In what capacity or on whose behalf are you participating in this public consultation?	Cloud service provider (also includes providers of cloud infrastructure, independent software providers and intermediaries)
In case of representing a company, please specify the type of company:	Large company
Full name (of the participant or represented institution):	[CONFIDENCIAL]
Do you wish to make your name publicly available with your answer or keep it confidential (in which case it will be published as an anonymous answer)?	Confidential
Contact email (will remain confidential)	[CONFIDENCIAL]
1. In your opinion, what will be the main factors that will drive the growth of the sector in the coming years? (max. 300 words).	
2. How would you classify the different types of agents/operators involved in the cloud market value chain? (max. 300 words).	There are several types of players in the cloud market value chain, classified according to their roles and services. In general, a distinction is made between public and private clouds, with a growing trend towards hybrid environments, which optimize the management of services and traffic according to the criticality of the process. Hybridization being a growing trend, interconnection is a differential value that allows connecting to different clouds, taking data from one to another and presenting services according to the user's needs. 1. CNFs (Carrier Neutral Facility): Due to their physical location and density, they are a relevant part and a critical element of the supply chain of the service for all clouds. 2. Infrastructure Providers (IaaS): Operators that provide hosting for public and private clouds, offering scalable infrastructure on demand. 3. Integrators and Managed Service Providers (MSPs): Specialized in infrastructure migration and continuous support. They help companies transition to the cloud, optimizing and managing their resources. 4. Software Developers and Platform Providers (PaaS/SaaS): Companies that build deployable applications on their own platforms or use multiple clouds to deliver services. Some develop their own public clouds, to offer their CRMs in the cloud. Others provide security services and operate across multiple types of clouds. 5. Network and Security Providers: Companies that offer connectivity and cybersecurity solutions essential for the secure and efficient operation of clouds. 6. Cloud Networking Providers: IT infrastructures in which an organization's network and resources are on a cloud platform and are consumed on demand using only a connection. Hosting network resources in the cloud may involve the use of devices on-premises or through a cloud service provider and may include the following network services. 1. Network access, management software. 2. Multi Connectivity. 3. Routers. 4. Firewalls, Security. 5. Load balancers. 6. Ports, Virtual Circuits.

3. Would you highlight any particular feature of the cloud market in Spain as compared to other European countries? How do you assess the overall competitive situation of the cloud market in Spain? Are there any particularly significant trends? (max. 300 words).	Spain has established itself as a key communications hub, thanks to the numerous submarine data cables that reach the peninsula. This improves connectivity and makes many multinational companies see Spain as a strategic hub for business in Europe, Latin America, and Africa. The infrastructure is robust, and the geographical location favors Spain as an entry and expansion point for emerging markets. Another competitive advantage is the growing ecosystem of data centers in Spain, with significant investments from large global providers establishing data centers in the country. This not only improves the availability and resilience of cloud services, but also drives local innovation and skilled job creation. In addition, the support of the energy sector and the favourable price of energy in Spain have facilitated the development of the cloud sector. Public-private collaboration is remarkable, with initiatives to encourage the adoption of advanced and green technologies, which improve market competitiveness. All these reasons have meant that most CSPs have deployed their services in Spain or are in the process of being deployed, being only at the beginning of their development in our country.
4. In your opinion, what are the main elements that determine the dynamics of competition among cloud service providers? In your opinion, which other markets can affect the competitive dynamics in the provision of cloud services? (max. 300 words).	1. Data Center (DPC) Market: DPC are essential for hosting public and private clouds. The availability, location, neutrality and efficiency of these centers have a direct impact on the competitiveness and scalability of cloud services. The sustainability and energy efficiency of data centers also play a crucial role. 2. Cable Networks and Last-Mile Operators Market: This market communicates the ecosystem of cloud services and data centers, through public or private networks. High-speed, low-latency network infrastructure is crucial to ensuring optimal performance and a high-quality user experience. The evolution towards 5G networks and dense and advanced fibre optic technologies remains critical. 3. Software and Services Market: Companies that develop software and applications that are deployed on cloud platforms. This sector drives innovation and the offer of personalized and specialized services, from business applications to artificial intelligence and machine learning solutions. The adoption of open standards and interoperability between platforms are important factors. 4. Labor market: A differential feature is the workforce of highly qualified engineers but cheaper compared to other countries. This offers a significant competitive advantage. 5. Hardware and Components Market: Manufacturers of servers, storage and other components are fundamental to cloud infrastructure. Supply problems in this market, such as the shortage of next-generation chips or GPU cards, can limit the expansion of clouds, affecting the supply of services. 6. Energy Market: The availability and cost of energy significantly affect the operation of data centers, given their high energy consumption. The transition to renewable energies and energy efficiency are critical factors for the sustainability and competitiveness of cloud services. 7. Regulation and Public Policy: Government policies and regulation in terms of data protection, privacy and cybersecurity have a impact on the cloud market. Alignment with regulations such as GDPR in Europe is essential for user trust and global competitiveness.
5. In your opinion, when contracting cloud services from an operator, how do the main providers' offers differ from each other? (max. 300 words).	

