CMA CLOUD SERVICES MARKET INVESTIGATION

MICROSOFT RESPONSE TO THE ISSUES STATEMENT



9 November 2023

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Cloud services market investigation

Microsoft response to the CMA Issues Statement

1 Introduction

- (1) Microsoft Corporation ("**Microsoft**") appreciates the opportunity to respond to the CMA's issues statement published on 17 October 2023 (the "**Issues Statement**").
- (2) Microsoft firmly believes that the cloud services market¹ is functioning well both globally, and for UK customers. Intense competition between the long-time global leader, Amazon Web Services, and a group of rivals including Microsoft, Google, Oracle, Alibaba, IBM and others, has led to multi-billion dollar investments in infrastructure and innovation that benefit customers in the UK and around the world. Sustained investment by this cohort of established competitors has resulted in an ever-improving range and quality of cloud services available to UK customers, at prices which are declining over time.
- (3) Microsoft recognises that specific concerns were raised in Ofcom's Market Study and that the CMA must now carry out a further and more complete investigation. Microsoft looks forward to engaging actively and constructively with the CMA in its Market Investigation as it explores these issues. Ultimately, however, Microsoft submits that, on full investigation, the CMA should have no well-grounded reasons to find a likely "adverse effect on competition" (an "AEC"): in Microsoft's view there is no feature, or combination of features, that materially "prevents, restricts or distorts competition" in connection with the supply of cloud services in the UK.
- (4) As a consequence, the potential remedies set out in the Issues Statement are not, in Microsoft's view, necessary, much less effective or proportionate in the context of the global market. In addition, the fast-growing, dynamic and innovative nature of the global cloud market means that even well-designed remedies risk underlining the baseline competitive conditions that Ofcom acknowledged create *"positive outcomes for customers"*.

2 Competition in the cloud services market in the UK is functioning well

2.1 The market is fundamentally competitive and is delivering good outcomes for customers

- (5) Today's global cloud services market is the product of intense, dynamic competition. As Ofcom's Final Report (the "Final Report") recognises, cloud computing "offers significant benefits" to customers that have resulted from billions of pounds of investment and ongoing, rapid innovation.²
- (6) As acknowledged by the Final Report, the economies of scale required to be able to build and maintain cloud infrastructure sufficient to support a competitive public cloud offering means that only a relatively limited number of players will compete at the Infrastructure as a Service ("**laaS**") layer.³ Given the very significant (and ongoing) capital requirements, the

¹ References in this document to "cloud", "cloud services" or "cloud market" below should be read as limited to the CMA's definition in the Issues Statement of "cloud infrastructure services" unless otherwise noted.

² Final Report, paragraph 3.7

³ Final Report, paragraph 6.23

industry is competitive with a limited number of players with IaaS offerings, much like other industries with similar characteristics, such as aerospace or semiconductors.

- (7) Nonetheless, this is not a market in which AWS and Microsoft, as the two early cloud leaders, are insulated from competition. Microsoft has not and will not enjoy the same incumbent market advantage as AWS. There are many sources of competition in the cloud market in the UK. Google, Oracle, IBM and many other cloud players (e.g. Alibaba, Tencent) are also investing billions of pounds in cloud infrastructure globally to satisfy demand and are competing strongly for each customer workload where they operate. Google, IBM, and Oracle provide a competitive constraint (for example, Oracle is aiming to pitch itself as a "cheaper alternative"),⁴ as well as ISVs offering cloud services on third-party cloud infrastructure (as acknowledged by the CMA in paragraph 14 of the Issues Statement). There are numerous competitors able to offer cloud services across the stack and these companies are increasingly investing in cloud infrastructure to signal to investors their intention to be a player in the growing market.
- (8) Microsoft submits that the most direct and compelling evidence of whether a market is working well is the outcomes on the demand side i.e., those experienced by customers whose interests are served by strong competition (and the intended direct beneficiaries of any pro-competitive regulatory interventions). Competitive intensity is directly evidenced by actual market outcomes and dynamics on innovation, quality of services and price as detailed in this Response. These market outcomes are driven by (as recognised by Ofcom):
 - (i) multi-billion pound capex and R&D spending in both infrastructure (such as building data centres and laying undersea cables) and innovation (development of custom chips, development of new features and applications) by multiple competitors including the three largest "hyperscalers" in the UK (Amazon, Google and Microsoft) and other hyperscalers with strong existing enterprise customer bases such as Oracle and IBM;⁵
 - (ii) a large number of on-premises workloads anticipated to move to the cloud and the expected emergence of more cloud-native workloads in the future;⁶
 - (iii) the proliferation of a larger array of different forms of platform services vendors (e.g. ISVs);⁷ and
 - (iv) costs/prices having reduced significantly over time (as acknowledged by Ofcom as regards laaS prices).⁸
- (9) While many of the benefits of public cloud services over on-premises IT or privately run server farms may be inherent to cloud technology, the pace of the roll-out of cloud services and the scale of the ensuing customer benefits of the cloud is a result of the intense competition in the market.

