

CLOUD SERVICES MARKET INVESTIGATION

Summary of final decision

31 July 2025

Summary of our final decision

Introduction

1. Our task in this investigation has been to decide whether competition is working well in cloud services markets and, if it is not, to decide what action should be taken to remedy any harms to competition. Our final decision is that competition is not working well, so we have made recommendations to address this.
2. Public cloud infrastructure services (called cloud services in this report) give customers access to shared computing resources on demand so that the customers do not need to own the underlying hardware and software. These services include processing, storage, networking and other raw computing resources (often referred to as infrastructure as a service or IaaS) as well as services that can be used to develop, test, run and manage applications in the cloud (often referred to as platform as a service or PaaS).
3. Cloud services have transformed the way UK businesses and public services run their operations and are a critical input to the digital services that UK consumers use each day. Customers spent £10.5 billion on cloud services in 2024, with spending growing by nearly 30% each year since 2020 as they rely increasingly on cloud, rather than on-premises or 'traditional' IT. Cloud services also underpin AI model development and deployment.
4. Cloud services support many sectors' contribution to the UK's economic growth. It is therefore vital that competition works well in these markets to support innovation, investment and improved productivity for the benefit of people, businesses and the UK economy.

The nature of competition in cloud services markets

5. The IaaS market is highly concentrated and the two largest providers, Microsoft and AWS, each has a high share of supply at [30-40]% in 2024. Microsoft has grown its share while AWS' share has decreased since 2020. The PaaS market is also concentrated; Microsoft's share of it has slightly increased to [20-30]% and AWS' share has remained stable at [10-20]% since 2020.¹
6. The third largest provider, Google, has a much lower share of supply in both IaaS and PaaS markets at [5-10]% although this has grown since 2020. Other providers, including Oracle and IBM, have shares that are even smaller and do not

¹ The geographic scope of our markets is UK+EEA.

supply as wide a range of cloud services as Microsoft, AWS and Google. There are a larger number of PaaS providers, including Independent Software Vendors (ISVs), but their services are reliant on IaaS and we consider that they are a limited competitive constraint on IaaS providers.

7. Other data on cloud providers' capacity, shares of revenue flow and new customers indicate that these levels of market concentration and the leading positions of Microsoft and AWS are likely to endure.
8. Microsoft and AWS 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 in recent years, with some services increasing in price and others falling. Customers say that cloud providers offer both quality and innovation to them, as well as advantages over on-premises IT.
10. We consider that a more competitive market would show better market outcomes, including more consistently competitive prices, as well as further improvements in quality and innovation.

The impact of AI on competition in cloud services

11. Some cloud providers have told us that AI is changing how competition works in cloud services. We have considered the impact on cloud services of both the provision of IaaS based on accelerated compute and customers' purchase of AI-based cloud services.
12. Microsoft, AWS and Google are all strong vertically integrated providers of accelerated compute and AI-related cloud services, including through partnerships with AI model developers. Other cloud providers are significantly weaker in this respect.
13. Whilst AI-related cloud services are likely to be an increasingly important part of the offer from cloud service providers, current evidence from customers and providers suggests that AI is yet to materially alter the competitive dynamics in cloud services.
14. Providers' supply of IaaS based on accelerated compute is not currently significantly impacting competition in cloud infrastructure services because the services are not substitutable and there are significant barriers to entry and expansion in IaaS. Any impact is further limited by the fact that IaaS based on accelerated compute is being used by a small number of customers who are primarily AI model developers.

15. Revenue from the provision to customers of access to AI models is rising for Microsoft, AWS and Google but it is still a relatively small part of their businesses. The scope for demand for access to AI models to translate into greater demand for other cloud services is currently limited, although we expect it to grow over time.
16. AI capabilities currently play a limited role in driving customers' choice of cloud provider. However, these capabilities are likely to become more important to customers over time and so AI could impact competition in cloud services to a greater degree in the future. The nature and timing of this change and how it changes the relative strength of Microsoft, AWS and Google is dependent on a number of factors, including how customers' demand for AI capabilities evolves and the extent to which this leads to increased demand for other cloud services from the same provider.