6. When contracting cloud services from an operator, describe in order of importance the factors that, in your opinion, are the main determinants of the contracting decision, such as, among others, price, technical quality of the service, the provider's portfolio of services, security, transparency of the contract, nationality of the provider, previous relationship with the same provider, previous knowledge by the staff, etc. (max. 300 words).	
7. When contracting cloud services from an operator, assess the extent to which contract terms and conditions are negotiable (max. 300 words).	
8. Indicate what difficulties may arise, at the time of contracting a provider's cloud services, to anticipate the final cost of use of the contracted service (max. 300 words).	Public cloud operators commonly offer pay-as-you-go models, which means that the total cost can be unpredictable as it depends on the actual consumption of resources such as storage, bandwidth, processing, etc. Another difficulty is the contracting and fee structure in the public cloud. Contracts often include multiple tariffs for different services and levels of use. The complexity of billing and the need to constantly monitor usage to avoid cost overruns may be an additional layer of difficulty. In contrast, private cloud operators typically offer more predictable costs. These operators usually set a monthly price, especially since it does not depend on the configuration of the products consumed. Finally, one of the great challenges is to create an efficient, agile and resilient interconnection model. Because given the diverse nature of each cloud operator in terms of the interconnection model, available locations, etc. Many clients find it challenging to understand how to solve their problems and needs.

9. Assess the transparency of contract terms and conditions and indicate whether changes in contract terms and conditions are common (max. 300 words).	
10. In migrating to the cloud, explain the role of the integrator or intermediary, and its relevance to the competitive dynamics of the market (max. 300 words).	The integrator or intermediary and that of Vendor Lock-ins in cloud migration is crucial to ensure business continuity and minimize risks. Integrators facilitate a smooth transition, managing infrastructure and optimizing costs for the customer. In addition, they ensure that a possible reversion to on-premises environments is viable and non-traumatic, providing flexibility and security to companies. But it is very important not to be anchored to a manufacturer and for this it is essential to interconnect between platforms, which allow the customer to move their loads easily from one cloud to another. As strategic consultants, integrators recommend the most suitable cloud platform based on the client's technical and economic needs. They help select solutions that maximize efficiency and performance while minimizing costs and manage interoperability between different cloud platforms to leverage the best capabilities of each provider. Integrators also play an essential role in implementing security and compliance strategies. They ensure that migrated data and applications comply with local and international regulations, which is vital in highly regulated sectors such as finance and healthcare. The relationship between integrators and technology manufacturers is relevant to the market. Manufacturers often exert influence through channel strategies, offering discounts, training, and other incentives to promote the use of their products. This dynamic can influence the integrator's recommendations, but it can also benefit customers through better pricing and specialized support. In addition, integrators provide added value through continuous post-migration management and support services, ensuring that cloud solutions evolve and optimize according to changing business needs. We must also value the union in the same location of neutral DC's and Cloud Networking services, having them with all the possibilities they offer, is an undeniable advantage in migration and in the connectivity of end customers.
11. For software development companies offering independent cloud-based software applications, consider which are the main channels to reach the end customer and the factors on which the choice of the chosen channel(s) depends. When offering independent cloud-based software applications, consider whether it is possible to do so in more than one marketplace from a vertically integrated provider (max. 300 words).	This is a very complex question and difficult to answer. Speaking only of Spain, Software Development companies, DS onwards, usually develop sectoral management software (vehicles, gyms, or logistics), and to a lesser extent software that can be integrated into public or private platforms. The channels are those already known, internet marketing, web indexing, attendance at trade fairs, etc. Offering a standalone software solution for the cloud presents several ways to reach the end customer. In Spain, software development companies (DS) tend to focus on sector management solutions (vehicles, gyms, logistics) and software that can be integrated into cloud platforms. The main channels for reaching the end customer include: 1. Marketplace and Software Platforms: Publishing on Marketplace expands reach to a global audience, facilitating integration and visibility. 2. Interconnection Services: There are interconnection services or platforms that allow the customer to make use of service providers, CSPs and that also allow interconnection between platforms. The choice of public or private channels depends on several factors, such as the type of target customer (B2B or B2C), the marketing budget, the competition, and the nature of the software. For example, B2B solutions tend to benefit more from strategic alliances and industry events, while B2C solutions can take better advantage of digital marketing. Regarding the possibility of using multiple vertically integrated operator platforms, it is not only possible but recommended. This allows companies to diversify risks, access different customer bases, and maximize their reach. Integrating your software across multiple platforms allows you to take advantage of the specific benefits of each ecosystem and offer greater flexibility to customers.
12. Assess the conditions required to intermediaries to be able to sell the products of one or more cloud service providers, and whether in your opinion they affect the competitiveness of the final solution offered by the intermediary in relation to other sales channels (max. 300 words).	A critical aspect is the ability of intermediaries to manage the interconnection and integration of services from multiple vendors. This is not only a technical challenge, but also an opportunity to offer more complete and flexible solutions. Intermediaries that are able to effectively integrate services from different providers can offer significant added value to their customers. Competition is intense both between intermediaries and between Cloud Providers. Intermediaries must differentiate themselves in terms of price, quality of service, customization of solutions and after-sales support. Cloud Providers, on the other hand, compete to attract intermediaries by offering incentives such as discounts, training, advanced technical support, and certification programs. These incentives can influence the intermediary's decision on which products to promote, thus affecting the competitiveness of the market.

