

CMA CLOUD SERVICES MARKET INVESTIGATION

Google Cloud's response to the CMA's Competitive Landscape working paper dated 23 May 2024

I. Introduction and Executive Summary

1. Google Cloud welcomes the opportunity to comment on the CMA's competitive landscape working paper dated 23 May 2024 (the **Competitive Landscape WP**).
2. The Competitive Landscape WP sets out evidence and analysis which - together with the other working papers - informs the CMA's assessment of *inter alia* how the cloud market in the UK is functioning and whether one or more cloud providers hold significant market power.¹ Google Cloud agrees with the CMA's emerging view that there are indicators of significant market power being held by the largest two providers, AWS and Microsoft.²
3. Google Cloud sets out additional commentary in this response on the evidence and analysis that we consider most relevant to this emerging view of the UK cloud market, rather than exhaustively commenting on every aspect of the Competitive Landscape WP. To the extent any evidence and analysis set out in the Competitive Landscape WP is more relevant to the CMA's other working papers, Google Cloud provides relevant commentary in its responses to those papers.
4. As explained further below:
 - a. The UK public cloud infrastructure market is still nascent. The primary driver for growth and competition remains the migration by customers of existing on-premises workloads to the cloud.
 - b. There are clear indicators that AWS and Microsoft enjoy persistent market power and that Microsoft is closing the gap on AWS.
 - c. Consistent with feedback from customers, Microsoft's licensing practices and certain related artificial technical barriers (e.g., in respect of IAM services) pose the most significant challenge to customers' ability to explore and/or adopt a multi-cloud or switching strategy.

II. The UK public cloud infrastructure market is still nascent. The primary driver for growth and competition remains the migration by customers of existing on-premises workloads to the cloud

5. Google Cloud agrees with the CMA's observation that cloud services are increasingly important inputs to the UK economy, with customer spending³ and overall cloud revenues⁴ expected to continue to expand significantly in the foreseeable future in the UK and globally. While cloud computing is already delivering transformational benefits for consumers, businesses and public sector organisations alike,⁵ Google Cloud believes the growth trajectory set out in the CMA's working paper is consistent with the still nascent nature of the market.

¹ Competitive Landscape WP, para 9.23.

² Competitive Landscape WP, para 9.24.

³ Competitive Landscape WP, para 2.11-2.

⁴ Competitive Landscape WP, para 2.13-5.

⁵ For example, Google Cloud already has an extensive history working with the public sector in the UK and in 2023 extended its commitment by [announcing the launch of a new division dedicated to helping government departments and agencies across the UK](#) transform their operations with cloud capabilities.

6. Google Cloud takes note of some analysts' forward-looking views on possible future trends in the provision of cloud services cited in the Competitive Landscape WP.⁶ However, we remain of the view that market dynamics will continue to be driven primarily by customers migrating existing on-premises workloads to the cloud in the short and medium term. Our view is consistent with data from IDC⁷ showing that these workloads comprise around half of the total addressable market (estimated to be \$[X]⁸ globally).⁸ In particular:
- a. **Most companies and public sector organisations remain at the early stages of cloud adoption.** As noted by the CMA, there is “*significant migration of workloads from traditional IT to cloud services*” which is contributing to the overall faster pace of growth of cloud services in the UK compared to traditional on-premises IT services.⁹ However, as the CMA also recognises, “[*it is still relatively early in the adoption journey for most companies*”].¹⁰ As acknowledged in the IDC 2023 cloud migration report,¹¹ the majority of customers typically “*start small and templatize the process*”, i.e., by starting with less complex/less critical workloads to build migration practices and templates (including for the security model). This means many customers that have already started migrating some of their existing on-premises workloads to the cloud will continue to do so for some time.
 - b. **Migration of existing workloads is the key focus in these early stages.** Consistent with Ofcom's and analysts' findings, companies typically concentrate on migrating existing workloads into the cloud in the early stages of cloud adoption, and then develop their overall cloud infrastructure strategy to optimise and modernise their workloads at a much later stage.¹² This means that new developments such as ‘industry cloud platforms’, ‘vertical clouds’¹³ or providers’ ‘AI capabilities’ are not meaningfully driving the demand for cloud currently, and are unlikely to do so in the near or medium term.
 - c. **AI is still an early technology and not yet an important consideration for customers' choice of cloud providers.** Google Cloud is excited about AI's transformational potential for businesses, public sector organisations and consumers alike, and the emerging competition and dynamism displayed at all layers of the AI value chain, enabled by the vibrant competition to supply cloud compute (including AI chip capacities) to foundation model developers and providers from a dynamic range of cloud providers. Nonetheless, as the CMA notes in its Foundation Models technical update report, “*FM deployment in the wider economy [...] remains at an early stage [...] while companies are still experimenting with these tools, many are yet to find valuable use cases*”.¹⁴ Therefore, the impact of AI on the overall UK public cloud infrastructure market remains uncertain. Consistent with this, customers surveyed by the CMA do not currently consider AI capabilities as a particularly important consideration for their choice of cloud providers, especially relative to other factors such as the cost of and ability to use software licences in the cloud.¹⁵