Entry and expansion in cloud services

17. There are substantial 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.
18. There are also economies of scale, meaning that larger cloud providers have lower average costs compared to smaller providers. The largest cloud providers are making substantial investments in IaaS and AI capabilities 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.
19. The broad product portfolios of Microsoft, AWS 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.
20. We have considered whether procurement of cloud services by public sector customers affects competition in cloud services markets. Microsoft and AWS appear to be the largest providers to the public sector and this is consistent with their overall position in cloud services markets.
21. Public sector procurement policy aims to maintain competition from public sector customers, including by requiring competitive tendering of contracts, and greater competition in cloud services would create greater choice for public sector customers. We suggest that the UK government should continue to monitor the outcomes of public procurement of cloud services and drive best practice in the application of procurement frameworks.
22. Some stakeholders raised concerns about the impact of cloud credits on customers' incentives and the ability of smaller cloud providers to compete. We

recognise that cloud credits could have a negative impact on smaller cloud providers that are unable to match the credits offered by Microsoft, AWS and Google but we have assessed how cloud credits work and we do not consider that they are a feature which is harming competition in cloud services at present, although this harm could materialise in future if their value grew or scope changed.

Customers' ability to switch cloud provider and multi-cloud

23. We have looked at the extent to which customers can switch cloud provider and/or use multiple clouds, as their ability to exercise choice can incentivise providers to improve their offerings and reduce barriers to entry and expansion.
24. Very few customers switch between clouds: less than 1% of customers switch provider each year. Use of multiple cloud providers is more prevalent than switching but it is still uncommon for small and medium sized customers. Large cloud customers are more likely than smaller ones to use multiple cloud providers, although their spending generally remains concentrated with one main provider.
25. 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. Barriers to multi-cloud negatively affect many customers' ability to use and integrate multiple public clouds and this limits customers' ability and incentive to exercise choice over their cloud provider.
26. A key commercial barrier is the presence and magnitude of egress fees required to transfer data between cloud providers for the purposes of switching and/or multi-cloud. These reduce the ability and incentives for customers to switch or multi-cloud, particularly smaller customers and those with large proportions of stored data for whom fees are highest relative to their total cloud spending. They also reduce the incentives of suppliers to compete for their rivals' customers.
27. Technical barriers stem from the differentiation of features and interfaces in cloud services, meaning that customers are inhibited from switching or multi-cloud as they cannot easily compare, substitute, or integrate services from different providers. Further disincentives include latency between clouds, a lack of transferable skills amongst customers' staff and insufficient transparency from providers on how to mitigate or overcome technical barriers.
28. Use of committed spend agreements by providers is widespread, and these can influence customers' choices in relation to workload allocation. But providers can profitably compete against these and, accordingly, in their current form and application, they do not harm competition in cloud services markets.

Microsoft's software licensing practices

29. Microsoft provides a range of software that customers use on cloud services, either on Microsoft's own cloud Azure or through licensing to other cloud providers. We have examined whether Microsoft's licensing practices are influencing customers' choice of cloud provider, and whether this harms competition by preventing AWS and Google from competing as effectively for customers that use Microsoft software on cloud.²
30. Microsoft has significant market power in relation to several software products because customers are unable or unwilling to switch away from them and Microsoft has moderate to high market shares in respect of each of them. These software products are important inputs to cloud services, such that Microsoft has the potential to harm AWS and Google when customers purchase cloud services that incorporate them.
31. We found significant differences relating to price and/or quality when customers use these software products on Microsoft's cloud rather than AWS' or Google's. For example, the input price paid to Microsoft by AWS and Google for some of these products can be higher than Microsoft's customer-facing price for some cloud customers. AWS and Google pass through at least some of the input costs of Microsoft software, and customers generally perceive them to be more expensive than Microsoft.
32. While profit margin levels are not determinative of foreclosure, estimates of AWS' and Google's profit margins on bundles of cloud services that incorporate the relevant Microsoft software products are consistent with their partial foreclosure.
33. Microsoft does not make certain products available to AWS and Google through their licensing agreements, and customers with existing licences cannot bring these to AWS and Google in most instances. These restrictions mean that AWS' and Google's competitive offerings are directly affected by Microsoft's licensing practices.
34. Certain software products are used disproportionately on Azure compared to on AWS and Google. We consider that, given the very large difference, this is at least partly because some customers' choice of cloud is influenced by Microsoft's licensing practices.
35. Microsoft's licensing practices are adversely impacting the competitiveness of AWS and Google in the supply of cloud services, particularly in competing for customers that purchase cloud services which use the relevant Microsoft software as an input. As a result, Microsoft faces weaker competitive constraints from AWS

