## AWS's Response to the CMA's Egress Fees Working Paper Index

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#### I. INTRODUCTION

1. AWS's response to the CMA's working papers and updated issues statement as published on 25 June 2024 summarised its views on the CMA's Egress Fees Working Paper of 23 May 2024 ("EF Working Paper").

- 2. This response, together with  $[\times]$  provides additional evidence which demonstrates that:
  - a. AWS's data transfer out ("**DTO**") fees reflect the significant investment that AWS has made to build an extremely fast, secure, and resilient global network for AWS's customers to transfer data<sup>1</sup>;
  - b. AWS's reasonable DTO margins enable these significant investments, and ultimately lower prices for customers; and
  - c. Remedies relating to DTO fees would not resolve any perceived concern, and would in fact lead to harmful, unintended consequences.<sup>2</sup>
- 3. This submission also explains that AWS has already eliminated DTO fees globally (including in the UK) for switching customers, thereby removing one of the EF Working Paper's two potential concerns around DTO fees.
- II. AWS'S DTO FEES REFLECT THE SIGNIFICANT INVESTMENT THAT AWS HAS MADE TO BUILD A HIGHLY SECURE, RELIABLE, AND RESILIENT DATA TRANSFER SERVICE
- 4. DTO fees, which AWS charges in some but not all instances,<sup>3</sup> are a necessary cost to enable AWS to provide customers with a premium data transfer service that runs on top of a premium network, a key reason why customers choose us to provide their cloud services. These fees have enabled us to invest in high-quality proprietary infrastructure to provide a premium service, and the best network offering in terms of security, scalability and resiliency.
- <sup>1</sup> [%].
- <sup>2</sup> [%].

Since 2010, AWS has provided customers with a free tier of usage for more than 100 AWS services up to specified limits, including DTO. This includes the dramatic expansion of free data transfers out from our network from 1 gigabyte per month to 100 gigabytes per month as of December 2021. As a result of this expansion, more than 90% of AWS's global customers which incur DTO usage do not pay DTO fees at all. In addition, as of March 2024, we have eliminated DTO fees globally (including in the UK) for switching customers, which removes one of the EF Working Paper's two potential concerns around DTO fees.

5. The EF Working Paper states that it has seen limited evidence of customers receiving lower prices or greater choice or innovation for data transfer services because of investment funded by DTO revenues.<sup>4</sup> This simply cannot be true for AWS, which has used the profits that it generates from data transfer fees to invest in infrastructure which ensures that AWS's network is of a premium quality and ultimately results in lower prices for customers. This is proven by AWS data which shows that the *effective* price (*i.e.*, net of discounts) charged for DTO has decreased *significantly* in recent years for both global and UK customers. Indeed, global DTO prices have decreased by 37% between 2018 and 2023, and 25% for UK customers.<sup>5</sup>

- 6. AWS's most significant investment of recent years consisted of  $[\times]$ .
- 7. This investment, and the resulting cost savings, have allowed AWS to expand its network to serve more customers in more locations, and handle a significant increase in volume of network traffic, without a significant increase in cost. In addition, these cost savings have been passed on to customers, for example through the expansion of free data transfers out from the AWS network (the "AWS DTO Free Tier"), []
  []
  ], and the introduction of free data transfer for customers who switch. Indeed, from 2019 to 2023, []
- 8. AWS has also made significant investments in [≫]. This means that AWS is not reliant on [≫] to ensure highly secure, available, and resilient network performance at a cheaper rate, which translates into cost savings which AWS passes on to its customers. In the UK specifically, for example:
  - a. [**※**].
  - b. [**≫**].
- 9. AWS has also invested in  $[\times]$ .

EF Working Paper, paragraph 4.88.

<sup>&</sup>lt;sup>5</sup> [|3.

See <a href="https://www.youtube.com/watch?v=ARIBHmPy7Zc">https://www.youtube.com/watch?v=ARIBHmPy7Zc</a> for further information on AWS's investment in its own hardware and software, as explained by an AWS senior network engineer.

See <a href="https://aws.amazon.com/blogs/aws/aws-free-tier-data-transfer-expansion-100-gb-from-regions-and-1-tb-from-amazon-cloudfront-per-month/">https://aws.amazon.com/blogs/aws/aws-free-tier-data-transfer-expansion-100-gb-from-regions-and-1-tb-from-amazon-cloudfront-per-month/</a>.

<sup>&</sup>lt;sup>8</sup> [**※**].

