

CLOUD SERVICES MARKET INVESTIGATION

Summary of hearing with Google on Friday 19 July 2024

Introductory statement from Google

1. Google said that it agreed with the CMA's views on the broader market dynamics, and in particular, the significant market power held by AWS and Microsoft. It agreed with the CMA's emerging thinking as to how competition for the supply of cloud infrastructure services operates and that AWS and Microsoft are by far the most powerful players.
2. Google said that Microsoft's software licensing practices are significantly impeding customer choice and that technical barriers are amplifying the effects of these practices. Google added that these restrictions risk irreversibly tilting the market in Microsoft's favour at a pivotal moment. Google said that urgent and timely action is necessary to address Microsoft's practices.
3. Google said that Microsoft's licensing restrictions prevent it and others from competing for most of this addressable market.
4. Google explained that the cloud market has two kinds of customers: digital natives and traditional enterprise companies. Google said that the vast majority of the addressable market is made up of traditional enterprises that have a large dependency on on-premise workloads which are reliant on Microsoft's software. Google said that it has been able to compete for digital natives on the merits of its technology and solutions, as they don't have a pre-existing footprint of Microsoft software, but that this accounts for a small part of the overall addressable market.
5. Google said that egress fees and committed spend agreements (CSAs) do not hinder Google's ability to compete.

Competitive landscape

6. Google said that its market share is relatively small in aggregate across the overall cloud market, but its market share is substantially smaller for traditional enterprises. It said that, unless the structural issues such as licensing restrictions are removed, its market share will likely remain small, as it cannot compete effectively for traditional enterprise customers.
7. Google said that new players can enter the cloud market successfully, particularly if they already have an enterprise software customer base. Google

provided Oracle as an example of a new entrant with an installed enterprise software customer base that has grown rapidly.

8. By contrast, Google explained that its performance, when it was not already active in the enterprise software market, has been due to its success as a secondary cloud provider for large enterprise customers offering solutions such as analytics. Google said it also offers customers the ability to run infrastructure between its cloud and other clouds as a secondary environment in case there is a cyber incident or failure. Google said it is able to compete more significantly as a primary cloud provider for cloud native customers.
9. Google said that its strength in ad tech is unrelated to its strength in the cloud market, as cloud services are typically bought separately from advertising. However, Google said that data analytics are bought alongside other cloud services. Google noted that it offers the ability to run a data analytical system on GCP and access data on other clouds, without having to copy the data over to GCP.
10. Google said that cloud providers represent a non-dominant percentage of servers that are shipped but on-premises remains the dominant estate for traditional enterprise companies. Google stated that migrating these on-premises workloads to the cloud will take a long time and Windows dominates the on-premises estate for traditional enterprise companies.

Impact of AI

11. Google noted that there are two types of customers that use AI: customers that want to build their own AI models; and customers that use models built by others. Google said that there is vigorous competition in the market for both AI accelerators and accelerated compute. Google said that AWS, among a growing number of other competitors, competes strongly with Google and has seen significant growth in AI.
12. Google provided examples of new entrants providing accelerated compute. Google considered that they could enter the cloud market with more offerings and become full-service competitors. Google provided examples of other companies that had grown their suite of offerings in the cloud. Google noted that it had also originally entered the market with a single product and grew its portfolio over time.
13. Google said that Nvidia does not want to have a concentrated distribution channel so it ensures its chips and AI software stack can be sourced by many players.
14. Google said that there is a lot of competition for AI models and the technology is evolving very quickly. Google noted that AI models rely on existing software

systems so whoever has the primary share of those applications will continue to be the leader even with the advent of AI. Google said that models require low latency communication with the application and so are typically co-located with customers' existing systems.

Multi-cloud and switching

15. Google stated that customers that are building newer applications, for example digital natives, typically find it easier to switch and multi-cloud workloads as they choose to build their applications on open technology, such as Kubernetes. Google said that for existing estates of workloads, it is less common to multi-cloud because of commercial and technical issues even though there are resiliency risks associated with not multi-clouding.
16. Google said that customers typically onboard with one main cloud provider, whether they are 'lifting and shifting' traditional enterprise workloads or digital cloud natives. Google said that for both types of customers it is usually used as a secondary cloud provider to mitigate issues with resilience and introduce competition, and over time improve customers' cloud maturity and multi-cloud integration. As customers' multi-cloud journeys become increasingly integrated, customers are able to benefit from the best innovation and maximised resilience and reliability. Google provided an example of a customer that stored its customer data on GCP and ran its core platform on another cloud provider. A subset of the customer's data moves between clouds and, in the event of a disaster, it can replicate the entire application experience in one cloud or another.
17. Google said that customers that multi-cloud overwhelmingly choose Amazon and Google because they are easier to integrate due to the availability of open-source products and technologies or other interoperability standards, and the absence of licensing restrictions. Google said that a customer's ability to multi-cloud may not be the most important factor when choosing a cloud provider, especially when compared to commercial factors and licensing restrictions, but that the likelihood of multi-clouding increases as customers use of the cloud matures. Google also noted that regulation may be a driver in customers' decisions to multi-cloud.
18. Google said that the first cloud that customers move to wins most of its demand because there is a level of skill and knowledge that is required to operate a cloud, and it takes time for customers to learn how to and implement multi-cloud.