2.2 Competition is driven by the scale of opportunity for "next workloads" in multi-cloud regardless of the "cloud maturity" of the customer or workload

⁴ Issues Statement, paragraph 13

⁵ Ofcom recognises the scale and pace of investment by the hyperscalers at paragraph 6.54 of the Interim Report as well as their *"high rate of expansion of their product range through internal R&D"* at paragraph 6.79. Ofcom also recognises cloud providers *"strong incentives to innovate"* at paragraph 4.142 of the Final Report.

⁶ Final Report, paragraphs 3.12-3.13

⁷ Final Report, paragraph 8.17(b)

⁸ Final Report, paragraph 8.17

- (10) Cloud is not a "winner takes all" market. As the CMA notes in the Issues Statement, the cloud services market will continue to grow in the future as there remains a long runway of on-premises workloads to be migrated to the cloud.⁹ In addition to the long backlog of workloads to be moved from on-premises to the cloud, cloud-native workloads are growing rapidly: Gartner estimates that, by 2025, 95% of new digital workloads will be deployed to cloud-native platforms. Cloud providers chase both conversion of on-premises IT spend into cloud spend, and new cloud-native workloads, driving fierce competition, both globally and in the UK, as the cloud market continues to grow at a rapid pace.
- (11) In this context, it is critical to highlight that, for Microsoft, the key metric used to measure performance of the Azure business is consumption (rather than profit) of Azure services. Competition is characterised by intense and persistent competition to win the next workload, irrespective of whether customers are new or existing to Azure. This intense competition for new and existing customers is evidenced by charges for ingress being driven to zero, the fact committed spend discounts ("CSDs") are offered to new and existing customers (see further below) and the prevalence of multi-cloud use by customers. Microsoft does not pursue a separate commercial strategy or differentiated pricing / discounts for new and existing customers or workloads. The billions in supplier expenditure are direct evidence of intense rivalry to win workloads, whether those of first-time cloud users or in an environment in which multi-cloud procurement is the emerging norm those of existing cloud users.
- (12) Even for existing cloud customers, it would be a false dichotomy to seek to delineate between stable and "locked-in" or "mature" cloud workloads and contestable "new" or "immature" IT workloads:
 - (i) The new normal is multi-cloud procurement: Contrary to the implication in the Final Report, multi-cloud procurement is the prevalent model going forward. Examples of Azure multi-cloud customers in the UK include [≫], among many others. None of Azure's significant customers are pursuing a single-cloud strategy over the medium-to-long term. Multi-cloud drives competition because it means a customer's cloud IT "share of wallet" is up for grabs; it is not the case that, once an enterprise has cloud spend with one provider, it will not award new workloads to another provider. Providers therefore compete for each workload as and when the customer decides to consider deploying it to the cloud. Customers often choose new applications (Software as a Service ("SaaS")) without being aware of the underlying laaS service the application is hosted on.
 - (ii) New and emerging cloud-native workloads create new opportunities: In addition to workloads originally migrated from on-premises, Azure continues to compete for new and emerging cloud-native workloads that have evolved to take full advantage of the flexibility the cloud provides. This trend is set to continue and represents another important driver of competition regardless of the "maturity" of migrated workloads. Al is just one example of how a new cloud-native workload has come to market and existing cloud providers have invested billions in offering customers AI capabilities. The recent AI developments have also changed the competitive dynamics in the market, with each player combining in-house R&D activity with partnerships and investments to present a credible AI strategy to the financial markets.