10. Customers may not be aware, or even realise the impact, of these investments. However, they are crucial to AWS's aim to provide network availability that is indistinguishable from perfect, across an ever-expanding network that must manage increased traffic volumes while delivering the latency and security that customers expect. The fact that AWS has been able to achieve this, and lower prices for customers at the same time, is a direct result of the investments it has made in exchange for the fees which AWS charges for data transfer.

11. The EF Working Paper's emerging views express concern that AWS's margins may indicate anti-competitive intent¹0, but [※], AWS's margins are justified and enable AWS to make these significant investments back into the network and to ultimately lower prices for customers.¹¹ AWS needs to retain the possibility of earning a return on its investment to justify the investments and innovations in its network, and removing AWS's ability to earn profit would remove any incentive to invest and innovate in the network in the way that has yielded substantial benefits for customers and the economy more generally. [≫].

# III. REMEDIES RELATING TO DTO FEES WOULD NOT SOLVE ANY PERCEIVED CONCERN, AND WOULD IN FACT LEAD TO HARMFUL, UNINTENDED CONSEQUENCES

12. The EF Working Paper has not presented any evidence of an adverse effect on competition in relation to DTO fees and we do not consider that there is a problem to remedy. Therefore, any of the potential remedies considered in the EF Working Paper would be wholly disproportionate and unnecessary. Indeed, the proposed interventions seem to be based on an assumption that it is necessarily anti-competitive to charge data transfer prices that are unrelated to costs, which is not even the case for AWS, as demonstrated by [≫] which shows that the revenues from global DTO fees and DTO costs are closely related and cost-reflective.¹² There are many factors beyond costs that firms legitimately consider when structuring their pricing − such as quality of the service.

AWS is organised into 32 Regions, which are physical locations across the globe where AWS clusters its data centres (each, an "AWS Region"). A logical grouping of one or more data centres within each Region is referred to as an "Availability Zone". A Local Zone is an extension of an AWS Region in close geographic proximity to end users.

<sup>&</sup>lt;sup>10</sup> EF Working Paper, paragraph 3.56.

<sup>&</sup>lt;sup>11</sup> [**%**].

<sup>&</sup>lt;sup>12</sup> [**>**].

13. The CMA's proposed interventions, which include price control and information transparency remedies, would reduce effective competition and innovation, and erode the quality of the data transfer services that AWS and other providers currently offer. They are also unnecessary: as of March 2024, AWS eliminated DTO fees globally (including in the UK) for switching customers, which removes one of the EF Working Paper's two potential concerns around DTO fees, and for customers that do want to multi-cloud, the EF Working Paper has not advanced evidence that suggests DTO fees are a barrier to this.

- A. Price control remedies Preventing cloud providers from charging DTO fees would have very damaging effects on cloud services
  - Preventing cloud providers from charging DTO fees would harm innovation and make customers with low or no data transfer usage effectively subsidise those with higher usage
- 14. Preventing cloud providers from charging for data transfers out of their respective network would have very damaging effects on the provision of cloud services. AWS faces intense competition from numerous providers of IT solutions offering a range of different delivery models. Requiring cloud providers to offer free DTO would be illogical and unjustified; indeed, cloud providers could not operate, and would have no incentive to invest, if they were unable to charge customers for using their services. As shown by the description above of some of the investments AWS has made in its global network, it is incorrect to view providers' networks and DTO as a commodity that simply exists without differentiation.
- 15. It is only logical that customers, some of whom transfer data out to the Internet millions of times a day (e.g., customers backing up their data to on-premises IT solutions), should be charged for use of this service. For example, eliminating DTO fees would mean that a [≫] would essentially have zero charges to handle all of their internet traffic if they ran in the cloud, as opposed to on-premises where they pay for all of those elements. [≫]. If these customers did not pay cloud services providers for the networking services they consume, this would stifle innovation in the networking and content delivery market, and would force customers of other cloud services to subsidise the delivery costs of the largest consumers of bandwidth. This would take the form of higher charges on other cloud services to fund the networking services that would then be "free". [≫].¹³

https://www.tandfonline.com/doi/epdf/10.1080/17441056.2023.2228668?needAccess=true.

<sup>[≫] &</sup>quot;Economic analysis of proposed regulations of cloud services in Europe", European Competition Journal, 2023, Vol. 19, No. 3, 522–568, available at:

16. The EF Working Paper indicates that, as part of its evaluation of this remedy option, the CMA will consider the materiality of relevant DTO costs to cloud services providers which may need to be absorbed if they can no longer recover these costs through DTO fees. As explained in and evidenced by the illustrative investments provided at Section II above, building and using the AWS network is costly, and banning or capping DTO fees would not make these underlying infrastructure costs disappear. Providers would have no incentive to invest, as AWS has, to bring down their infrastructure costs, and customers would not get the resulting benefits in network scale, availability, and price decreases in other services.

