Simon Hansford

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Ms Sarah Cardell Competitions & Market Authority The Cabot 25 Cabot Square London, E14 4Qz

3rd November 2023

Subject: Additional hypothesis that should be investigated as part of the Public Cloud services market investigation

Dear Ms Cardell,

This submission is made by two former employees of UKCloud Ltd, Simon Hansford (CEO) and Nicky Stewart (Commercial Director), who are pleased to be able to be of assistance to the CMA.

UKCloud, a British cloud services company, was founded in 2011, growing from start-up to an award-winning company employing more than 250 and turning over more than £40million. Along the way UKCloud achieved many prestigious accolades, including The Queens Award for Innovation and the Sunday Times Tech Track 100 Fastest Growing Tech company. UKCloud was the first UK technology company to achieve the Social Value level 2 Award. This independently verified that for every £1 spent with UKCloud, value to the tune of £1.43 was delivered back to the UK economy.

UKCloud went into compulsory liquidation last year, at a cost of £20m to the taxpayer and with the loss of 180 jobs.

The UK technology industry is founded on inward investment and most technology companies undergo regular investment rounds. Several factors contributed to UKCloud's demise, including government's lack of support for UK cloud providers and inherent market bias toward hyperscale cloud providers. Each of these factors made inward investment progressively harder to secure.

We are in agreement with the four "Theories of Harm" that the CMA has identified in its "Issues Statement" published in relation to its public cloud infrastructure services market investigation. Nonetheless, we are of the firm view that the CMA market investigation, if it is to be thorough and effective, needs to take the following anti-competitive practices into account and understand the broader consequences of those practices.

There is a risk that if the CMA decides to focus solely on the currently identified Theories of Harm, there would be little impact other than to shift market share between the hyperscalers without making the overall UK cloud infrastructure more open and competitive.

We would be happy to provide substantive empirical evidence for each of the following points in a slightly delayed timeframe, given tight timescales and because we are responding as individuals.

1) Free Courses and Educational Programs: A Competitive Advantage for Hyperscalers

Example: AWS and Microsoft not only give away extensive Educational Programs and free accreditation (which is not the industry norm), but regularly pays an individual's day rates (i.e. the day rate of a developer or SI consultant) to attend courses and conferences.

Issues:

- a) Smaller competitors do not have the financial capability to offer such large free incentives. This gives hyperscalers a competitive advantage over smaller companies, which cannot afford to offer such large incentives.
- b) Ultimately, a market's direction of travel is driven by the capabilities available to the market. Therefore, if the available skills and capabilities are predominantly founded on the hyperscale bespoke cloud services, most cloud consumers have no option but to use hyperscale cloud services.
- c) The CMA has rightly identified data egress fees as a key disincentive for switching cloud providers but this is compounded by the cost and time of reskilling technical staff if a change of cloud providers is being contemplated as hyperscale cloud skills are rarely transferrable.

- i) The Department for Science, Innovation and Technology (DSIT) should work with the CMA to provide guidance to buyers and consumers of cloud infrastructure services, highlighting the risk of vendor lock-in and how that lock-in might occur.
- ii) Any "free" courses or educational programmes should be required by law to contain a component of platform neutral education and certification (such as the Cloud Native Computing Foundation and the Linux Foundation) equivalent to no less than 50% of the overall content.

iii) Cloud providers in the UK that have been designated Strategic Market Status by the Digital Markets Unit (DMU) should be required by law to publish an annual register of organisations that have been paid to attend "free" courses or educational programmes. This register should also include the amounts that have been paid by the cloud providers.

2) Free Usage Credits: A Lock-in Tactic for Hyperscalers

Example: AWS Activate provides startups with \$100,000 in free credits. With large enterprise, public sector organisations and their target accounts these amounts can be considerably greater. This is an easy way for startups and companies who are embarking on their cloud journey to get started with AWS, but it also starts to lock them into using AWS in the future. Microsoft's BizSpark program offers similar benefits.

