CLOUD SERVICES MARKET INVESTIGATION

Summary of hearing with Microsoft on Tuesday 16 July 2024

Introductory statement from Microsoft

- 1. Microsoft highlighted three concerns arising from the emerging views set out in the CMA's working papers:
 - a. It believes the CMA's emerging views on the competitive landscape and market outcomes disregard real world evidence that the market is highly dynamic and rapidly evolving, customer satisfaction is high, that there is fierce competition between cloud service providers which drives down prices, and that market participants are investing heavily in Al capabilities to stay relevant and competitive.
 - b. The CMA has not identified a realistic counterfactual against which today's market falls short.
 - c. There are three cloud providers at the hyperscale level instead of just two, and although Google Cloud Platform ("GCP") has not enjoyed the same level of success as AWS and Azure to-date, it has important unique competitive advantages.
- Microsoft said licence fees for its software do not materially raise costs for its competitors. Microsoft noted that the available evidence indicates that AWS and Google have ample margin to compete with Azure and therefore, licensing fees do not result in input foreclosure.
- 3. Microsoft said that commitment-based discounts are central to competition in the cloud services market. Commitments allow cloud providers to invest in helping customers move workloads to the cloud from on-premises or between cloud providers. Microsoft said that the removal of the ability to agree CSAs would likely lead to UK customers paying higher prices and prevent deals to subsidise costs of multi-cloud or switching.
- 4. Microsoft said that it does not believe egress fees are a material factor affecting switching or multi-cloud decisions. Microsoft also said that it, AWS and GCP have removed egress fees for customers fully switching away from each of their cloud services.

5. In relation to any technical barriers, Microsoft said that there is an inherent friction in switching from on premises or between clouds or integrating applications across clouds. Microsoft said customers are aware of this and make deliberate trade-offs when deciding how to architect their cloud services.

Competitive landscape

- 6. Microsoft said that the CMA's Jigsaw research was accurate in characterising the strength of AWS, Microsoft and Google as the top three players in the market, as customers view them as all credible players.
- 7. It said that AWS has a reputation as the first mover innovator, Microsoft has a reputation for having strong enterprise IT relationships and Google has a strong reputation in data, analytics and AI.
- 8. Microsoft said that, although Google has not yet acquired a large market share, it has unique competitive advantages, such as in advertising, that allow it to win customers. Microsoft said that Google can offer its customers ad credits at almost no cost in order to land cloud deals. Microsoft also said that Google also has a long tradition in AI and analytics and has built a strong relationship with the open-source community and cloud native developers.
- 9. Microsoft said that AWS has strengths in cloud from its first mover advantage: ten years ago, AWS was the only player in cloud services and it targeted highend sophisticated customers. When Microsoft entered the market, the dynamics began to change as customers moving to the cloud were less sophisticated and mature. As a result of this, Microsoft shifted away from just offering features and functionalities to offering platforms, solutions and integrated workloads.
- 10. Microsoft said that it was able to use its experience of working with enterprise customers for traditional IT in relation to cloud services whereas Google lacked these capabilities and this perhaps resulted in poor execution of services for enterprise customers. While AWS did not have a history serving enterprise customers, when it first entered the cloud services market it nevertheless had strong capabilities in execution for, and support of, enterprise customers.
- 11. Microsoft said that the landscape is changing in terms of the difference in competing for new and existing cloud workloads, particularly as customers consider incorporating AI into their workloads. There is a greater potential for customers to switch cloud providers.