⁶ Competitive Landscape WP, para 2.16 et seq.

⁷ IDC, [Cloud Migration: What We Know, What We Have Learned, and What's Ahead \(idc.com\)](#), p.4.

⁸ Based on [X].

⁹ Competitive Landscape WP, para 4.70.

¹⁰ Competitive Landscape WP, para 3.107(d).

¹¹ IDC, [Cloud Migration: What We Know, What We Have Learned, and What's Ahead \(idc.com\)](#).

¹² Ofcom, [Cloud services market study final report](#), para. 4.6(d).

¹³ Competitive Landscape WP, para 2.17 et seq.

¹⁴ CMA, [AI Foundation Models Update Technical Report](#), para 2.41.

¹⁵ Competitive Landscape WP, para 2.54 and 2.55(c).

III. **There are clear indicators that AWS and Microsoft enjoy persistent market power and that Microsoft is closing the gap on AWS**

7. Google Cloud agrees with the CMA’s emerging conclusion “*that there are indicators of significant market power being held by the largest two providers, AWS and Microsoft*”¹⁶ as reflected in their large and persistent (and, in the case of Microsoft, increasing) shares of supply,¹⁷ and their higher profitability/return on investments persistently in excess of their cost of capital.¹⁸
8. The trends in Microsoft’s growth over time are also significant. The CMA’s analysis indicates that amongst the two leading providers, Microsoft is displaying particularly fast growth and high profitability/return on investments and is “*closing the gap on AWS both globally and particularly in Europe*”.¹⁹ It shows that:
 - a. **Microsoft’s market share is growing rapidly and “closing the gap on AWS”.** As the CMA recognises, while the combined shares of AWS and Microsoft in IaaS are continuing to increase, “*Microsoft has narrowed the gap to AWS with the difference in shares falling*” between 2019 and 2022.²⁰ On a PaaS and IaaS combined basis, Microsoft’s share has grown from [20-30]% in 2019 to [30-40]% in 2022 “*as it gains ground on AWS*”.²¹ In contrast, the CMA’s analysis shows that “*Google is much smaller than AWS or Microsoft and growing at a slower rate*”²² - which, as the CMA notes, means that - “*it will be a long time before it catches up with AWS and Microsoft*” if the current rate of share growth continues.²³
 - b. **Microsoft is enjoying the highest revenue growth.** The CMA’s analysis shows that “*Microsoft has become the fastest growing cloud provider as of 2022*” with its share of revenue growth increasing rapidly from [30-40]% in 2021 to [40-50]% in 2022.²⁴ In comparison, AWS’ share of overall revenue growth remained static, while Google Cloud’s fell.
 - c. **Microsoft is winning the lion’s share of new customers’ cloud spend far exceeding its total market share.** As the CMA recognises, the market’s continued growth “*may provide opportunities for smaller providers as there is still new business to be won*”.²⁵ However, “*Microsoft has won more than [60-70]% of new customers in each of 2021 and 2022*”²⁶ and “*earned 50-60% and 60-70% of revenues from new customers in 2021 and 2022, respectively*”.²⁷ In comparison, AWS’ share of new customers remained static around only [20-30]% and Google Cloud’s share of new customers fell from [10-20]% in 2021 to [5-10]% in 2022.
 - d. **Microsoft’s existing customers are increasing their spend on Azure at a higher and faster-growing rate, again exceeding its market share.** As the CMA’s analysis shows, Microsoft’s share of supply by new revenues from existing customers grew from [30-40]% in 2021 to [40-50]% in 2022 - a faster rate of growth compared to AWS and Google Cloud’s