² The relevant Microsoft software products are: Microsoft's Windows Server (which includes Active Directory functionality), SQL Server, Windows 10/11, Visual Studio and the productivity suites.

and Google, its most significant competitors, which is reducing competition in cloud services markets.

Our decision on competition

36. We have found that certain features of the UK cloud services markets lead to adverse effects on competition (AECs).
- (a) Market concentration, which is particularly high in the case of IaaS, and barriers to entry and expansion are features that have enabled each of the two largest providers, Microsoft and AWS, to hold significant unilateral market power in the cloud services markets and to earn returns above the cost of their capital over a sustained period. Forward-looking metrics indicate that these levels of concentration are likely to endure. These features give rise to an AEC 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 and products. This harm is exacerbated by the features arising from technical and commercial barriers to switching and multi-cloud.
 - (b) These technical and commercial barriers are features that give rise to an AEC in cloud services in the UK. These barriers lock customers into their initial choice of provider, which may not reflect their evolving needs and limits 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.
 - (c) Microsoft's licensing practices have the effect of reducing competition in cloud services markets by adversely impacting the competitiveness of AWS and Google in the supply of cloud services, particularly in competing for customers that purchase cloud services which use the relevant Microsoft software as an input. This gives rise to an AEC in cloud services in the UK. These licensing practices are a feature that, in combination with the other features we have identified, including Microsoft's large and increasing market share in these markets, further restricts the already limited choice and attractiveness of alternative products and suppliers.
37. We think outcomes for customers would be better if cloud markets were more competitive. These outcomes would include more consistently competitive prices,³

³ By way of illustration, if prices were on average 5% above those in well-functioning markets, this would in aggregate result in UK customers paying around £500 million more per year for these services than they would in more competitive markets. The value of IaaS and PaaS UK revenue in 2024 was £10.5bn. Calculations are as follows: $10.5\text{bn} - (10.5\text{bn}/1.05) = 10.5\text{bn} - 10\text{bn} = 500\text{m}$.

greater prevalence of switching and multi-cloud use and potentially higher quality and innovation.

Our decision on remedies

38. Cloud services provide critical infrastructure for the UK's economy and it is therefore vital that competition works well in these markets. In order to remedy the harms to competition that we have found, we recommend that the CMA Board use its digital markets powers to prioritise commencing SMS investigations to consider designating the two largest providers Microsoft and AWS with strategic market status (SMS) in relation to their respective digital activities in cloud services. This would enable the CMA to impose targeted and bespoke interventions to address the concerns we have identified, including with respect to features where there are specification risks around the design of effective market interventions.
39. The CMA's powers under the DMCC Act have been specifically designed to be effective in digital markets and, if the CMA was to designate Microsoft and AWS with SMS, it would be able to address the concerns we have identified with conduct requirements or other interventions. Measures aimed at Microsoft and AWS would address market-wide concerns by directly benefitting most UK customers and producing wider indirect effects by altering the competitive conditions for other providers.
40. The new digital markets powers have scope for iteration and effective mechanisms for monitoring and oversight. Any interventions could be adapted in response to market developments and would reduce the risk of regulatory divergence with interventions in other jurisdictions, including those in Europe under the Data Act.
41. The CMA has said that it will keep under review possible options for further SMS designation investigations, and it anticipates that options will be considered by the CMA Board in early 2026. We expect that our findings and recommendations will be taken into account as part of its decision.
42. While we recognise that there is some uncertainty around the implementation of our recommendations, we believe they are the only effective remedy capable of comprehensively addressing the AECs we have found in this investigation. We suggest that, pending the CMA's decision on future designation investigations, developments in these markets, including any actions taken by cloud providers, are kept under review and that the CMA Board factors these into its prioritisation decision.