- 12. Microsoft also said that distinguishing between competition for new and existing workloads is overly simplistic, as existing workloads are regularly modernised both when moving to the cloud and when already on the cloud.
- 13. Microsoft said that the cloud market is set to continue to grow and there is far more of the market that is yet to be won, evidenced by the amount of investments Google, Amazon and Microsoft are making in infrastructure in anticipation of future returns.
- 14. Microsoft said that on-premises IT is a competitor to the cloud for some workloads.
- 15. Microsoft said that in the past customers' IT departments took decisions on IT infrastructure (because it was all on-premises) but that now decision-making is driven by the application or workload, and therefore the developers, who make the choices to work with technology and infrastructure that they are comfortable with. This makes the developer community more influential.
- 16. Microsoft said that this dynamic leads to developers having a free choice of which tool and technology to use, for example through GitHub, informed by seeing the technologies used by peers that work well. Historically, customers might have been more driven by their previous technology choices: for example, Microsoft's enterprise customers would often build with Microsoft technologies. However, this dynamic has been disrupted by cloud native architectures and an open-source headwind within the developer community.
- 17. Microsoft said that new modern workloads are therefore based on opensource software, such as Linux, and so Microsoft needs to compete against providers like Google and AWS for these workloads by prioritising opensource technologies.
- 18. Microsoft said that it was important to provide developers with choices and that it has to invest in resources such as GitHub to engage with developer communities as well as with customers' executive level. Microsoft is one of the largest contributors to the open-source community, such as via GitHub projects.
- 19. Microsoft also said that some of the innovation it has brought to market with AI has captured the attention of developers and has brought in work from developers that would have previously only considered AWS or Google.

20. Microsoft said that it has made a shift in the last ten years away from focused on Microsoft proprietary software to embracing the open-source community, noting that a proportion of Azure cores are now running on Linux. Microsoft said that it contributes to developer communities and that it has even partnered with AWS to create consistency across some open-source projects and technologies.

Impact of AI

- 21. Microsoft said that AI is another inflection point where the dynamics of the market may change. As an example, it noted that CoreWeave, which has a focus on AI, has seen around 1,000% growth in the past year and has also attracted over a billion dollars in investment.
- 22. Microsoft said that Nvidia has invested in building up competitors in the cloud services market to diversify its customer base.
- 23. Microsoft said that traditionally cloud providers needed a range of services to attract customers but now companies with access to GPUs can attract profitable AI workloads. Microsoft said that when training a foundation model, a wide range of services are not necessary, the primary need is for a cluster of GPUs, alongside some basic accessory services like networking.
- 24. Microsoft said that the market for AI amongst customers is still nascent but that, as an example, GitHub Copilot was seeing large productivity increases. It noted that one size does not fit all with AI services and it is bringing more models to the platform to address different scenarios.
- 25. Microsoft said that the advent of AI has caused it to change its approach to multi-cloud, resulting in the development of tools such as Microsoft Fabric which allows Azure customers to reference data regardless of what cloud it is stored on. Previously Microsoft had built tools such as Synapse in order to bring data from external sources onto Azure.
- 26. Microsoft said that whilst it had captured a lot of public attention and is considered to be one of the leaders in Al due to its partnership with OpenAl, both AWS and Google are also well positioned in relation to Al. It noted that Amazon has a partnership with Anthropic (whose latest model has leapt to the top of the leaderboards) and Google has its Gemini family of models. Microsoft also noted that Google developed and is self-supplying tensor processing units which serve the same function as GPUs, so it is not as dependent on Nvidia as other cloud providers. Microsoft said Google is in a particularly powerful position in relation to Al as it has strength at the semi-

conductor layer, in cloud computing infrastructure, in leading foundation models, and a series of consumer services like Android and consumer devices that it can use for distribution.

Switching and multi-cloud

- 27. Microsoft said that, in considering customers' ability to switch cloud providers, it is incorrect to distinguish between smaller and larger customers' ability to switch. It said that smaller digital native companies are more agile in their ability to switch whilst larger customers have greater resources to invest quickly in switching.
- 28. Microsoft said that it values the facilitation of multi-cloud and that customers come to Microsoft because of its multi-cloud capability. It added that it gives customers the flexibility to have multiple technology stacks that run consistently across clouds.
- 29. Microsoft said it works closely with ISVs to improve interoperability across clouds by improving its APIs.

Licensing

Listed v Non-Listed Providers

- 30. Microsoft said that its competitors, Amazon and Google, are an important marketing channel for Microsoft.
- 31. Microsoft noted that the Listed Providers, Amazon and Google, are highly efficient because of their global scale.
- 32. Microsoft stated that it is difficult for Amazon and Google to argue that they cannot afford to pay for its licences, or that Microsoft is foreclosing them, when looking at their growth and profits.

