

CLOUD SERVICES MARKET INVESTIGATION

Summary of provisional decision

28 January 2025

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Introduction

1. Cloud services are now a vital input to businesses and organisations across the UK economy, with £9 billion spent on them in 2023. This spend has been growing by over 30% a year. Cloud services support many sectors' contribution to the UK's economic growth and it is therefore vital that competition works well in these markets for the benefit of these businesses and the wider UK economy.
2. Cloud services underpin UK businesses and organisations' main activities: for example, they enable banking technology, track courier deliveries and help retailers manage their stock. Healthy competition in cloud services markets can enable innovation, investment and improved productivity amongst all customers for the benefit of people, businesses and the UK economy.
3. The purpose of our investigation is to decide whether any feature or combination of features of the cloud services markets in the UK prevents, restricts or distorts competition in connection with the supply or acquisition of any goods or services in the UK or a part of the UK (an 'adverse effect on competition' or AEC). Should we find an AEC, we are required to decide whether we should take any remedial action or whether we should recommend the taking of action by others to remedy, mitigate or prevent the AEC(s) we have found.
4. We have provisionally found that there are AECs arising from certain features in the cloud services markets in the UK, and we are proposing remedies to address the harms to competition that we have identified. We are now consulting on these provisional findings.

The nature of competition in cloud services markets

5. Cloud services allow customers to have remote access to technology resources, on demand over a network. We define cloud services as infrastructure as a service (IaaS) and platform as a service (PaaS). IaaS includes services such as compute, networking and storage. We define IaaS based on standard compute as a separate market to IaaS based on accelerated compute.¹ PaaS includes platforms based on this infrastructure which enable customers to develop and run applications in the cloud.

¹ Further references to IaaS in this chapter refer to IaaS based on standard compute only, unless stated otherwise

6. We have provisionally found that cloud services markets in the UK are highly concentrated and each of the two largest providers, AWS and Microsoft, has a high share of supply, particularly in IaaS where they had shares of [40-50]% and [30-40]% respectively in 2023. Across IaaS and PaaS markets together, they each had a share of [30-40]%.
7. The third largest provider, Google, has much lower share of supply in UK cloud services markets, and there are also other providers, including Oracle and IBM, whose share of supply is smaller and who do not supply as wide a range of cloud services as Amazon Web Services (AWS), Microsoft and Google.
8. We have provisionally found that AWS and Microsoft have been generating sustained returns from their cloud services substantially above their cost of capital in cloud services for a number of years.
9. Prices paid by cloud customers for different cloud services have moved in different directions for different services, with some services and products increasing in price over time, while others are falling. Customers say that cloud services offer both quality and innovation to them. However we consider that a more competitive market would have sustained better market outcomes, including more consistently competitive prices, as well as further improvements in quality and innovation.
10. We have considered whether the growth of AI is affecting competition in cloud services as these products and services rely on cloud computing. Partnerships between larger cloud providers and FM developers are widespread and may play an important role in shaping the competitive conditions in the supply of accelerated compute to FM developers and in the supply of access to FMs to other customers. Access to FMs has emerged as a potential future driver of customers' choice and the competitive conditions in this area are not fixed.
11. This area of cloud services has been developing during the course of our inquiry and so evidence available now on the impact of AI on competition in cloud services is mixed. Overall, it is unclear if or how cloud service providers' relative strengths in the supply of IaaS based on accelerated compute will affect competition in the supply of IaaS based on standard compute. This is because the supply of accelerated compute is not currently substitutable for IaaS based on standard compute due to their different technical specifications and use cases. In that context, while we have provisionally found that AWS, Microsoft and Google each has a strong position in the supply of IaaS based on accelerated compute, we have provisionally found that there is currently no significant direct impact from this on competition in cloud services.

Entry and expansion in cloud services

12. We have provisionally found significant barriers to entry and expansion in cloud services, particularly in IaaS as this requires significant capital investment in fixed assets such as data centres, networks and servers and components which become largely a sunk cost.
13. There are also economies of scale, whereby larger cloud providers have lower ongoing costs. The largest cloud providers are making very large investments to expand their services in coming years, and while this investment can have pro-competitive effects and benefit cloud customers, it may also deter market entry or expansion by potential rivals.
14. The broad product portfolios of AWS, Microsoft and Google in both IaaS and PaaS are also likely to contribute to barriers to entry and expansion as range of services is an important consideration for customers when selecting a cloud provider.
15. We have considered whether procurement of cloud services by public sector customers affects competition in cloud services markets. AWS and Microsoft appear to be the largest providers to the public sector and this is consistent with their overall position in cloud services markets. Public sector procurement policy aims to maintain competition in the sector, including by requiring competitive tendering of contracts, and we consider that greater competition in cloud services would create greater choice for public sector customers. We will suggest that UK government should continue to collect data on the outcomes of public procurement and drive best practice in the application of its procurement frameworks.

Customers' ability to switch cloud provider and multi-cloud

16. We have looked at whether customers can switch cloud provider and/or use multiple clouds as their ability to exercise choice can drive competition in a market, including by lowering barriers to entry and expansion.
17. Large cloud customers are more likely than smaller ones to use multiple cloud providers, although their spending generally remains concentrated with one main provider. Customers face both commercial and technical barriers when seeking to multi-cloud or switch their cloud provider and many currently think that the costs outweigh the benefits.
18. Some customers can and do successfully multi-cloud but we have found that technical barriers to multi-cloud negatively affect many customers' ability to use and integrate multiple public clouds. This limits customers' ability and/or incentive to exercise choice of cloud provider.