Issues:

- a) It is well known, and hence a tactic of the hyperscalers, that once customers are locked into a hyperscaler, it can be difficult and expensive to switch to a different provider and hence rarely happens. Smaller competitors do not have the financial capability to offer such large free credits. This can put them at a disadvantage when competing for customers.
- b) This tactic is often dressed up as a virtue and something which is beneficial to the UK's economic growth through the hyperscaler's "nurturing" of start-ups in the UK. This tactic is used regularly to impress politicians and policy makers when in fact nothing could be further from the truth – the principal motivation of the hyperscaler is to accrue, grow and lock-in new business.

- i) DSIT should work with the CMA to provide guidance to buyers and consumers of cloud infrastructure services, highlighting the risk of vendor lock-in and how that lock-in might occur.
- ii) Cloud providers in the UK that have been designated Strategic Market Status by the DMU should be required by law to limit the amount and term of free credit, allowing smaller providers to remain competitive against hyperscalers.

3) Data Gravity: A Competitive Advantage for Hyperscalers

Example: Hyperscalers hold massive amounts of data. British Industry, Science & Education cannot get easily access to multiple data sets even when they have the Data Controllers agreement to do so. Some datasets might be in one region, some in another, etc. Hence datasets cannot easily be accessed, compared & correlated and this is a hurdle to innovation, competition, and growth in the UK.

Whilst hyperscalers may not access customer data directly, the meta data and trend data can be used to give insight into adjacent markets, etc which gives them a competitive advantage in a variety of applications and industries. AWS in particular has been accused of "strip mining".

Issues:

- a) An extreme case is highlighted by the US federal government's recent investigation of Competition in Digital Markets where participants accused AWS of "strip-mining" opensource software - copying, integrating and charging for the product at the expense of the technology companies that pioneered the product, using trend data as a determination of potential success.
- b) Without access to the same amount of data, other data driven businesses are at a disadvantage when developing and competing with new products and services as most of the western world's data is stored and processed by US providers.
- c) More broadly, data is one of the 21st centuries most valuable commodities, of not the most valuable commodity. Placing the nation's most valuable data sets in a position of legal ambiguity e.g. subject to US law puts the UK at a huge disadvantage where it could only take on Executive Order from a US president to annex and control the data.

- i) The current legal ambiguity of the ownership of meta data generated in the cloud should be removed, placing ultimate ownership in the hands of the data controller (e.g. the cloud provider's UK customer) who may then choose to licence the meta data (in accordance with prevailing laws) to third parties.
- ii) Certain types of UK data sets with intrinsic sensitivity or value should be required to be hosted in the UK by companies headquartered in the UK.

4) Pay-Per-Use Pricing, Obscure Pricing Regimes and feature creep: A Risk of Lock-In for Customers

Example: pay-per-use pricing and obscure pricing regimes can lead to customers using additional cloud features and services without formal tender or procurement. This happens as developers and engineers see additional features of interest and implement them without a formal tender process or often knowledge of their organisations.

Issues:

- a) Not only are purchasing approvals and processes not followed (and this includes procurement law and policy in the case of the UK public sector), businesses may also be unaware of the further lock-in or increased commitments that they are entering into. This can lead to customers paying more for cloud services than they need to and for customers being further locked into a particular provider. This is known as cloud "bill shock".
- b) Where a cloud customer is subject to formal regulation e.g. the procurement regulations or WTO procurement rules, the unregulated and unmanaged consumption of services and features puts potential competitors at an extreme competitive disadvantage as they will never be given the opportunity to demonstrate their own capability and value.

- i) For the UK public sector, where this issue is particular problem:
 - a. all cloud opportunities that meet the thresholds for both Contracts Finder and Find a Tender, should be published and opened up to competitive tender, whether that be new projects, workloads, applications or additional cloud features & functionality.
 - b. cloud consumption that exceeds a monthly threshold of £10,000 a month should be subject to continuous review and oversight from finance and procurement professionals.
 - c. Where consumption exceeds 50% of the value of the original contract, the cloud service should be opened up to competitive tender.
- ii) DSIT should work with the CMA to provide guidance for private sector cloud buyers encouraging a similar approach.