#### ii. Banning DTO fees would likely result in unintended and damaging consequences

- Banning DTO fees would likely result in unintended and damaging consequences, such as excessive data transfers and inefficient usage of the network.  $[\times]$ .
- Similarly, if DTO fees were banned, customers transferring data out of the AWS network would have no reason to care about efficient network usage or architecture, as there would not be a financial component to the transfer. The CMA has suggested that customers may have other incentives to encourage efficient network use (such as latency, security, data governance); that may be the case for [≫].
- 19. Further, eliminating DTO fees makes it cheaper for malicious actors to conduct Distributed Denial of Service ("DDoS") attacks, creating a very significant risk to the Internet more broadly. If DTO usage were free, anyone could generate huge amounts of traffic in order to overwhelm websites and online services for users. <sup>14</sup> For example, in January 2024, multiple DDoS attacks hit Swiss websites, including some belonging to the Swiss Federal Administration, during the World Economic Forum <sup>15</sup>, and in April 2024, OVHcloud mitigated a DDoS attack which reached a packet rate of 840 million packets per second. <sup>16</sup> In the fourth quarter of 2023, Cloudflare observed a 117% year-over-year increase in network-layer DDoS attacks. <sup>17</sup> This is a very real concern for cloud services providers, which should not be further exacerbated by unwarranted intervention.

#### iii. Banning DTO fees for specific purposes is technically challenging

20. The EF Working Paper explores the potential for banning DTO fees for certain types of data transfer. The EF Working Paper recognises that cloud services providers cannot identify the

A DDoS attack is a malicious attempt to affect the availability of a targeted system, such as a website or application, to legitimate end users. Typically, attackers generate large volumes of packets or requests ultimately overwhelming the target system. In case of a DDoS attack, and the attacker uses multiple compromised or controlled sources to generate the attack.

See <a href="https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-99736.html">https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-99736.html</a>.

See https://thehackernews.com/2024/07/ovhcloud-hit-with-record-840-million.html.

See <a href="https://blog.cloudflare.com/ddos-threat-report-2023-q4">https://blog.cloudflare.com/ddos-threat-report-2023-q4</a>.

purpose of the transfer<sup>18</sup>, and AWS has previously submitted that AWS cannot determine whether traffic transferred from the AWS network necessarily implicates a movement of data to another cloud, an on-premises resource, an end user, or a CDN, because there are a vast number of networks to which customers can transfer data that have multiple and/or ambiguous purposes.<sup>19</sup>

- 21. As the EF Working Paper recognises, customer self-nomination/attestation relies on customers being proactive, <sup>20</sup> and would require AWS to verify that a customer is indeed transferring its data out of the AWS network. As AWS has experienced from its provision of free or reduced DTO as described in Section IV below, [%].
- 22. The EF Working Paper also considers whether using the Border Gateway Protocol peer Autonomous System Number ("ASN") may be suitable as an automated but less accurate proxy for the identification of data transfers. Aggregating data transfers by ASN does not provide the ability to determine the purpose or type of a transfer, only the network involved in the transfer. Furthermore, resolution based on ASN may not be accurate, as many cloud providers use the same ASN for announcing resources from different services, some of which are not cloud computing related. Cloud services providers are reliant on information from the customer to determine the purpose of a transfer, there is no system or standard that can provide that information. The purpose of the transfer is critical, as customers may transfer data to other networks for a wide variety of reasons that do not constitute switching or multiclouding (e.g., transferring files to productivity software or other software products that are hosted on the destination network, or exchanging data with third parties via AdTech platforms).
- 23. There is no "workaround" to solve the issue of identifying purpose of transfer other than information from the customer. Indeed, if there was something more automated that would alleviate the administrative burden described above, then AWS would have already implemented it. The imposition of a broader ban on DTO fees while providers attempt to develop a mechanism to identify switching or multi-cloud-enabling transfers would be punitive, and wholly inappropriate.

<sup>18</sup> EF Working Paper, paragraph 4.41.

<sup>&</sup>lt;sup>19</sup> [%].

<sup>&</sup>lt;sup>20</sup> EF Working Paper, paragraph 4.42.

<sup>21</sup> EF Working Paper, paragraph 4.43.