Licensing

19. Google said that licensing Microsoft software under the SPLA is a material cost, and that it is more expensive to run Microsoft workloads on Google than it is on Azure.
20. Google said that customers that already own Microsoft licences can freely bring those licences to Azure but cannot take those licences to a Listed Provider like AWS or GCP. Google noted that customers would need to rebuy the licence via the SPLA. Google added that this is not an input cost for every cloud provider because Microsoft's licensing policy removes that input cost from customers choosing to use Azure.
21. Google said that there are a number of non-price restrictions in the SPLA as well that mean it cannot compete with Azure. It is not able to provide certain security updates to customers, which has resulted in lost business.
22. Google said that it is not simple for customers to rewrite legacy applications in order to move away from Microsoft and part of the reason why there are so many legacy systems that have been running on Microsoft's software for many years is because they are very complex and cost prohibitive to rewrite. Google said that, when customers 'lift and shift' legacy Microsoft workloads to Azure, many smaller companies cannot afford to rewrite those workloads and it becomes difficult to migrate them away from Azure, so they are locked in.
23. Google said that it has not completed a traditional partial foreclosure analysis where it has looked at the percentage of input costs the Microsoft inputs represent because the analysis would suffer from extreme endogeneity.
24. Google said that while it is reasonable for Microsoft to extract value from software licences that are deployed on another cloud provider's cloud (for example, as Microsoft does through new subscription licences under the SPLA), it is unreasonable for Microsoft to change its BYOL model retrospectively in such a way that forecloses other cloud providers.
25. Google added that the issue is not just limited to the price difference of the Microsoft software on Azure compared to Listed Providers. Google noted that Microsoft also creates a technical dependency between Azure and Active Directory.

Virtual Desktop Infrastructure (VDI)

26. Google said that VDI is an increasingly important workload for customers. It noted that VDI workloads are dependent on Windows operating systems and are dependent on Windows Server.

27. Google said that VDIs are particularly popular amongst certain types of customers, such as those in the financial, healthcare and retail sectors. Google said that as customers move onto the cloud, they are also looking for VDI solutions to bring their desktop workloads to the cloud as well.
28. Google said that VDI is growing because employers want their workforce to be able to access their desktop from anywhere. Google also said that traditional desktops are vulnerable to cyberattacks as they might not have the latest security patches. Google said that by running desktops through a VDI, the environments are maintained in the cloud and it is much easier to keep them secure.

Committed spend agreements (CSAs)

29. Google said that the CMA's conceptual framework for assessing CSAs is a fair and reasonable framework to apply.
30. Google said that it does not view the presence of CSAs offered by Amazon or Microsoft as precluding it from competing effectively for business. Google said that it offers CSAs because of customer demand for greater discounts.
31. Google said that it is flexible in the types of discounts it gives customers. Some customers want discounts relating to the entirety of their spend, whereas others may prefer to have incremental discounts applying to additional demand.
32. Google said that a commitment-based discount provides some certainty for Google to plan services for what customers need.
33. Google said that customers use CSAs offered by competitors to negotiate but it is not a barrier to doing business for Google. It noted that its CSA offering is as competitive, if not more competitive, than its competitors. Google said that it has lost potential customers where it has been unable to match a price for the Microsoft portion of a customer's estate as a result of licensing practices rather than on the basis of CSAs.

Remedies

34. Google said that it does not believe that a remedy to CSAs is necessary, and that it is concerned about the unintended consequences of imposing a remedy. However, Google said that, in the event CSAs affect the market and a remedy is warranted, it should be limited to Microsoft and AWS because their CSAs have a much stronger effect on the market as they hold more market power. Google said that, if CSAs were removed, it would be concerned that its competitors might find ways to achieve the same effect as CSAs currently achieve by applying a discount across their whole cloud portfolio and/or tie spend across the cloud and non-cloud spend.

35. Google said that most customers that it speaks to do not raise CSAs as an impediment to migration, but rather they are worried about the cost of migration in terms of, for example, people and services. Google said that it competes with smaller players in the market that offer similar types of discount structures.

Egress fees

36. Google said that egress fees are not a primary decision criterion for customers when making decisions about where and how to move data and that most customers choose based on compute, databases or storage.

37. Google said that it can offer discounts to customers that are worried about egress fees. It said that customers for whom networking may be more of a factor in their decision-making process are typically those that provide content over the internet such as those in the content distribution business or ad exchange business.