5) Limited Access to Data: A Barrier to Innovation in the UK

Example: All engines are trained on data, and the more data they have to train on, the better they will become, as they learn by finding patterns, and the more data they have, the more patterns they can find.

Whilst the UK has a large number of leading & capable Al companies, they are typically small, and their core capability is often not sales & marketing expertise.

Hyperscalers continue to acquire or develop their own AI features & capabilities. Their customers, developers and engineers too readily implement these AI features without a formal tender process or procurement competition.

Issues:

- a) Al companies in the UK are disadvantaged because there has been no competitive procurement and visibility of a sales opportunity (even when alternative Al tools are a better fit for the job).
- b) The UK research community and AI engines are starved of language models to train themselves upon.
- c) The hyperscaler benefits with incremental revenue, increased market share and also improves its AI engine by accessing and training itself on a new dataset.
- d) This will inhibit the UK's economic growth and thwart the UK's stated ambition to become a global AI superpower by 2030.

- i) DSIT should work with the CMA to provide guidance to buyers and consumers of cloud infrastructure services, highlighting the risks of defaulting to proprietary AI tooling without exploring the available market.
- ii) This issue needs to be raised and addressed across government and reflected in multi policies including procurement.

6) Conflict of interest: Hyperscalers hiring key individuals from customers and competitors

Example: There have been numerous examples of AWS and Microsoft hiring key individuals or teams from customers and competitors, both pre and post contract signature. These individuals have at times been influential in awarding contracts and in some cases, by virtue of their roles in the public sector, had access to competitors commercially sensitive data, raising concerns about impartiality and ethics.

Issues:

a) When hyperscalers hire key individuals from customers and competitors, it can create a conflict of interest as individuals may have access to confidential information about their former employers, which they could use to benefit their new employer. Or, frankly as has been the case, that they have been rewarded for placing the contract.

- Potential conflicts of interests at any level in a public sector organisation should be subject to formal governance as is currently the case for senior civil servants.
- ii) Cloud providers should be prevented by law from creating a potential conflict of interest within its customer base.
- iii) In the event that a hire is made from a customer or competitor the transferring employee should by law be prevented from divulging confidential information about its previous employer for a period of two years.

7) Undue influence: Hyperscalers' access to business leaders and politicians

Example: Hyperscalers have significant access to business leaders, politicians and senior civil servants who are flattered to meet global business leaders and this access can give hyperscalers undue influence over business decisions and government policies.

Issues:

- a) Smaller competitors do not have the same allure and such access is rarely given to leaders of smaller businesses. When hyperscalers have undue influence over business decisions and government policies, it can harm competition and innovation.
- b) Additionally, it can lead to policies that favour hyperscalers at the expense of smaller businesses and consumers, such as the Cabinet Office Public Cloud First Policy which ignores the NIST definition of public cloud and relies on an interpretation that includes the US hyperscale cloud providers and no others.

Potential remedies

i) Cloud providers in the UK that have been designated Strategic Market Status by the DMU should be required by law to publish an annual register of engagements with business leaders, politicians and senior civil servants along with details of the type of engagement and any costs associated with the engagement.

8) Unclear and Misleading SLA's and Contracts: A Risk to Customers

Example: Hyperscalers often have unclear and misleading contracts that obscure their service levels and the location of customer data they store. As they are global boilerplate contracts, rarely is a customer able to negotiate any changes.

Issues:

- a) This can put customers at risk, as they may not be aware of the legal, regulatory and technical issues and risks that their businesses face. This can lead to problems including service outages, data breaches, and even financial losses.
- b) Cloud infrastructure services customers are generally Data Controllers and should draw up a Data Processor Agreement (DPA) to govern how the

data should be used. However, hyperscalers provide standard terms and conditions which include so called 'compensating controls' which may or may not align with what the Data Processor Agreement and/or prevailing data protection law.