⁹ Issues Statement, paragraph 12

(iii) Like on-premises, cloud IT is a process of constant renewal (replacements and upgrades) which generate "next workload" opportunities: Finally, the process of constant IT renewal drives competition for customer relationships and the next workload. Not least in a multi-cloud paradigm, there is scope for competition for an existing workload at the point of renewal, replacement, and upgrade (an endemic feature of IT procurement). Given that business-critical services are run through the cloud, such renewal, replacement, and upgrade is not an optional "nice to have" but critical to customers' ability to compete in their own markets. This means that a sizeable share of notionally "old" or "existing" cloud workloads are, in principle, contestable and subject to constant review if the current technology becomes outdated or the switching benefits otherwise outweigh the switching costs. Cloud services will be in a process of constant technological renewal that generates opportunities for the next workload in the cloud.

2.3 Competition in the cloud services market is leading to lower prices

- (13) The intense competition described above is directly benefiting consumers through prices decreasing over time (particularly when adjusted for quality) – industry reports suggest this is the case across the market, and Microsoft submitted to Ofcom analysis of its own cloud pricing that aligns with this general trend (and we understand from the Final Report that other infrastructure providers submitted similar analysis).
- (14) Microsoft Azure's published prices have generally decreased over time, and both new customers and existing customers renegotiating their contracts alike are [\gg], generating efficiencies that in a competitive market are also passed on to customers.

2.4 The intense competition in the cloud market is leading to significant innovation

- (15) While prices have been declining, innovation has been increasing, driven by intense competition both between infrastructure providers, but also at the ISV level. Capgemini concludes that the hyperscalers maintain "a very high rate of innovation"¹⁰ as cited by the Final Report, which acknowledges that AWS, Azure, Google and Oracle "are consistently adding new products and features across the entire cloud stack" requiring "continuous investment and innovation"¹¹ and that the hyperscalers are "continually developing new products" as well as the features of existing products, and that they are at the "forefront of cutting-edge technologies such as ML (machine learning) and AI (artificial intelligence)".¹² AWS, Azure and GCP alone have each introduced hundreds of product improvements and new products in the last five years alone.¹³
- (16) Taking a conservative approach, it is estimated that AWS, Microsoft, and GCP have invested in the following respective ranges for cloud between 2018 and 2022: \$58 to \$110 billion, \$62 to \$101 billion and \$19 to \$112 billion. Taking the lower bound estimate for each provider, the aggregate sum is \$139 billion, at the higher bound it is \$323 billion. In 2022, Azure alone spent \$24.5 billion on R&D and deployed more than 100,000 software engineers across the business.¹⁴ Cloud customers and ISVs in the UK benefit from these significant investments the largest cloud providers make to innovate and to compete. In Microsoft's most recent

¹⁰ Final Report, paragraph 4.70

¹¹ Final Report, paragraph 6.48

¹² Final Report, paragraph 8.17(a)

¹³ As recognised by Ofcom in the Final Report, paragraph 6.44

¹⁴ <u>Microsoft 2022 Annual Report</u>; and <u>Welcome to the Engineering@Microsoft Blog</u>.

financials released just last month, capital expenditure (including finance leases) related to the cloud was \$11.2 billion.

(17) These investments drive direct customer benefits. In IaaS, this competitive investment has flowed into developing custom-built hardware and software to increase performance and facilitate lower infrastructure costs. In Platform as a Service ("PaaS"), it has flowed into designing and deploying cutting-edge innovations such as AI, machine learning and enhanced security applications. These innovations are accessible to all cloud customers, regardless of size or cloud maturity and are relatively simple to integrate into an existing cloud environment, facilitating multi-cloud adoption.

