVIDIA | Apple | Meta | Accel | Sequoia Capital |
|---|---|---|---|---|---|---|---|---|
| Developer Services | 48.4% (62/128) | 62.5% (65/104) | 76% (19/25) | 40% (2/5) | 100% (2/2) | 0% (0/1) | 46% (92/200) | 38.4% (58/151) |
| As a Service | 68.8% (264/384) | 60.2% (162/269) | 70.7% (41/58) | 18.2% (2/11) | 33.3% (1/3) | 66.7% (2/3) | 44% (162/368) | 46.9% (114/243) |
| Cloud | 46.7% (43/92) | 49% (47/96) | 57.1% (8/14) | 23.1% (3/13) | 0% (0/1) | 0% (0/1) | 36.8% (49/133) | 35.7% (40/112) |
| Data | 58.4% (104/178) | 62.1% (87/140) | 61.1% (11/18) | 25% (2/8) | | 100% (2/2) | 43.7% (66/151) | 42.7% (61/143) |
| Internet Infra | 75% (12/16) | 84.6% (11/13) | 100% (4/4) | 50% (1/2) | | | 20.9% (9/43) | 26.9% (14/52) |
| Hardware | 100% (2/2) | 16.7% (1/6) | | 33.3% (1/3) | 100% (2/2) | | 66.7% (2/3) | 33.3% (1/3) |

Table 7: Counts of deals recorded by Crunchbase, over time

| | Big Cloud | Other Mag. Seven | Active Accelerator | Big VC | All investors |
|---|---|---|---|---|---|
| Before 2000 | 7 (0%) | 1 (0%) | 7 (0%) | 218 (2%) | 2960 (1%) |
| 2000 | 24 (0%) | 1 (0%) | 0 (0%) | 205 (2%) | 4206 (1%) |
| 2001 | 3 (0%) | 0 (0%) | 0 (0%) | 93 (1%) | 1960 (0%) |
| 2002 | 2 (0%) | 0 (0%) | 1 (0%) | 107 (1%) | 1806 (0%) |
| 2003 | 1 (0%) | 0 (0%) | 0 (0%) | 119 (1%) | 2002 (0%) |
| 2004 | 3 (0%) | 0 (0%) | 0 (0%) | 175 (1%) | 2638 (0%) |
| 2005 | 3 (0%) | 2 (1%) | 10 (0%) | 182 (1%) | 3322 (1%) |
| 2006 | 5 (0%) | 0 (0%) | 22 (0%) | 236 (2%) | 4383 (1%) |
| 2007 | 15 (0%) | 0 (0%) | 61 (0%) | 274 (2%) | 5625 (1%) |
| 2008 | 17 (0%) | 2 (1%) | 70 (0%) | 251 (2%) | 6028 (1%) |
| 2009 | 16 (0%) | 1 (0%) | 92 (0%) | 219 (2%) | 5305 (1%) |
| 2010 | 33 (1%) | 0 (0%) | 316 (1%) | 264 (2%) | 7370 (1%) |
| 2011 | 71 (1%) | 1 (0%) | 534 (2%) | 426 (3%) | 9883 (2%) |
| 2012 | 158 (3%) | 1 (0%) | 759 (3%) | 485 (4%) | 13576 (3%) |
| 2013 | 267 (5%) | 2 (1%) | 961 (3%) | 478 (4%) | 17978 (3%) |
| 2014 | 323 (6%) | 4 (2%) | 1189 (4%) | 618 (5%) | 22977 (4%) |
| 2015 | 319 (6%) | 1 (0%) | 1636 (6%) | 680 (5%) | 29771 (6%) |
| 2016 | 345 (6%) | 9 (4%) | 2087 (8%) | 475 (4%) | 33253 (6%) |
| 2017 | 338 (6%) | 9 (4%) | 1955 (7%) | 612 (5%) | 35336 (7%) |
| 2018 | 296 (5%) | 9 (4%) | 2071 (8%) | 675 (5%) | 39502 (7%) |
| 2019 | 349 (6%) | 9 (4%) | 2411 (9%) | 705 (6%) | 41079 (8%) |
| 2020 | 527 (9%) | 15 (7%) | 2870 (10%) | 754 (6%) | 41391 (8%) |
| 2021 | 727 (13%) | 25 (12%) | 3396 (12%) | 1581 (13%) | 53358 (10%) |
| 2022 | 806 (14%) | 24 (11%) | 3099 (11%) | 1265 (10%) | 52625 (10%) |
| 2023 | 565 (10%) | 45 (21%) | 2160 (8%) | 594 (5%) | 50609 (9%) |
| 2024 | 501 (9%) | 41 (19%) | 1474 (5%) | 682 (5%) | 41255 (8%) |
| 2025 | 53 (1%) | 12 (6%) | 340 (1%) | 199 (2%) | 8312 (2%) |

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