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Cadenabbia Memorandum on the European Cloud Policy

Europe's Quest for a Sovereign Cloud
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› **Competition enforcement** – Competition authorities should address anti-competitive issues such as technical and commercial lock-ins that have foreclosed the cloud infrastructure market for too long.

› **Moratorium of new cloud-related legislation** – Until the current regulatory framework effectively takes effect and is consequently enforced, there should be a moratorium of introducing new cloud-related legislation.

› **Aggregation, federation, and interoperability** – The EU can incentivize the creation of forms of aggregation, use of federated catalogues, and provision of interoperable services.

› **Trust** – Europe needs a trustworthy platform that enables the free and open verification of operators' services regarding the regulation in a uniform and automated manner.

› **Convergence and strategic vision** – All EU initiatives must be harmonized under a common cloud strategy and governance mechanism. Agency or joint undertaking should ensure convergence of future investments.

› **A pan-operator federation** – Cross-border and operator connectivity is only possible in a federation to which all EU network providers contribute and integrate in their networks.

› **The guidance on public procurement** should incentivize each member state to actively support the EU Cloud Strategy.

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Executive Summary

Cloud computing is essential to Europe, not simply as a technology sector, but as the foundation of the data economy. Thus, it is interconnected with every sector. Leadership in emerging technological areas, such as AI, depends on robust and resilient European cloud providers. Europe's cloud services sector, however, has been allowed to become dominated by a small number of very large overseas players – hyperscalers. Significant barriers exist to rebalancing this situation and ensuring a competitive market for these essential cloud services. These include fragmentation, insufficient access to capital, and unintended consequences of EU regulation. As a result, many European cloud service providers, usually SMEs, are unable to fully compete with hyperscale rivals. In addition, certain hyperscalers leverage dominance acquired in adjacent markets, such as productivity software, to further disadvantage local vendors and thus undermine a competitive market for cloud services in Europe. Underenforcement of traditional competition law at the EU and nation state level, as well as missed opportunities with the Digital Markets Act (DMA), currently leave dominant legacy firms free to continue to use unfair software licensing practices to distort cloud competition. Moreover, European investment initiatives are often not sufficiently targeted to deliver opportunities to European cloud service providers.

Introduction

Cloud computing is a critical market that underpins our Digital Public Infrastructure and broadly refers to the storage and processing of data and provision of computable resources that are accessible online in a flexible and scalable manner, anywhere at any time. Over the last couple of years, the public and governmental focus was on AI, foundation models, data, and privacy. Policy makers, industry representatives, and civil society have neglected the fact that cloud computing services are the essential infrastructure for both businesses and individuals. Not only is it the way by which millions of people store large amounts of data, use software remotely, stream music, and videos and play games, but it is fundamental to every aspect of the digital economy.

Although many consider cloud services as part of the pure technology sector, they are in fact inextricably linked to every sector in a global sense. The cloud space underpins a whole host of online services – from social media to AI foundation models. Given the contemporary level of dependency on technology, no sovereignty is possible without a sufficient level of autonomy from global cloud providers. The biggest three cloud providers (all non-European) control 2/3 of the market and have market capitalization greater than the GDP of many European countries.

Key Factors Hindering Competition

Without claiming exclusivity and completeness, we have identified some of the factors that have hindered the competitiveness of the European cloud industry:

› **Leverage of market power and cloud as a secondary business:** The European cloud market consists of many companies. The market is, however, dominated by digital giants which in the cloud vocabulary are known as hyperscalers: Microsoft Azure, Amazon AWS, and Google Cloud. However, some of these companies who were also dominant legacy software providers before the emergence of cloud services are leveraging their power in adjacent market segments (in must-have productivity, database, and enterprise resource planning for example) into the cloud infrastructure space to rapidly gain market share – often at the detriment of European cloud service providers, which lack the legacy dominance.

› **Fragmentation:** No single EU cloud provider possesses a critical mass to compete with the global hyperscalers. Furthermore, no single EU cloud provider has the comprehensive offering, coverage, and scalability required by current demand.

› **Uneven data flows**: There is no even distribution of global data flows today. While the EU and the US are each other's largest partner when it comes to data flows, the distribution of data is one-sided, with the EU having only a marginal share. At the same time, over 90% of EU-based firms send data to the US.

› **Capital** – Cloud is a capital-intensive business that requires continuous and significant investments that are not affordable for many of the EU providers, which are mainly SMEs. EU countries individually are not only too small to impose their regulations, but even to influence the engineering decisions of the hyperscalers. For example, Italy is projected to spend €4.5 billion on cloud investment in the next three years, but even this amount is not significant enough to influence the investment decisions of an hyperscaler like Google to invest in something different than its standard solution. Moreover, most investments made by the EU have effectively gone to the hyperscalers.

› **Multiple cloud-related legislations**: The current environment requires extensive implementation and compliance investments by cloud providers operating in the EU. The multiple EU regulations adopted recently may not in fact counter the dominance of hyperscale cloud providers and could turn out to be counterproductive for smaller European cloud providers, including SMEs providers and users of technology. Compliance to, and certification and verification of an ever increasing and interleaved amount of regulation produced at EU- or member state-level cannot be achieved without the substantial allocation of legal, technical, and economic resources. Paradoxically, this further reinforces the position of the few dominant incumbent players as the only ones who can afford the costs and allocate sufficient resources to comply with the new rules.