- c) The hyperscalers have a "take it or leave it" approach to customer data and customers are unlikely to be properly recompensed if an outage or cyber-attack leads to the customer data being compromised, damaged or destroyed.
- d) EU-located datacentres are more expensive than the US-located ones, and the UK-located datacentres even more expensive.
- e) Without carefully reading the small print, users can often find that in the name of service resilience, such third-party providers reserve the right to instantly switch the datacentre live services are located in, from UK to EU, or from EU to US. Also, backups are often shipped off to a different region without sufficient clarity that this is or might take place.

Potential remedies

- iii) The CMA should work with a range of stakeholders, including trade associations, to develop template standard contracts and SLAs for cloud infrastructure providers.
- iv) Cloud providers in the UK that have been designated Strategic Market Status by the DMU should be required by law to comply with the template standard contracts when entering into an agreement with a UK customer.

9) Limited Features in the UK: A Disadvantage for UK Customers

Example: Hyperscalers often roll out new features to their UK datacentres many months, or even years, after the same features are released in other regions.

Issue:

a) UK customers who do not have access to the latest features and functionality in a UK region, are either at a competitive disadvantage, or use these features in a non-UK region. This will potentially, unknowingly, create data sovereignty issues and risks for their organisations and ultimate consumers b) Some 'templates' are not available in all regions, particularly in London. Sometimes the user doesn't get a choice because s/he is choosing services from a third party who in turn gets their cloud services from Amazon or Microsoft, and so the choice has been made for them.

Potential remedies

i) Cloud providers in the UK that have been designated Strategic Market Status by the DMU should be required by law to be transparent about the availability of existing and new features in the UK, including timelines, costs and ramifications for customer compliance with applicable UK law (such as DPA18) to enable customers to make informed decisions before they enter into a contract with a cloud provider.

10) The Unlevel Playing Field: Regulatory Bending in the Public Sector

Example: In the public sector, it is a disturbingly common practice for policies, rules and procedures to be waived or ignored in order to enable hyperscalers to comply with compliance or procurement requirements. There are even examples where policy has changed to accommodate the hyperscalers. This creates a two-tiered system where hyperscalers are given preferential treatment, while smaller or local cloud providers are held to a higher standard.

Issues:

- a) As a result, hyperscalers are able to win contracts that they would not otherwise be able to even qualify for. It allows them to gain a foothold in markets that they would not otherwise be able to access.
- b) Additionally, it burdens their competitors with additional costs and delays. The practice of regulatory bending in the public sector is a serious problem that needs to be addressed. It is unfair to smaller providers, and it undermines the integrity of the procurement process.

- i) No supplier to the public sector should be allowed to unduly influence policies, rules and procedures. The CMA should work with stakeholders to understand the extent of hyperscale influence to date along with the impact this has had on the market.
- ii) In going forward, any public sector policy rule or procedure that is being changed to accommodate cloud computing should be subject to review and approval by an expert, independent body with the powers to refer the change to the CMA when warranted.

11) Mergers and acquisitions and Artificial Intelligence

Example: Hyperscale providers have a long history of acquiring companies that could either compete with or will enhance current service offerings. The highest profile was Google's acquisition of the UK company, Deepmind Technologies in 2014. The UK aspires to be a global science and technology super power by 2030. Al and cloud will be the fundamental lynchpins of this ambition.

Issues:

- a) The UK is unlikely to become a science and technology superpower if its digital IP continues to be sold off to the highest bidder (generally US).
- b) With AI being vaunted as the future for all of us as individuals, for the economy, as a force for good or bad for the world it makes little sense for the UK, our nascent AI industry or our digital economy to turn a blind eye to the ongoing acquisitions of small AI businesses.
- c) Future competition is being killed in the crib by the hyperscalers.