Bring your own licence (BYOL)

- 33. Regarding the difference in the ability to BYOL SQL Server but not Windows Server to Listed Providers' clouds, Microsoft said that it treats server applications and operating systems differently as the latter are more tied to a specific piece of hardware.
- 34. Microsoft said that trust-based licencing and piracy is still a considerable concern.

- 35. Microsoft said that, whilst AWS can track how much Windows Server is being used by any customer, it questioned how, for example, Listed Providers would be able to validate a licence that a customer wants to BYOL and confirm it is not still being used elsewhere. Microsoft said that the easiest way to validate that customers have the right to use Microsoft software on Listed Providers' clouds is to have the Listed Provider license that software from Microsoft and sell it on to their end-customers.
- 36. In relation to the software that Microsoft does allow customers to BYOL to Listed Provider clouds, such as SQL Server, it said that it has to take on some risk in order for it to happen. In comparison, Microsoft noted that the risk is much larger on Listed Provider clouds because they are one of Microsoft's largest distribution channels for its software.

Price Differences

- 37. Microsoft said that it advertises that the Azure hybrid benefit (AHB) can make Windows Server and SQL Server up to five times more expensive on AWS compared to Azure but that this claim relates to a niche scenario where a customer is running older versions of Windows Server and SQL Server that require security updates, and that it would be such a small portion of a customer's total workload.
- 38. Microsoft said that AHB is simply a way for Microsoft to discount a small portion of a customer's total spend that would have otherwise been on Microsoft software. Microsoft said that Amazon or Google could apply similar, if not larger, discounts to win business.
- 39. Microsoft explained that its changes under AWS's SPLA in 2019, were made in order to better monetise its IP, as Microsoft had realised that AWS had been realising significant margins on Microsoft's software. Microsoft stated that it had calculated its new pricing under the SPLA so that Amazon's AWS' margins for Microsoft software were in line with the margin AWS receives from selling other third-party software in its marketplace.

Foreclosure

- 40. Microsoft said that licencing fees are not material for Amazon and Google as they are a small cost relative to their total cloud revenues. It also noted that the use of Linux is growing significantly faster than Windows in the cloud, so any materiality is only getting smaller.
- 41. Microsoft said that Amazon and Google have absorbed any price input differences and that the difference has not been sufficiently material in a way

which affects their ability to invest and remain competitive. It also said that AWS has not slowed down its investments and that its investment in R&D was the largest of the hyperscalers in previous years.

42. Microsoft said that AWS also has programmes designed specifically to reduce its licencing costs by moving customers from Windows to Linux and from SQL to Amazon Aurora.

VDI

- 43. Microsoft noted that VDIs may be used to reduce complexity and cost, however they are a relatively specialised application: they may be used in circumstances where work is particularly confidential and additional security is required. Microsoft stated that whilst VDIs have benefits such as security they also have drawbacks such as the requirement for an internet connection in order to use them.
- 44. Microsoft noted that VDIs are not new and that whilst they will continue to exist for some specialised use cases, it does not expect desktop computing to be delivered by VDI more broadly in the near future.

Committed Spend Agreements (CSAs)

Conceptual Framework

- 45. Microsoft said that the conceptual framework the CMA used in its CSAs working paper was not reflective of business reality.
- 46. Microsoft said that the framework of 'sticky' demand assumes that once won, customers do not modernise their workloads and that they would not look for opportunities to move modernised workloads onto other clouds.
- 47. Microsoft also said that the CMA's framework assumes that when a cloud provider is negotiating with a customer, there is some visibility and insight into which workloads are 'sticky' and which are not which is not true.
- 48. In relation to prices and negotiated discounts over time, Microsoft said that the dynamic set out in the CMA's framework does not align with its experience which reflects discounts are decreasing at renewals, not increasing.
- 49. Microsoft said that it is also seeing customers diversifying their use of cloud providers and bringing in different cloud providers for different workloads, and that customers are moving existing workloads to other cloud providers.