3 The future is set to be as – if not more – competitive than the past and present

- (18) The Issues Statement refers to concerns that the market may become more concentrated with the level of competition deteriorating. Microsoft's submissions to Ofcom set out, in some detail, the evolution of the cloud market and how that has continued to be a constant driver of innovation and intense competition within the market. Simply put, the rate of innovation and spend on significant capital investments makes cloud services one of the world's most innovation-heavy markets with vast and transformative customer benefits. These show no signs of abating.
- (19) There is no credible basis for a tipping point hypothesis that such a growing B2B market (without the well-known strong tipping effects of digital B2C platforms) will reach a "stable" or "lazy" state where it is more likely than not that sub-competitive innovation levels or supracompetitive prices emerge. On the contrary, the overall IT sector, whether on-premises or on the cloud, is in a constant state of upgrades, replacements, and renewal as technology continues to advance.
- (20) Cutting-edge innovations, such as AI or machine learning, are currently very important to competition as they come to market and can have disruptive effects on the cloud market. Most recently, an increase in demand for AI models has created tremendous pressure on the available computing capacity of cloud providers. As cloud providers such as AWS, Google Cloud and Azure have struggled to meet the computing needs of the AI software companies, this has created opportunities for smaller cloud providers and other hardware providers to enter the market.
- (21) This AI boom has propelled the entry of new players which is likely to change the competitive dynamics in the cloud market. For instance, Hewlett Packard Enterprise ("HPE") announced its entry into the cloud market with the introduction of 'HPE GreenLake for Large Language Models'. In addition, the high demand for computing resources with limited supply has created disruptions in the chip and cloud service providers markets. For example, changes to NVIDIA's business strategy have created an opportunity for smaller cloud computing startups such as CoreWeave and Lambda Labs who have benefited from access to NVIDIA's latest GPUs.
- (22) Not only do these advances lead to new opportunities for smaller cloud players, but they also mean that customers will generate new demand even once all their on-premises workloads have moved to cloud, because the tools used by businesses must change to stay competitive. In the same way that companies historically needed to replace existing IT infrastructure as technology advances, they will continue to update and enhance their cloud offerings.

4 Technical barriers to switching and multi-cloud

4.1 Technical differentiation between cloud providers' services is a result of competition in an innovative market

- (23) Cloud providers invest heavily in innovation to differentiate themselves, which brings inevitable complexity in cloud architecture. New cloud services may be inherently less interoperable/portable, if they are the result of technical innovation which is either not available on all clouds¹⁵ or as a result of parallel innovation.
- (24) Differentiation can exist in the form of the cost, security features, scalability/agility, technology and performance, compliance features, sustainability and resilience of cloud infrastructure. Whilst certain IaaS services may appear to be "commoditised" from the customer's perspective, there is technological differentiation in the supply of such services that enables optimisation, drives down costs, and improves performance.
- (25) Technical barriers may also result even from the integration of cloud infrastructure within a customer's existing IT systems. An element of customer lock-in is thus inherent to IT services (as acknowledged by Ofcom).¹⁶ While simpler and more standardised architectures are possible, they will be inherently limited in performance compared to more complex innovative and differentiated services. Ofcom recognises in the Final Report that differentiation (in particular, between ancillary cloud services) is not designed to intentionally increase technical barriers and may reflect differentiated approaches across cloud providers (but that it is difficult for a customer to integrate these into a unified interface).¹⁷ Ofcom also acknowledges that for larger/more complex customers, cloud-agnostic design often becomes unattractive due to complexity, time constraints and a lack of centralised coordination.¹⁸

4.2 Cloud customers enjoy the ability to switch and to multi-cloud

- (26) Microsoft's position, as the historic and current challenger to AWS in the cloud services market, means that Microsoft has always been incentivised to make it as easy as possible for customers to switch to Microsoft (in particular, from AWS) or to multi-cloud as customers focus on diversifying beyond AWS.
- (27) It is not possible for Azure to implement a lopsided portable system to be both seamless to switch into and hard to move out of. Microsoft also has an incentive to increase the extent of interoperable services in order to maximise customers' usage of Azure infrastructure and its Azure Consumption Revenue, but must balance that interest against the need to continue to deliver ever more innovative and performant cloud services to its customers. Moreover, Microsoft is incentivised to maintain the openness of Azure Marketplace in order to encourage developers to supply cloud services through the Marketplace and to drive its Azure Consumption Revenue.
- (28) In line with this objective, meeting customer demand for multi-cloud architectures is a focus area for Azure, and Microsoft has built a range of solutions to enable multi-cloud. For example, Azure Arc is a bridge that extends the Azure platform to help customers build applications and services with the flexibility to run across data centres, at the edge, and in

¹⁵ Final Report, paragraph 5.51

¹⁶ Final Report, paragraph 5.9 and 5.62

¹⁷ *Ibid*.

¹⁸ Final Report, paragraph 5.49

multi-cloud environments. Another example is Microsoft Fabric, a next generation data analytics service powered by one of the first true multi-cloud data lakes, called OneLake.