13. Assess whether there are significant barriers to entry in the cloud services or cloud infrastructure market. If so, indicate and describe what type of barriers (e.g., regulatory, investment size, availability of qualified staff, other) and indicate which services or cloud layer (IaaS, PaaS, SaaS) are affected by each barrier (max. 300 words).	There are several significant barriers to market entry for cloud services and cloud infrastructures, but we must differentiate between public and private cloud. 1. Regulatory Barriers: Regulations particularly affect public administrations, where the public procurement model often does not fit well with the pay-as-you-go model of public clouds, although progress is being made towards subscription models. Regulations on residence and data transmission in the EU are strict; the data cannot reside outside the EU or be transmitted abroad. This primarily affects IaaS (Infrastructure as a Service) and PaaS (Platform as a Service) services, where regulatory compliance is critical to the operation. These barriers do not affect private clouds, however, where contracting can be in PAYG. 2. Amount of Investments: Controlling investments is crucial for any company that wants to enter the cloud market. An incorrect calculation of consumption, in a public cloud, can result in significant cost overruns. This barrier affects all cloud layers (IaaS, PaaS, SaaS - Software as a Service), since scalability and resource management capacity are essential. On the other hand, in a private cloud, these cost overruns are more manageable and controllable. 3. Availability of Qualified Personnel: The lack of qualified technical personnel remains a major barrier. Although the growth of cloud services has stabilized, the demand for specialized personnel has not decreased. Talent training and retention are constant challenges, affecting all cloud layers (IaaS, PaaS, SaaS), as each requires specific skills for the efficient implementation and management of services.
14. In your opinion, assess which cloud layers (IaaS, PaaS, SaaS) present the greatest competitive challenges and explain why (max. 300 words).	
15. For companies already present in the cloud market, what are the main obstacles to their activity and to competition in the sector? (max. 300 words).	