19. We have considered whether the charging of egress fees for transferring data between cloud providers for the purposes of switching and/or multi-cloud harms competition. We have provisionally found that the presence and magnitude of egress fees reduces the ability of, and/or incentives for, customers to switch and/or multi-cloud to other cloud providers; they also reduce the incentives of suppliers to compete for their rivals' customers.

Microsoft's software licensing practices

20. We have investigated whether Microsoft's software licensing practices may partially foreclose its rivals in cloud services.
21. We have provisionally found that Microsoft has significant market power in relation to each of Windows Server, SQL Server, Windows 10/11, Visual Studio and its productivity suites. This is because customers are unable or unwilling to switch away from these products, there are limited alternatives and Microsoft has high market shares in respect of each of these products.
22. We have also provisionally found that the Microsoft products are important inputs to cloud services, such that Microsoft has the potential to harm its rivals in cloud services when customers purchase cloud services that incorporate these products.
23. We have found differences relating to price and/or quality factors when customers use these software products on Microsoft's cloud compared to its main rivals, AWS and Google: in fact, the price that Microsoft charges these rivals for some of these products can be higher than the retail price it charges its own customers.
24. As Microsoft has a significant market share in the concentrated markets of IaaS and PaaS, cloud customers who switch away from AWS and Google, or those that do not choose them in the first place, as a result of these licensing practices, are more likely to be captured by Microsoft.
25. We have provisionally found that Microsoft has the ability and incentive to partially foreclose AWS and Google using the relevant Microsoft software products and that its conduct is harming competition in cloud services.

Committed spend agreements

26. We investigated whether the use of committed spend agreements for customers of AWS and Microsoft harms competition in the cloud services markets.
27. We found that these agreements are widespread and can influence customers' choices in relation to workload allocation, but we have provisionally found that rivals can profitably compete against these and so in their current form and application, they do not harm competition in cloud services markets.

Our provisional decision on competition

28. Our task is to examine whether there are any feature(s) of the UK cloud services markets that lead to an adverse effect on competition.
29. We have provisionally found that high levels of market concentration and barriers to entry and expansion have enabled each of the two largest providers, AWS and Microsoft, to hold significant unilateral market power in these markets. This harms competition in cloud services in the UK because it is harder for alternative cloud suppliers to enter and grow in these markets and customers face a limited choice of suppliers. This harm is exacerbated by the features we have found arising from technical and commercial barriers.
30. We have also provisionally found that there are technical barriers and commercial barriers in the form of egress fees to switching and multi-cloud that harm competition in cloud services in the UK by locking customers into their initial choice of provider which may not reflect their evolving needs and limiting their ability to exercise choice of cloud provider. These barriers can restrict customers from responding to attractive offers or accessing innovative new services from another provider, leading to weaker competition between providers.
31. We have provisionally found that Microsoft's licensing practices are partially foreclosing AWS and Google which is having an impact on their competitive positions, and that this harms competition in cloud services in the UK. It also exacerbates the harm we have provisionally found arising from high market concentration and barriers to entry and expansion in relation to Microsoft's significant unilateral market power.

Customer detriment

32. We consider that the AECs we have provisionally found may be expected to result in substantial customer detriment in cloud services in the UK, in terms of a material impact on customers' ability to switch, multi-cloud and exercise choice over their provider, which may ultimately be expected to impact the price and quality (including access to innovative new services) of cloud services.
33. In cloud services markets, we consider that detriment may manifest itself in terms of UK customers paying higher prices for these services than they would if the markets were more competitive. By way of illustration, if prices are on average 5% above those in well-functioning markets, this would in aggregate lead to UK customers paying around £430 million more per year for these services than they

would in more competitive markets.² If quality or innovation were lower by the same degree, this would also have a material impact on customers.

Our proposed remedies

34. We propose making recommendations to the CMA Board to use its new digital markets powers to prioritise commencing SMS investigations to consider designating the two largest providers AWS and Microsoft with strategic market status (SMS) in relation to their respective digital activities in cloud services.
35. These powers have been specifically designed to be effective in digital markets, in recognition of the fact that some digital markets share a combination of characteristics that can cause them to ‘tip’ in favour of one, or a few firms. The new regime will allow the CMA, if it designates one or both of AWS and Microsoft with SMS, to take a targeted and iterative approach to address these concerns.
36. For features such as technical barriers, egress fees and Microsoft's licensing practices, we have provisionally found that, while in principle, there are actions we could take using the remedy-making powers available in this market investigation to address these features, there would be material risks in doing so. We consider that the new digital markets powers are better suited to addressing the concerns we have identified, particularly as a result of their greater flexibility and better provisions for ongoing monitoring and oversight. Should AWS and Microsoft be designated, we recommend that the CMA consider imposing appropriate interventions such as those identified in this report.
37. We consider that measures aimed at AWS and Microsoft would address market-wide concerns by directly benefitting the majority of UK customers and producing wider indirect effects by altering the competitive conditions for other providers.

Next steps

38. We are now consulting on these provisional findings and will consider further evidence and submissions received before reaching our final decisions later this year.

² Calculations are as follows: $9\text{bn} - (9\text{bn}/1.05) = 9\text{bn} - 8.57\text{bn} = 429\text{m}$. £9bn was the value of IaaS and PaaS UK revenue in 2023. See revenue figures in chapter 2