¹⁶ Competitive Landscape WP, para. 9.24.
¹⁷ Competitive Landscape WP, para 9.14-6.
¹⁸ Competitive Landscape WP, para 6.40. [X].
¹⁹ Competitive Landscape WP, para 2.100-2.104.
²⁰ Competitive Landscape WP, para 5.17.
²¹ Competitive Landscape WP, para 5.22(b).
²² Competitive Landscape WP, para 5.21.
²³ Competitive Landscape WP, para 5.15(b).
²⁴ Competitive Landscape WP, para 5.47(a).
²⁵ Competitive Landscape WP, para 5.17.
²⁶ Competitive Landscape WP, para. 5.51(a).
²⁷ Competitive Landscape WP, para. 5.53(a).

share fell during the same period - and means that already by 2022 Microsoft had closed the gap with AWS.²⁸

9. The CMA's analysis also indicates that AWS and Microsoft have both been generating returns from their cloud services above their cost of capital (**WACC**) for a sustained period, and this could be expected to continue in the future.²⁹ Although interpretation of profitability evidence can be difficult, these findings are consistent with the CMA's views on AWS' and Microsoft's persistent market power and also Microsoft's fast growing strength. Not only have AWS and Microsoft been enjoying persistent EBIT margins (while Google Cloud has only become profitable in FY23 and our EBIT margins remain "*significantly lower*" than those of AWS and Microsoft), Microsoft's EBIT margins (33-44% over the last seven financial years) have also been consistently and materially higher than those of AWS (25-30% over the last eight financial years).³⁰

IV. Consistent with feedback from customers, Microsoft's software licensing practices and certain related artificial technical barriers pose the most significant challenge to customers working with a cloud provider of their choosing, and may reinforce its already significant market power

10. Google Cloud is pleased to see that customers value services that improve the operation of workloads across clouds, and want to benefit more from services such as Kubernetes, containerisation and other tools, many of which are Google Cloud innovations that have been released on an open-source basis.³¹ Google Cloud has been a strong advocate for openness and a multi-cloud future, which is core to our business model and is consistent with our market position as a challenger, often competing for secondary workloads from customers of the two incumbents with significant market power and the widest commercial offerings.³² [X].
11. The Jigsaw research and [X] is consistent with Google Cloud's own experience. On the whole (and considering the overall nature of competition in the market, including cross-cutting elements), technical barriers "*can be overcome in practice*",³³ and "egress fees [*are*] *rarely top of mind*"³⁴ for customers when they think about "*their openness to switching cloud provider*".³⁵ Google Cloud provides further commentary on these factors and their impact on a customer's ability to switch and/or deploy a multi-cloud strategy in its response to the respective working papers on these topics.
12. However, customer feedback and the CMA's quantitative evidence show that Microsoft's enterprise agreements and other licensing restrictions can (and do) "*discourage both switching or a potential multi-cloud strategy*."³⁶ Jigsaw's research shows clear support for the contention we raised in our Issues Statement response that "*Microsoft has created an ecosystem of business software solutions that includes several traditionally 'must-have' products for enterprise customers*".³⁷ As the CMA notes in its licensing practices working paper, Microsoft enjoys significant market power across Windows Server, Windows 10/11, SQL Server, Visual Studio and Microsoft 365/Office Apps, which it

²⁸ Competitive Landscape WP, para 5.54-5.55.