16. Assess what technical or economic difficulties exist for migrating to the cloud. Indicate, in your opinion, which solutions could be implemented to mitigate them (max. 300 words).	Migrating to the cloud involves several technical and economic challenges. A major technical issue is virtualizing on-premises computers, especially legacy systems that are difficult to virtualize and may necessitate new equipment. Additionally, the lack of standardization between cloud platforms can lead to vendor lock-in, where each cloud service is specific to its platform, making future migrations to other providers difficult and costly. To mitigate these difficulties, an effective solution is to transform certain hosted services to SaaS (Software as a Service) models. For example, migrating email services to SaaS solutions is a common and proven practice. When doing so, it is crucial to ensure that the elements are standard and migrable to other platforms to maintain flexibility and avoid lock-in. Another solution is to implement a hybrid cloud strategy, which allows organizations to keep some of their infrastructure on-premises while taking advantage of the cloud. This way, they can gradually migrate their applications and data, mitigating the risks associated with a complete migration in one go. Additionally, piloting before a full migration can help identify and resolve potential issues. These tests allow companies to evaluate the performance and compatibility of their applications in the cloud environment, adjusting the strategy as needed. Finally, we emphasize the relevance of interconnection within Neutral Data Centers that have Cloud-Networking to facilitate this migration. Regarding the economic aspects, there are several aspects to take into account: 1. The excessive hours that migrations usually pose, especially if they involve the reconfiguration of the services to be migrated from scratch. 2. The learning curve when migrating different clouds and the costs involved. 3. The coexistence of multiple platforms and the management of costs in each of them. Therefore, proper planning and collaboration with experienced system integrators can ensure a smoother, more efficient, and cost-controlled transition.
17. In your opinion, once the services of one cloud provider have been contracted, what technical, economic or other factors might make it difficult to change provider? In your opinion, which solutions might be implemented to mitigate these difficulties? (max. 300 words).	The main issue with public clouds is the unique differences between services, making migration difficult without a unified standard. For example, migrating a firewall requires reconfiguring all rules and settings. This lack of standardization complicates switching providers. As for private clouds, they offer infrastructure services for customers to deploy their own services, easing migration between platforms. For example, migrating a firewall in a private cloud allows deploying an appliance and applying an existing configuration file, ensuring it works in both clouds. Economically, switching providers can incur significant costs for data migration, service reconfiguration, and staff training. Long-term contracts and high exit fees also pose major barriers, especially with public cloud providers. Reliance on vendor-specific services, like managed databases or AI, increases migration complexity and cost due to the lack of direct equivalents in other vendors. To reduce these difficulties, several solutions could be adopted: 1. Adoption of Open Standards: Encouraging the use of open standards and interoperable formats can facilitate migration between different cloud providers. This includes the use of standard APIs and common data formats. 2. Implementing Multi-Cloud and Multi-Connection Strategies: Developing a multi-cloud strategy allows companies to distribute services across multiple vendors, reducing vendor lock-in and easing migration. Interconnecting all the clouds is crucial in this approach. 3. Creation of Hybrid Models: The possibility of hybridizing network systems is given by the choice of a Cloud-Networking provider that facilitates and simplifies the interconnection of all elements. 4. Automation and Management Tools: Using automation and configuration management tools can simplify the migration process. These tools can help replicate configurations and services more efficiently between different platforms. 5. Training&Training: Investing in the continuous training of technical staff so that they are familiar with multiple cloud platforms and migration technologies can reduce the risks and costs associated with changing providers.
18. In your opinion, what are the difficulties in contracting the services of more than one cloud provider? In your answer, please assess aspects of vertical interoperability (between services located in different cloud layers), horizontal interoperability (between services located in the same cloud layer) and interoperability of the data produced when using different cloud services. In your opinion, what solutions could be implemented? (max. 300 words).	Using multiple cloud providers requires overcoming significant economic and technical challenges. Economically, contracting access to multiple clouds can be expensive. Additionally, there are costs associated with managing and maintaining connections with different providers, as well as egress fees that some providers impose when transferring data outside their platforms. From a technical perspective, vertical and horizontal interoperability pose major challenges. Vertical interoperability involves integrating services at different layers (IaaS, PaaS, SaaS) from various vendors. The lack of common standards and differing APIs complicate this process, often requiring significant code rewrites when moving applications between PaaS environments. Horizontal interoperability, the integration of services at the same layer (e.g., databases from different vendors), faces challenges due to protocol and data format differences. This can cause incompatibilities requiring complex solutions. Ensuring data accessibility and transferability between clouds without losing integrity or security is crucial, but varying data formats and security approaches across vendors complicate this process: 1. Use of Multi-Cloud Tools and Platforms: There are already tools that allow you to connect multiple points of presence (POPs) from different providers in a single place or in several for redundancy, facilitating communication between them with low latency and through private networks. This helps to reduce costs and simplifies technical management. 2. Adoption of Open Standards: Encouraging the use of open standards and compatible APIs can facilitate vertical and horizontal interoperability. This includes the use of containers and their orchestrators, which allow applications to be deployed consistently across different cloud environments. 3. Interconnection and Data Management Solutions: Implementing an Interconnect architecture can help efficiently manage and move data between clouds, ensuring that data is accessible and secure no matter where it resides. Here we talk again about the importance of Cloud Networking Providers and their central role in interconnection.

19. Assess the advantages and disadvantages of adopting interoperability standards or protocols, including their impact on competition and/or innovation (max. 300 words).	
20. When contracting services from the same cloud provider, and from the point of view of its commercial offer, assess what obstacles exist to contracting each service separately (max. 300 words).	
21. When contracting additional services from a cloud provider, assess the relationship between contracting these services and the discounts for the use of additional services (max. 300 words).	
22. Assess the existing obstacles to competition in the public procurement of cloud services, and indicate the solutions that could be implemented in your opinion (max. 300 words).	

23. Provide additional comments on other barriers, distorting factors or issues that you consider relevant to the functioning of this sector (max. 500 words).	
24. Assess the current European and national regulatory framework in its ability to promote an efficient and competitive operation of the cloud services market. If so, how could it be improved? (max. 500 words).	
25. In your opinion, what other regulations could affect the competitive dynamics of the cloud sector? If so, how could they be improved? (max. 500 words).	

26. Provide additional comments on other solutions or recommendations (not necessarily of regulatory nature) to improve the competitive dynamics in the cloud sector (max. 500 words).	