Consultation response form

Please complete this form in full and return to cloudreport@ofcom.org.uk

Consultation title	Public cloud infrastructure services, Consultation: Proposal to make a market investigation reference
Full name	[✂]
Contact phone number	[✂]
Representing (delete as appropriate)	Organisation
Organisation name	Oracle
Email address	[✂]

Confidentiality

We ask for your contact details along with your response so that we can engage with you on this consultation. For further information about how Ofcom handles your personal information and your corresponding rights, see Ofcom's General Privacy Statement.

Your details: We will keep your contact number and email address confidential. Is there anything else you want to keep confidential? Delete as appropriate.	Your name; Nothing else
Your response: Please indicate how much of your response you want to keep confidential. Delete as appropriate.	None
For confidential responses, can Ofcom publish a reference to the contents of your response?	N/A

Your response

Question	Your response
Question 2.1: Do you consider that our analysis is correct with respect of the suspected features of concern in the supply of public cloud infrastructure services in the UK?	*Please refer to our attached submission* *Is this response confidential? N*
Question 2.2: Do you consider that the proposed scope of the reference, as set out in the draft terms of the reference, would be sufficient to enable the market investigation to properly assess the features referred to above?	*Please refer to our attached submission* *Is this response confidential? N*
Question 3.1: Do you have any views on our current thinking on the types of remedies that a MIR could consider (see above and Section 8 of the market study final report)? Are there other measures we should consider?	*Please refer to our attached submission* *Is this response confidential? N*
Question 3.2: Do you have any views on areas where we should undertake further analysis or gather further evidence as part of an MIR in relation to the supply of public cloud infrastructure services?	*Please refer to our attached submission* *Is this response confidential? N*
Question 3.3: Do you agree with our proposal to exercise Ofcom's discretion to make a market investigation reference in relation to the supply of public cloud infrastructure services in the UK?	*Yes. Please refer to our attached submission* *Is this response confidential? N*

Please complete this form in full and return to cloudreport@ofcom.org.uk

<u>Ofcom Comments Response - Oracle</u>

I.   Introduction

Oracle welcomes Ofcom's cloud services market study interim report.[1] As a leading global enterprise software company with cloud computing offerings, we are glad to offer our perspective. We also welcome a subsequent referral to the Competition & Markets Authority for further investigation, as we believe that anticompetitive effects in the cloud computing market are harming consumers and competition in the UK.

True multi-cloud means that a customer can mix, match, interconnect, and interoperate among all the varied cloud service providers' services. Multi-cloud is procompetitive and benefits all customers. But UK customers cannot successfully achieve a multi-cloud strategy where switching costs are kept artificially high by market participants with significant market power. As Ofcom recognizes in its interim report, such anticompetitive practices serve to prevent customers from making the most efficient use of their resources in pursuing a multi-cloud strategy.

II.   Markets at Issue – Further Investigation Required

While Ofcom is not obliged to define the relevant market in its report, we emphasize that market shares will vary depending on market definition. In the US, for example, AWS is particularly dominant in the government cloud market (cloud services offered to the federal government) after its initial, sole-source contract with the US intelligence community in 2013.[2] And while Ofcom's finding that AWS and Microsoft together have a market share of 60-70% is concerning, that percentage is likely *far higher* when looking at particular markets or sub-markets.

III.   Egress Fees

We agree with Ofcom's findings regarding egress fees. AWS in particular charges customers exponentially more than cost to transfer data. For example, AWS's egress fees are much higher than Oracle's egress fees, which are equal to Oracle's cost to transfer data.[3] As Cloudflare has noted,[4] despite technical cost parity, AWS's extortionate conduct is thrown into particularly sharp relief when compared to what it charges for *ingress* fees (putting data into AWS): $0. Hyperscalers like AWS can use high egress fees to artificially raise switching costs, particularly

---

[1] https://www.ofcom.org.uk/__data/assets/pdf_file/0029/256457/cloud-services-market-study-interim-report.pdf ("Interim Report").

[2] *See generally Amazon Web Servs., Inc. v. United States*, 113 Fed. Cl. 102, 107-08 (2013), https://cite.case.law/fed-cl/113/102/.

[3] https://www.oracle.com/cloud/economics/

[4] https://blog.cloudflare.com/aws-egregious-egress/

where they "have been ingesting data into cloud for many years."[5] The practical effect is to lock in customers to using a single cloud provider in increasing intensity over time.

A clear anticompetitive effect of egress fees is as a barrier to multi-cloud adoption. As Ofcom correctly found, "[e]gress fees are likely to be a significant barrier to customers using integrated multi-cloud, particularly where large volumes of data need to be transferred between clouds." Multi-cloud is more than just using two cloud providers; the concept of multi-cloud is designed to give customers the most control over their cloud spending through increased competition between providers. Prohibitively expensive egress fees are an effective tool to keeping customers locked into a single cloud service provider and work to maintain that CSP's dominance.

IV.   Marketplaces – Next Steps

As one of Ofcom's contributors remarks, "marketplace is built primarily to drive [redacted] consumption,"[6] which serves as a virtuous circle of demand for cloud service providers – which charge for consumption.

Marketplaces can act as particularly powerful generators of network effects. Particularly where customers have committed spend in a hyperscaler's cloud environment, and the customer can meet some of that minimum spend through marketplace purchases, a hyperscaler can incentivize reliance on a single cloud service provider.[7] While it may be true that marketplaces are not yet a major revenue source for the hyperscalers, we encourage Ofcom to refer this issue for further investigation by the CMA before AWS's marketplace becomes another tool to maintain its dominance.

V.   Interoperability/Portability

Cloud technology has expanded greatly. Compute, network, and storage are now largely commoditized and offered by hyperscale cloud vendors, but on top of these are hundreds of highly differentiated and innovative services. Further, there are many more innovative companies offering even more cloud services that range from artificial intelligence platforms, database technology, analytics, integration, collaboration, and more. It is this model of choice and interoperability at the *services level* that is highly demanded commercially.

Yet, multi-cloud to many means having a choice between more than one vendor and then operating only within the selected vendor's environment, isolated from any other vendor. The problem with this approach is that any given cloud provider will deliver some cutting edge, some mediocre, and some objectively bad cloud services. Some services excel at certain

---

[5] Interim Report, at ¶ 6.18.
[6] Interim Report, at ¶ 4.70.
[7] *See also* Interim Report, at ¶ 5.131 & n.428 (explaining that some hyperscalers count both spending on the hyperscaler's own cloud products or on an ISV's products from the hyperscaler's marketplace toward the committed spend).

workloads, like processing imagery, while another service will excel at other types of workloads, like high-volume, complex mathematical computation. The end-state of true multi-cloud is the ability for a customer to mix, match, interconnect, and interoperate among all these varied vendors' services.

A less appreciated reason to ensure service level competition is to capture commercial innovation that happens at the cloud architectural level, even while compute, storage, and networking are commoditized. Architectural innovation targets the entire stack of technology used to deliver cloud services and can result in better performance (lower costs), higher security, and a smaller required footprint for similar services.

Regarding potential remedies, Ofcom and the CMA should require interoperability among the cloud service providers to help deliver on the promise of multi-cloud. Specifically, service providers should be required to:
- work together on common standards to enable interoperability across cloud services;
- physically interconnect their clouds so that services can be accessed without moving or migrating data;
- promote the free flow of data and end business practices that prevent choice and interoperability, such as data egress fees.