38. Google said that its egress fee cost attributions reflect its need for continued investment in infrastructure to enable innovation and expansion into new regions.

39. Google stated that it is likely that its average egress fees are higher than those of its competitors because it has invested significantly in its infrastructure and offers better networking products. Google said that if it did not recover egress costs, it would likely need to increase prices elsewhere to carry on investing at the same level.

Free switching programme

40. Google said that its free switching programme is intended for customers who want to leave or take workloads away. However, Google said that it views multi-cloud as a normal course use of its services and it is entitled to charge for it.

41. Google noted that it offers customers some time under the free switching programme to test their workloads on their destination environment. Google said that customers are credited back any data transfer fees that they incur during this period. It added that it does not discriminate based on the destination of the data so it can be moved on-premises or to another cloud.

42. Google said that, since implementing the free switching programme, where customers have moved partial workloads, the cost for this was incurred by Google. Google stated that it can more easily absorb costs from switching as it is timebound and predictable in comparison to multi-cloud which is indefinite.

Potential remedies

43. Google said that a ban or cap on egress fees would lead the fees to be built into other services which would raise the price for all customers. Google said that only charging customers at-cost would affect the predictability of its networking costs for customers in the long term due to variations in underlying costs. Google also noted a cap on egress fees would affect the level of investment in its network infrastructure, which would impact latency and security requirements that its customers have when transferring data. Google said that it does not support any potential remedy in relation to egress fees over another as it does not view egress fees as having an adverse effect on competition.
44. Google said that, to the extent that CMA finds an issue in the market with egress fees, any remedy should only apply to cloud providers that have significant market power.
45. Google added that as a challenger in the market it is in its interests to facilitate multi-cloud, and that it does not believe that egress fees are the primary reason customers are not choosing to multi-cloud.
46. Google said that AI and modernisation typically do not drive a lot of change in network behaviour and so do not have a major impact on egress fees.

Technical barriers

Identity and access management

47. Google said that Microsoft has imposed artificial technical restrictions in relation to Active Directory and Entra ID regarding their identity and access management features. In addition, for Listed Providers, there is a further artificial barrier related to group policy management of machines, meaning customers cannot use Entra ID in Azure to administer security policies via Active Directory policy management for machines that are running in Google Cloud or AWS.
48. Google said that Identity and Access Management (similarly to operating systems) operates horizontally across customers' cloud estates, meaning that decisions relating to it have very broad and high impact implications. It said that once a customer has moved from Active Directory to Entra ID, in particular, there is 'no way back', as it is a proprietary technical stack that is integrated even more deeply into the Azure infrastructure with limited APIs outward.
49. Google said that it would like to see remedies associated with increasing interoperability of Active Directory and Entra ID. These are to remove the artificial restriction on Listed Providers relating to administering group policy,

and to require that Entra ID APIs are opened and made available using the relevant open standards. Google noted that Microsoft previously provided similar APIs for Active Directory in the on-premises world, so the remedy would not be requiring something that hasn't been done before. Google also noted that these remedies would improve resilience for customers in the case of a failure with Azure (which would lead to Entra ID also being down), as well as acting as an accelerator for innovation by enabling open-source development.

50. Google clarified that IAM interoperability problems are unique to applications and workloads running on Microsoft Windows and do not apply to workloads running on Linux.

Broader interoperability

51. Google said that cloud providers with market power have different incentives from Google. Google said that it strives to make a lot of its technology open-source; and one of the reasons is because many more software developers contribute to open-source communities. Google said that open-source is an accelerator for innovation rather than an inhibitor.
52. Google said that customers struggle in particular with legacy proprietary technologies. It gave two examples, firstly that customers tend to struggle with refactoring custom code written using proprietary Microsoft technologies like .NET and C# as it's different to non-proprietary alternatives like Java and C. Secondly, it said that Microsoft and Oracle have proprietary database technology and as a result Google has had to create new technology to migrate customers away from that if they wish to move. Google said that the issue arises from existing closed ecosystems, and that digital natives that didn't use these legacy technologies make different choices. It also noted that this challenge with databases is particularly relevant given the emergence of AI, and the large volumes of historical data in customers' legacy databases.
53. In addition to any technical barriers that are inherent in the cloud, Google said that its competitors with market power will add technology to make their services proprietary, such as operating system APIs and their own proprietary languages rather than open-source ones.

Potential remedies

54. Google said a remedy in the UK would apply to public sector bodies and companies that operate only in the UK as well some international customers with UK operations that separately provision cloud services for UK-specific workloads.

55. Google said that requiring the publication of information on APIs would not be sufficient to remedy technical barriers and interoperability issues. Google said they already publish this information to some extent, but even with that information there is a great deal of complexity to be able to interoperate.