²⁹ Competitive Landscape WP, para. 6.45.

³⁰ Competitive Landscape WP, para. 6.40.

³¹ CMA, Cloud Services Market Investigation, [Qualitative Customer Research \(Jigsaw Report\)](#), para. 1.5.2(d).

³² Competitive Landscape WP, para. 2.146-8. Customers see AWS and Microsoft to have the widest commercial offerings comparable to each other, while many of them see Google Cloud's offering to be 'more limited', and thus more comparable with other cloud challengers including Oracle, IBM and others.

³³ Jigsaw Report, paras. 1.4.9 and 4.5.9.

³⁴ Jigsaw Report, para. 1.4.12.

³⁵ Jigsaw Report, para. 1.4.12.

³⁶ Jigsaw Report, para. 7.2.3.

³⁷ Google Cloud, Cloud Services Market Investigation, [Response to the CMA's Issues Statement](#), para. 37.

seeks to leverage into the still nascent cloud infrastructure services market through these commercial practices.

13. Customers that have not developed their IT architectures in the cloud are more often than not embedded within Microsoft's broader ecosystem making it incredibly challenging for alternative cloud providers to compete for these customers when they migrate their existing on-premises workloads to the cloud, and for the additional cloud spend from Microsoft's existing customers. In particular:
 - a. As one Microsoft customer put it, customers become "*tied into the software agreements*" and "*then tied into platforms that are built that consume those software agreements*" and it is then "*an easier journey to migrate from there into the Azure cloud versus switching over to something else.*"³⁸
 - b. Indeed, as Jigsaw's research participants have themselves called out, Microsoft's enterprise agreements render it difficult for customers to "*even justify reviewing their Azure usage.*"³⁹

14. [X].

15. There is a clear risk of customer lock-in for Microsoft's on-premises and Azure customers. Not only are the effects of these practices already manifesting themselves in Microsoft's particularly high growth in revenues and shares across both new customers and additional spend of existing customers, but over time the volume of customers affected by these practices will continue to increase as more customers seek to migrate from on-premises to the cloud.

V. Conclusion

16. Google Cloud agrees with Ofcom's original contention that the "*scope for attracting new customers into a growing market is creating strong incentives [...] to innovate.*"⁴⁰ Our own experience as an innovator in this space - seeking to challenge the market leaders - is consistent with this.
17. The CMA has nonetheless observed correctly that there remain clear indicators that those market leaders, AWS and Microsoft, enjoy persistent market power - and that Microsoft is closing the gap on AWS. Given the challenge for customers of "*disentangl[ing] their infrastructure from the Microsoft ecosystem*", we strongly expect that Microsoft's share of new customers will continue to increase such that it will continue to 'take share'.⁴¹ As explained in further detail in the response to the licensing practices working paper, the artificial licensing restrictions imposed by Microsoft - and associated practices - are the key driver for why this is happening and the CMA is right to be scrutinising them closely in this MIR. It is critical that action is taken to address these artificial licensing barriers to ensure that customers have the ability to select their cloud providers on the merits of their offerings rather than because they are locked in to Microsoft's ecosystem.
18. Google Cloud looks forward to working with the CMA in the remainder of this process.

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³⁸ Jigsaw Report, p. 84.

³⁹ Jigsaw Report, paras. 1.4.32 and 7.3.4.

⁴⁰ Ofcom, [Cloud services market study final report](#), para. 4.142.

⁴¹ Jigsaw Report, p. 88.