- 50. Microsoft said that the idea of cloud providers leveraging demand from sticky customers to capture non-sticky demand could be a hypothetical concern but that the reality of the market does not reflect it. Microsoft noted that the market is developing so quickly that it is difficult to determine what a customers' next workload would be, providing the example of the rise in Al-related workloads.
- 51. Microsoft added that customers want to take advantage of innovation which will also impact their decision making in terms of future demand.
- 52. Regarding why the incremental discount associated with CSAs needs to be related to the whole customer spend on Azure, Microsoft said that it goes to the nature of the industry, as workloads are constantly evolving and it is unclear which demand is sticky, existing or new. It noted that sometimes customers rapidly increase their use of the cloud, such as where they want to digitally transform their business, requiring them to build new platforms and experiences for customers, which puts them in a challenging position if they are not going to get a discount for a number of years. It said that customers want the discount from day one, even when their spend is low to begin with.

CSA negotiations

- 53. Microsoft said that the level of discounts depends on the level of commitment from customers.
- 54. Microsoft said that it does not offer bundled discounts across Azure and its non-Azure services.

Potential remedies

- 55. Microsoft said that it did not know from a financial perspective the impact of having to use an incremental discount or tiered discount scheme, but it emphasised that committed spend discounts enable it to invest in its relationships with customers early on. It noted that without these levels of commitments from customers the case for making investments would be much harder. It said that using incremental discounts could also slow down the pace of innovation.
- 56. Microsoft said that if discounts were tiered or drawn out over a long period of time, there would be no guarantee to the hyperscaler that the business would ever come. It believes the business case for both the discount and investment would be weakened if there were changes to the model.

Egress fees

Overview

- 57. Microsoft said that the importance of egress fees is dependent on the workload
- 58. It said that egress fees do not come up as part of its conversations with UK customers. Microsoft added that customers negotiate on almost everything, but they do not raise egress fees as it is not a significant issue for them.
- 59. Microsoft noted that egress fees could be managed through cloud architecture.

Global free switching programme

- 60. Microsoft said that it brought egress fees down to zero for switching in response to the EU Data Act and noted that the customer response has been modest to-date.
- 61. Microsoft said that it will be complying with EU regulations in relation to multicloud. However, it noted that it does not see a lot of customer interest in integrated multi-cloud other than in fairly specialised situations as it is not easy or convenient for customers, irrespective of the cost of data egress.
- 62. Microsoft said that it has invested significantly in its networking infrastructure (eg by laying sub-sea cables) to improve services for cloud computing customers, and for this reason it finds the idea of removing egress fees altogether troubling as it wants to ensure its ability and incentives for such investments remain in place in the future.
- 63. Microsoft said that its ingress fees are priced at zero to stay competitive but that this puts more pressure on charging for egress.
- 64. Microsoft said that it would be better to invest in customers' architecture to optimise data usage rather than the cost of egress.

Potential remedies

65. Microsoft said that reducing the price of egress to zero might result in poor architectural decisions from customers that have spillover effects.

Additionally, bringing the price of egress to zero may also encourage bad behaviour by, for example, rendering cloud providers home to spam.

- 66. It said that without egress fees, the associated costs for egress would be distributed across its services, affecting all customers rather than just customers that are transferring data.
- 67. It said that, although it does not believe egress impacts switching or multicloud, any remedies should be aligned with EU rules to avoid confusion for its customers.

Technical barriers

- 68. Microsoft said that some technical challenges are inherent in multi-cloud and switching.
- 69. It said that cloud providers differentiate themselves through innovation of new products and features, and that the more those products and features are adopted by customers the greater the technical differentiation between clouds.
- 70. Microsoft said that there is a cost-benefit trade-off for customers when architecting their clouds, and that they decide whether to build around differentiated products and features of one cloud at the expense of portability, or to architect with portability primarily in mind at the expense of differentiated products and features.
- 71. Microsoft said that it has been working with the open-source community to develop tools to assist customers with multi-cloud and switching.
- 72. Microsoft said it is committed to be compliant with the EU Data Act and will tackle the implementation of functional equivalence.

Potential remedies

- 73. Microsoft said the potential transparency remedy requiring providers to publish details of upcoming material updates 30 days in advance is operationally unworkable due to the number of updates Microsoft makes every day. It noted that it already provides weekly update.
- 74. Microsoft said that it is concerned about differing technical requirements between geographies as it has already made an internal effort for standardisation of the underlying platform, and any technical differences between geographies could cause technical issues. Microsoft said that changes in the UK market could also bring complexity for UK customers and push them to seek better commercial terms elsewhere.