- (29) Multi-cloud procurement by definition increases competition between cloud providers. According to the S&P Global survey (2023), 98% of enterprises use or plan to use multicloud,¹⁹ and Ofcom's Final Report indicated that more than half of customers currently multihome.²⁰ As the prevalence of multi-cloud has increased (and is projected to continue to increase) due to customer requirements (e.g. regulation, resilience, ability to take advantage of new applications, privacy), this has given a further incentive to Microsoft to support multicloud in order to win customers.
- (30) Other providers have sought to exploit the same multi-cloud opportunity: cloud service providers and cloud software vendors have developed a large number of open-source products available for cloud customers, deploying tools to enable multi-cloud (e.g. open APIs) and creating cross-cloud applications. All major providers have offerings that simplify the management of multi-cloud infrastructures, for example AWS Systems Manager, Google Anthos, as well as other vendors such as Scalr, Flexera Cloud Management Platform, IBM Multicloud Manager, and Nutanix Beam.²¹
- (31) This means that customers have a range of choices to optimise the "switch-ability" of cloud workloads, for example, by using virtual operating systems (as well as other functionality) available in multiple clouds and by limiting the use of unique PaaS-based services not available on multiple cloud infrastructures. In addition, customers can choose from a range of commercial arrangements there is no minimum spend or commitment required to access Azure's public cloud services and, while some customers see benefit in the availability of CSDs, other customers can and do choose to operate on pay-as-you-go or consumption models. In addition, cloud providers seeking to attract customers to their cloud provide technical and financial assistance to help them to move workloads from on-premises or from another cloud (including the waiving of ingress data fees see further below).
- (32) Cloud customers make informed decisions about the level of putative "lock in" they will accept and when to incur costs, and make these decisions deliberately. While like any IT solution area there are inherent trade-offs in cloud architecture, cloud services are used by developers rather than retail consumers. Cloud customers are sophisticated buyers with specialised knowledge, procurement teams and resources (sometimes advised by third-party IT consultants and by the ingressing cloud provider), making informed decisions on the technical and commercial structure of their cloud deployments.

4.3 Lowering technical barriers to switching or to multi-cloud is not technologically practicable, nor would it lead to benefits to customers

(33) It is not surprising to Microsoft that, in the Final Report, Ofcom found that customers would "generally prefer to adopt" integrated multi-cloud, all else being equal (in the same way that customers would always prefer lower prices and low switching costs, all else being equal).²² However, the technological and market reality is that it is not possible for sophisticated and differentiated cloud infrastructure services to work together seamlessly in all aspects at a particular point in time.

¹⁹ <u>Multicloud is the New Norm | Oracle United Kingdom</u>

²⁰ Final Report Annex, paragraph A3.6

²¹ Best Cloud Management (CM) Platforms.

²² Final Report, paragraph 5.30

- (34) As outlined above, multi-cloud is already prevalent in the market and does not depend at all on "highly integrated" cloud architectures. Microsoft rejects the notion in the Final Report that "siloed" multi-cloud is harmful for customers as it is customers merely single sourcing for a particular workload or application.²³ In reality, this is the preferred model for many customers because there is no benefit and unavoidable downsides (e.g. latency caused by speed of light issues and other technical complexities) of integrating a single workload across cloud providers (i.e. "integrated" multi-cloud).²⁴
- (35) There is clear evidence that interoperability and portability are not substantially holding back switching between cloud environments and multi-cloud deployment by customers: a majority (60%) of respondents to Ofcom's survey have either switched IaaS/PaaS providers in the past or taken on an additional IaaS/PaaS provider.²⁵ Against this background, well-meaning interventions intended to "open up" cloud to a greater extent than occurs through the process of dynamic competition, risk doing more harm than good to customers by distorting the vibrant competition in the market and stifling innovation.