- B. Price control remedies Capping DTO fees by reference to other fees charged by the cloud provider (e.g. ingress fees or other data transfer fees)
- 24. Capping DTO fees by reference to other fees charged by the provider (for example, internal data transfer fees) ignores the inherent differences in cost between these transfers. As we have already explained, AWS apportions cost based on usage, and its per-GB costs are higher for DTO than internal data transfer. For example, [><].<sup>22</sup>
- 25. Therefore, in AWS's case, it would be forced to cap its DTO fees [≫]. As the CMA has identified as a risk with this potential remedy, [≫]. This means that customers with low DTO usage would end up paying more for internal transfer without getting much benefit of the reduced DTO rates, effectively making cloud services more expensive for customers with lower DTO usage.
- C. Price control remedies Capping DTO fees by comparison to the costs incurred by the cloud provider
- 26. Price controls are costly to implement, and may not even be workable due to the complexity of costs associated with data transfers. The cost to the provider will depend on the specifics of the transfer, e.g., time of day, amount of data, start and end location, as well as the quality, and associated costs of the provider's network. Further, these cost components dynamically change over time, making price controls even harder to enforce. All cost components are relevant, including [ $\times$ ]. Indeed, [ $\times$ ]% of bytes transferred out of AWS are [ $\times$ ].<sup>23</sup> Any CMAdetermined price level would have to account for each provider's differing network infrastructure and cost allocation. We consider it unrealistic for the CMA to be able to set an appropriate level that doesn't disproportionately impact those providers with more sophisticated networks and allocation models. The CMA will be aware that the legislation in France to secure and regulate the digital space ("SREN") 24 originally proposed a cost "ceiling" on "in parallel" data transfers as part of its implementation of the EU Data Act, but this was not taken forward following discussions relating to the challenge of determining an appropriate ceiling between providers and ARCEP, the French regulator in charge of enforcing the law.<sup>25</sup> While AWS disagrees with the need for a cap linked to costs,  $[\times]$ .

<sup>&</sup>lt;sup>22</sup> [**>**].

<sup>&</sup>lt;sup>23</sup> [**>**].

On 10 April 2024, the French National Assembly approved the initial version of the "projet de loi visant à sécuriser et à réguler l'espace numérique" (SREN) Act.

The Autorité de Régulation des Communications Électroniques, des Postes et de la Distribution de la Presse is the French regulatory authority in charge of regulating telecommunications, postal services and print media distribution in France.

27. Further, based on the EU Data Act and as described at paragraph 37 below, AWS has direct experience [≫]. AWS wants to provide its customers with simple pricing that does not fluctuate, but that is extremely difficult to do when basing on costs that differ by AWS Region and change over time.

28. Capping these charges at cost may force providers to increase prices of other cloud services in order to maintain positive margins, which, as discussed at paragraph 11 above are not inherently anti-competitive.

#### D. Price control remedies – Direct connections should not be in scope of any potential remedies

29. The EF Working Paper indicates that the CMA is considering whether DTO fees for direct connections should be included in the scope of any potential remedies. Direct connections are an enhanced service offered to customers who require dedicated network connections to AWS at locations and connection speeds they specifically choose, providing them with the ability to optimise for their specific latency, security and geographic considerations. [%]. If there was a proposal to cap these services at fees charged for other data transfer charges, or to remove charges altogether, then providers would simply stop innovating or improving them.

### E. Information transparency remedies

- 30. The EF Working Paper indicates that the CMA is considering whether an information transparency remedy is necessary to remedy any potential concern around the visibility and clarity of DTO fees for customers.
- 31. AWS believes such an information transparency remedy is unnecessary, as DTO pricing is already displayed transparently on AWS's website to both customers and potential customers. [≫]. Therefore, AWS does not consider that a complementary information transparency remedy is necessary either as a standalone remedy or in order for a price control remedy (which is not warranted) to be effective.