Potential remedies:

 Any foreign acquisition of a UK advanced technology/AI business should be subject to scrutiny and approval either by the CMA or by an expert independent body.

12) The UK-US data bridge

Example: The UK-US Data Bridge came into force in October 2023, enabling the transfer of data from the UK to the US in compliance with prevailing data protection regulation, provided the US company has self-certified against both the UK and EU data transfer frameworks.

Whilst the ICO and others have expressed concern that personal data transferred to the US under the agreement will not have the same level of protection in the US as it would under UK law it is unclear whether government undertook any analysis of the impact of the agreement on the UK's own cloud hosting industry.

Issues:

- a) US cloud platforms are generally cheaper than their UK equivalents, given the vast scale. Making it easier to transfer data to the US will put UK cloud providers at a competitive disadvantage.
- b) The data bridge will make it much more challenging for the UK to establish its own sovereign digital infrastructure.
- c) UK citizens, or data subjects, are being put at risk given the residual concerns expressed by the ICO and others.
- d) The UK-US Data Bridge is a quick political fix made at the expense of UK citizens and the UK cloud hosting industry.

Potential remedies:

- i) Government needs to develop a strategy to encourage the inward flow of data to the UK (rather than outward) to build the UK's digital economy and national digital capability.
- ii) The UK-US Data Bridge needs to be overhauled to ensure that UK citizen data is always treated in compliance with the prevailing data protection legislation in the UK.

Conclusion: the consequences of a narrow CMA market investigation

We are particularly concerned that if the CMA limit's its investigation to the four "Theories of Harm" identified in the "Issues Statement," the CMA will fail to address the broader consequences of anti-competitive practices in the market.

The CMA must take a more holistic view of the market, even if this means that the CMA goes beyond its remit in some areas. A more holistic view is necessary to truly understand the problem and develop effective remedies.

Focusing too narrowly on the four "Theories of Harm" could lead the CMA to miss the bigger picture of how anti-competitive practices are harming the UK economy and its ability to grow and be resilient.

Even if the CMA does find competition problems in the market, remedies will only be effective if they have been developed in a holistic context. For example, if cloud providers are forced to remove technical barriers to switching, this may not be enough to address the problem of vendor lock-in, which can be caused by a variety of factors, including inertia, sunk costs, and complex ecosystems.

A big concern is that by only addressing the four "Theories of Harm," the market imbalance and dominance by the large hyperscalers will remain. Any proposed remedy may be inconvenient for any given provider, but collectively, they will not be enough to change the underlying market dynamics.

The UK could end up paying a very high price in the longer term if the current market dynamics remain:

- a) Our national resilience is weakened substantially when so much of our critical public services, critical national infrastructure and whole vertical industries are dependent on just two cloud infrastructure providers.
- b) This could have a devastating impact on the national economy, vertical industries, consumers and citizens.
- c) The current UK cloud infrastructure market is an anti-competitive monoculture and dependency trap. Many UK cloud providers are afraid to speak out because they have had to turn to reselling hyperscale cloud in order to survive.
- d) The lack of a healthy, vibrant UK cloud industry will affect the UK's economic growth and ability to compete on the global digital stage as we lack the skills, education, revenue and access to data.
- e) The UK risks falling behind the EU, US, Australia and many others, all of whom are now investing, supporting and promoting the development of their own sovereign cloud capability.

We urge you to take our concerns into account and to expand the scope of the CMA's investigation to include a more holistic view of the public cloud infrastructure services market. This is essential to ensure that the UK has a competitive and innovative cloud market, which is in turn essential for the UK's economy to grow and thrive.

Due to the tight timescales to respond to the issues statement, and the fact that we are individuals without the benefit of the support that some other respondents will be enjoying, mean that we request to provide the relevant evidence in a slower timeline.

Yours sincerely

Simon Hansford & Nicky Stewart