5 Egress fees

5.1 Use of bandwidth – whether ingress or egress – has a real cost, which must be recouped by the provider

- (36) Cloud providers generally charge for use of bandwidth on a consumption basis (e.g. for data sent out of the cloud to users of a cloud customer's website or app; for moving data between regions). Moving data in or out of a given cloud environment has a real cost for providers it uses bandwidth and energy which the cloud provider pays for. Many cloud providers, including AWS, Azure, and GCP, have invested billions of pounds in building out extensive and sophisticated private networking infrastructure spanning the globe for the benefit of their customers and to supplement the public network.
- (37) Over time, competition for customers transferring their workloads has led cloud providers to offer substantial amounts of bandwidth usage at no charge. After Azure and other challengers to AWS entered, charges for data ingress went to zero, and cloud providers currently offer substantial monthly free egress.
- (38) In Microsoft's view, an element of charging for data transfer (including between Azure regions) is important for the purposes of efficient usage of the cloud infrastructure given the actual cost of the data transfer, cloud providers need to recover the costs somewhere. This also allows cloud providers to plan for, manage, and deliver networking services reliably and avoids the inevitable free-rider problems which would arise without bandwidth charges (see further below), leading to excess data usage.

5.2 Egress fees do not constitute a genuine barrier to multi-cloud nor to switching

(39) The Final Report recognises that the 'one-off' egress cost associated with switching is likely to be a relatively small proportion of the overall cost of the switch. Ofcom has suggested this may understate the total egress costs associated with switching because switching incurs both one-off costs of data transfer and a period of integrated multi-cloud (with associated

²³ Final Report, paragraph 5.30

²⁴ In paragraph 5.29(d) of the Final Report, there is a reference to a customer stating that it doesn't necessarily want to "*split* a single function across clouds due to the complexities of managing two incompatible laaS stacks".

²⁵ Final Report, paragraph 4.58

egress fees). As Ofcom acknowledges, this is a temporary effect which may be offset by discounts offered by the ingressing cloud provider.²⁶

- (40) Ofcom also indicates that it would expect egress fees to act as a barrier to switching for a smaller fraction of customers compared to egress fees acting as a barrier to multi-cloud.²⁷ However, the prevalence of multi-cloud shows that egress fees are also not a barrier to multi-cloud. As outlined above, sophisticated enterprise cloud customers have the ability to switch and to multi-cloud. It is not clear to Microsoft why Ofcom is concerned about the lack of use of "integrated" multi-cloud as it does not yield significant customer benefits. There may be good reasons why customers concentrate their spend around a primary provider and/or to run different workloads separately in different clouds. Indeed, guidance from the UK Central Digital and Data Office notes that "Organisations should consider technical concentration risk in their overall risk management plan, but for the majority of situations the benefits of using a single provider will outweigh the technical concentration risk".
- (41) Microsoft has introduced free data tiers and developed new services and tools to help customers transfer their data efficiently. Microsoft also provides customers with an option to establish private direct connections to Azure that allow customers transferring significant amounts of data to reduce their overall egress fee charges and to transfer at faster latency (e.g. Azure ExpressRoute).²⁸ Ofcom also found that certain larger customers are able to negotiate discounts on egress fees which can reduce the marginal price of egress to very low levels such that they are unlikely to be a barrier to multi-cloud for such customers.
- (42) Finally but critically, there is very little evidence egress fees are actually hindering competition [>], and this is backed up by Ofcom's survey in which only 6% of respondents identified egress fees as the largest challenge to switching.

6 Committed spend discounts

6.1 The commercial rationale

- (43) Cloud providers offer what the Issues Statement refers to as CSDs to customers who make commitments to meet certain total spend thresholds during their contract period. These discounts are therefore *consumption* rather than *spend* driven and are known within Microsoft as Microsoft Azure Consumption Commitments ("MACCs"). Reservations and spend commitments facilitate cloud providers' forecasting of demand, utilisation and capex, provide greater certainty over future revenues, and deliver efficiencies passed on to customers in the form of discounts. The MACCs offered on Azure reflect the passing on of the cost savings these efficiencies bring, but are also driven by competition in the market for the workloads in question.
- (44) [×].
- (45) [≻].
- (46) MACCs therefore represent [\gg].
- 6.2 CSDs/MACCs are a key aspect of price competition for new and existing customers and lead to lower prices for customers in the UK

²⁶ Final Report, paragraphs 5.154-5.157

²⁷ Final Report, paragraph 5.158

²⁸ Microsoft understands that AWS provides a similar service: AWS Direct Connect.