- IV. AWS HAS ALREADY ELIMINATED DTO FEES GLOBALLY (INCLUDING IN THE UK) FOR SWITCHING CUSTOMERS, WHICH REMOVES ONE OF THE WORKING PAPER'S TWO POTENTIAL CONCERNS AROUND DTO FEES
- 32. To the extent that there was any perceived concern that DTO fees act as a barrier to switching or multi-clouding, as of March 2024, AWS has eliminated DTO fees globally (including in the UK) for switching customers, which removes one of the EF Working Paper's two potential concerns around DTO fees.
- 33. AWS does not believe that the perceived concerns which gave rise to the EU Data Act's cloud-switching provisions were properly explored before the law was finalised, and welcomes the CMA's detailed review of overlapping areas, including data transfer, before determining whether intervention is necessary. [≫].
- 34. Customer reaction to AWS's free DTO programme for switching customers corroborates Jigsaw's customer research findings that DTO fees are not and have not been a barrier to customers switching,<sup>26</sup> as AWS [≫] customers wanting to switch from AWS since the introduction of its free switching programme in March 2024, [≫] the programme being publicised through a number of AWS channels and receiving significant media coverage.<sup>27</sup> To be eligible for free switching, customers must fully switch away from AWS to another cloud provider, or fully switch a particular service off AWS to another cloud provider. To initiate the process, a customer must notify AWS if they believe that they qualify for free switching through the AWS customer support team. <sup>28</sup> AWS's customer support team will then apply credits to eligible customers to facilitate the free switch. [≫].<sup>29</sup>
- 35. As of 22 July 2024, AWS had received [≫] requests for AWS's free switching programme worldwide. Of that total, [≫] were eligible<sup>30</sup>, and [≫] were not eligible, either because the amount of data which needed be transferred out of the network fell within the existing AWS DTO Free Tier, or because AWS's customer support team concluded that the customer was not switching from AWS to another provider, (in full or for a particular service). <sup>31</sup> The remaining requests were either [≫].
- Jigsaw: Cloud Services Market Investigation Qualitative Customer Research Final Report, May 2024, paragraphs 5.1.2; 5.1.3; 5.2.2; 5.3.7.
- For example, see <a href="https://aws.amazon.com/blogs/aws/free-data-transfer-out-to-internet-when-moving-out-of-aws/">https://aws.amazon.com/blogs/aws/free-data-transfer-out-to-internet-when-moving-out-of-aws/</a> and <a href="https://aws.amazon.com/blogs/networking-and-content-delivery/promoting-customer-choice-aws-takes-another-step-to-lower-costs-for-customers-changing-it-providers/">https://aws.amazon.com/blogs/aws/free-data-transfer-out-to-internet-when-moving-out-of-aws/</a> and <a href="https://aws.amazon.com/blogs/networking-and-content-delivery/promoting-customer-choice-aws-takes-another-step-to-lower-costs-for-customers-changing-it-providers/">https://aws.amazon.com/blogs/networking-and-content-delivery/promoting-customer-choice-aws-takes-another-step-to-lower-costs-for-customers-changing-it-providers/</a>.
- For further information on the process for requesting free switching, please see the Amazon EC2 FAQs, "Data transfer fees when moving all data off AWS":

  <a href="https://aws.amazon.com/ec2/faqs/#Data">https://aws.amazon.com/ec2/faqs/#Data transfer fees when moving all data off AWS</a>.
- [ $\times$ ] to switch away from AWS, either partially (by service) or fully. [ $\times$ ].
- <sup>30</sup> [**>**].
- Please note that [%] indicated that AWS had received [%] eligible requests and [%] ineligible requests for AWS's free switching programme; [%].

36. Of the [★] eligible requests received since AWS launched its free switching programme worldwide, based on anecdotal customer feedback, customers who were eligible to switch [★], and in some cases [★]. In line with AWS's expectations based on its interaction with customers, and the customer feedback received by the CMA in its market outreach, the free switching programme [★].

- 37. AWS has also been supporting European customer requests for reduced data transfer rates where they use another cloud services provider "in parallel" with AWS. The EU Data Act stipulates that AWS's fees for such transfers must not exceed its costs. [≫]. However, customers are invited, on AWS's pricing pages, to contact customer support if they believe they are eligible for reduced data transfer rates under the EU Data Act. There is a high degree of uncertainty on which use cases qualify for reduced rates under the legislation, and [≫]. As of 18 July 2024, AWS had received [≫] customer requests in relation to "in parallel" use, [≫] determined as eligible. The total amount of credits approved to support these [≫] customers is [≫].
- 38. [≫].
- 39. [%]

#### V. CONCLUSION

- 40. As demonstrated by AWS's numerous submissions and internal documents relating to its investments, AWS has spent significant time, money, and human resource to provide customers with a network of exceptional quality. This has resulted in a network that is unparalleled in terms of its security, availability and resiliency. Indeed, AWS's continuous investment in physical infrastructure has yielded tremendous benefits to customers and the UK economy, and these investments should be encouraged and compensated and compensated. Regulation or alternative intervention which prevents AWS's ability to make these investments would lead to reduced innovation and poorer outcomes for UK businesses.
- 41. Regulatory intervention in a dynamic industry that is functioning well, such as cloud services, risks negatively impacting the long-term incentives of providers to invest and innovate. Indeed, some of the regulatory requirements set out by the EU Data Act are likely to result in an unintended reduction of competition and suboptimal outcomes for consumers by softening the incentives of cloud service providers to compete for new customers and to innovate.

\* \* \*

<sup>&</sup>lt;sup>32</sup> [**>**].

<sup>&</sup>lt;sup>33</sup> [**%**].