- (47) MACCs are applied by Microsoft to both new and existing customers and are, as such, a key aspect of price competition between cloud providers both for new customers/workloads and for existing customers/workloads where MACCs are negotiated upon renewal of the customer's contract. As noted above, there is intense competition for the next workload irrespective of its origin and regardless of whether a MACC is in place.
- (48) Volume discounts create efficiencies that generate directly lower prices for public sector and enterprise customers. As acknowledged by the CMA in its AI Foundation Models report, training an AI model may require large amounts of compute – therefore, CSDs/MACCs allow developers to negotiate compute deals at less than the on-demand rate.²⁹

6.3 CSDs/MACCs do not constitute a barrier to switching or to multi-cloud

- (49) As explained above, committed spend levels are set in collaboration with customers based on projected consumption needs for one or more specific workloads, similar to planning onpremises infrastructure investments but with greater flexibility to change plans on the cloud. These volume discounts are not, therefore, disguised exclusivity arrangements and do not aim to foreclose competitors; customers themselves have flexibility to determine their committed spend targets based on their expected workflow and to determine the contract length. If customers do not like their committed spend level, they are free to switch to another cloud provider. Microsoft's MACCs are not designed or imposed to capture the entirety of a customer's demand across the cloud (particularly given many companies' preference for multi-cloud). Evidence shows that customers multi-cloud even when they have a MACC with Microsoft.³⁰
- (50) CSDs/MACCs therefore present no barrier to using different cloud providers for different workloads, but rather help cloud providers plan investments. Indeed, it is clear from the Final Report that some customers have told Ofcom that their commitments to hyperscalers do not represent a barrier to them choosing the most appropriate providers for their cloud needs.³¹
- (51) $[\%].^{32}$ $[\%].^{33}$ Some customers that had spoken to Ofcom have been able to push back on pressure to grow their commitments, including by threatening to switch provider.³⁴ From Microsoft's experience, customers are [%].

7 Software licensing practices

- (52) Microsoft offers both cloud services and software. Like all software providers, Microsoft licenses its software for specific uses for example the Windows operating system is licensed to OEMs for use on PCs. With the growth of cloud computing, and more instances of Microsoft software being used in the cloud, Microsoft has had to consider like all other software providers how it licenses its software for the cloud.
- (53) Microsoft's software is licensed for use not just in Azure, but also in competing clouds. Some of its software is available for customers to bring their own license to use the software on any cloud provider and some require that the cloud provider itself license the solution from

²⁹ <u>Full report (publishing.service.gov.uk)</u>, paragraph 2.18

³⁰ As indicated in our response to Ofcom's Interim Report, [>].

³¹ Final Report, paragraph 5.196

³² Final Report, paragraphs 5.217-5.230

³³ Data from recent UK MACC contracts that concluded in 2022 show that [X]. See Microsoft's response to Ofcom's RFI of January 2023, Q11.

³⁴ Final Report, paragraph 5.229

Microsoft before offering a cloud service based on Microsoft's software. But, in all cases, the software for which there is material demand from customers to run in the cloud is available for use.

- (54) Microsoft has adapted its licensing practices over time. Certain changes made in 2019 inadvertently disrupted the business model of smaller cloud providers, who complained to the European Commission. To address their concerns, Microsoft made further licensing changes in 2022 which allowed Microsoft software purchased for on-premises use under a subscription to be run in "Non-Listed" providers' clouds (i.e. any cloud other than Azure AWS, GCP and AliCloud) without any additional charges.³⁵ These licensing changes amounted to granting customers like-for-like economics on Microsoft software whether used on Azure or through another non-hyperscaler cloud.³⁶ These licensing changes resolved the complaints led by OVHCloud (and others) and apply globally, including in the UK.
- (55) Despite this, CISPE, which is primarily funded by Amazon, is engaged in a global campaign seeking to require that Microsoft makes its software available to other hyperscalers on the terms that those hyperscalers prefer. Microsoft's view is that these hyperscalers already have the resources and capabilities to compete in the cloud services market and require no further regulatory intervention from the CMA (or other competition authorities). The issue that CISPE and others are pursuing is fundamentally one relating to the commercial arrangements between hyperscalers and therefore risks being a distraction from the broader industry-wide issues the CMA is considering in its MIR.
- (56) This is especially true because the vast majority of cloud-computing applications are based on open source standards like Linux, and not on Microsoft products like Windows Server or Microsoft Office. This matters because, for the vast majority of workloads that customers develop, deploy, or migrate to the cloud, the customer does not need any Windows Server VMs or any other Microsoft software at all, and Microsoft's licensing practices are entirely irrelevant to those customer opportunities.
- (57) Given the highly competitive cloud industry and the limited importance of on-premises software products – as opposed to true cloud services – to competition in the cloud overall, a study of how software from companies like Microsoft, Adobe, Oracle, IBM and others traditionally deployed on-premises is licensed for the cloud risks being a disproportionate distraction to CMA resources as it seeks to conduct its inquiry in a cloud sector characterised by very complex competitive dynamics.

8 **Potential remedies**

(58) The global cloud market is unlike other markets considered by the CMA (and its predecessors) in previous MIRs: it is not a market in a settled or even stable state, where intervention can be targeted at particular problematic aspects of an established *status quo*. Rather, the cloud market is growing rapidly, highly dynamic, and characterised by high levels of investment and innovation. These factors mean that the design of remedies is likely to pose particular challenges, because the risks of unintended consequences – inherent in all MIRs – are more acute. This is particularly critical because the current global competitive dynamics are delivering unequivocally good outcomes for UK customers, who benefit from high levels of investment and innovation and declining prices.

³⁵ There were also modest changes made to address program terms and delivery options.

³⁶ See here for further details: <u>New options for partner hosted cloud (microsoft.com)</u> and <u>New licensing benefits make</u> <u>bringing workloads and licenses to partners' clouds easier - Microsoft AI Cloud Partner Program</u>

- (59) The cloud market is expected to more than double in size by 2026. This projected growth underscores the importance of the cloud market, but also that the market will look materially different in a mere few years. Critically, growth is predicted to come not *only* from migration of existing workloads to the cloud (which could be said to be "more of the same" and therefore more predictable), but also from technological advancement leading to new "cloud native" workloads, in particular in the rapidly evolving area of AI and machine learning.
- (60) In addition, the global nature of the cloud industry means that hyperscalers' pricing and investment decisions, and customer procurement, are made across multiple jurisdictions. It is therefore also imperative that the CMA is mindful of international developments when developing any remedies to avoid inefficiencies associated with regulatory fragmentation/divergence.
- (61) The Issues Statement sets out a range of potential interventions that might be considered by the CMA as part of its MIR. Microsoft recognises that these are "very early views" and looks forward to engaging constructively with the CMA throughout the process. However, Microsoft is concerned that many of the mooted remedies carry significant risk of unintended negative consequences for UK cloud customers – including higher prices and lower quality of cloud services and a reduction in innovation in the cloud industry. For example:
 - (i) Technical barriers to switching/multi-cloud: Requiring cloud providers to increase the degree of standardisation will increase costs for cloud providers (for example, by requiring cloud providers to re-engineer their services) and dampen incentives to innovate and compete based on innovative/differentiated cloud services, potentially leading to "lowest common denominator" problems.³⁷ Such an intervention would risk slowing or entirely stopping the release of new and innovative features in the UK market until the dictated standards catch up.
 - (ii) Egress fees: Banning egress fees is likely to increase prices in other areas as cloud providers will need to recoup the real fixed and marginal costs of providing egress services.³⁸ If costs are recovered elsewhere, e.g. through ingress fees or as part of the overall price for services, customers not currently paying for egress will experience price increases. In addition, banning of egress fees will inevitably lead to suboptimal excessive use of egress which has both financial and broader (e.g. sustainability, due to energy use) implications.³⁹
 - (iii) CSDs/MACCs: As noted above, CSDs/MACCs are a key aspect of price competition and provide significant benefits to customers in the form of lower prices.⁴⁰ Banning CSDs/MACCs risks reducing competition between cloud service providers and would likely lead to an increase in prices for UK cloud customers. Cloud providers' costs will also increase as they will face a diminished ability to forecast and to efficiently utilise their resources.⁴¹
- (62) Overall, Microsoft considers there to be significant complexity involved in designing, monitoring and enforcing remedies which are effective, proportionate, and do not place an undue burden on cloud providers and, more importantly, their UK customers. Accordingly,

³⁷ Final Report, paragraph 10.39

³⁸ Final Report, paragraph 10.17

³⁹ Final Report, paragraphs 10.21-10.22

⁴⁰ Final Report, paragraph 10.59

⁴¹ Final Report, paragraph 10.62

Microsoft welcomes the opportunity to engage with the CMA further on potential remedies as the market investigation progresses.