› **Underenforcement of EU competition law**: Anticompetitive practices have not been sufficiently tackled by competition authorities. Self-preferencing and discrimination practices enforced through unfair software licensing practices restrict choice, increase costs for customers, and make it impossible for alternative players to compete. The cloud infrastructure market has grown threefold in Europe between 2017-2020 (from 2 to 6 bn Euro just on Infrastructure as a Service (IaaS)), however European providers have contemporarily lost two-thirds of their share (EC report 2022).

> › **The DMA has missed the mark:** The first wave of the DMA gatekeeper designation indicates that the DMA probably has missed the mark. Although the DMA enumerates cloud services as core platform services, it includes no "prohibition of "self-preferencing" practices by cloud gatekeepers. In addition, cloud appears to be out of the scope of DMA since it considered to qualify as an "intermediation service". This, together with products and service-specific prohibitions, makes the DMA technology-specific, instead of principle-based, and thus contrary to the rules adopted by other countries, such as the UK, Germany and Australia to cite a few.

> › **Important project of common European interest** dedicated to shape the next generation of cloud infrastructure and services (IPCEI-CIS) has been perceived by the industry as a too comprehensive instrument whose purpose is not clear enough, and which lacks a strict timeframe.

> It is questionable if the model is suitable for the digital and cloud area since the scope is too broad and financing for the development of European cloud infrastructures does not appear to be available as part of the IPCEI. An initiative focused on technology innovation like the IPCEI-CIS should support the creation of European cloud-edge infrastructures and not only software frameworks.

> › **Gaia-X** is not meant to be a European alternative to hyperscalers. However, it is often characterized as such due to extremely high and incorrect expectations. Rather, Gaia-X' mission is to set a framework for trusted, secure, and interoperable cloud services.

Key Recommendations

The participants of the **Cadenabbia Forum** within **the European Data Summit** make the following **political and legal recommendations** for boosting EU digital and cloud services competitiveness:

> › **Effective competition enforcement** - European and national competition authorities should address anti-competitive issues, such as software technical and commercial lock-ins, that have foreclosed the cloud infrastructure market for too long. The enforcement of traditional competition rules must ***focus on prioritizing self-preference abuses and discriminations for running alternative software.*** This recommendation is even more valid as the large cloud providers are now beginning to combine their services with AI. The UK's ongoing probe over competition concerns can serve as an inspiration. In this direction, the European Commission may also clarify the applicability of the DMA to cloud services providers.

> › **Moratorium of new cloud-related legislation and implementation of existing rules:** Until the current regulatory framework truly takes effect and is consequently enforced, there should be a moratorium on introducing new legislation.

> › **Aggregation and federation of cloud services** – The EU can incentivize the creation of forms of cloud services aggregation (commercial agreements, joint go to market, joint venture, etc.) across European cloud providers to build the resource capacity necessary to compete with non-European providers.

The European Commission has made available over Euro 150 Mio (SIMPL EU projects) to incentivize the creation of federated catalogs across aggregated operators, to leverage shared portfolios, to capitalize on differentiation, to reduce technology refresh costs on individual providers, to reduce fragmentation, and to limit offerings availability across member states. Using such federated catalogues and the specifications developed by initiatives such as Gaia-X, cloud vendors of all sizes should be able to compose cloud services from interoperable service components to compete at the scale and scope demanded by customers.

› **Make interoperability and data portability requirements a competitive advantage** – Based on recent legislation, in particular the EU Data Act, the European Commission and the member states should demand the use and incentivize the offering of services natively interoperable and portable across multiple nodes, multiple operators, and multiple territories, as a requirement for treating critical and strategical data, and make interoperability and data portability requirements a competitive advantage.

› **Trust** – Introducing proper safeguards to ensure that any access request to data of EU citizens and businesses is compliant with EU law is a prerequisite for the take-up of trusted cloud services in the EU. Europe needs a common and trustworthy framework that enables the ***free and open verification and certification of operators' services to the European regulation in a uniform and automated manner***. The data localization requirement is one measure that should be complemented with harmonized principles for a European Sovereign Cloud to guarantee immunity to extraterritorial laws.

› **Convergence and strategic vision for the European cloud market** – All European initiatives to cloud must be harmonized under common EU cloud strategy, steering and governance mechanism, including but not limited to: SIMPL, DSSC, DEP, STEP, IPCEI, EDIC, EDIB, etc..

› ***Agency or joint undertaking could ensure alignment and convergence of available and future investments*** in a coherent architecture of common data-infrastructures for Europe's economy. Impact assessment of every program is necessary to justify why a certain decision is positive for the European economy. Therefore, the programs must be structured according to specific KPIs and desired competitive outcomes. The EU Cloud Strategy should include cloud services, network services, and data spaces where cloud service providers and telecommunication operators work together to create a truly sovereign EU data-sharing infrastructure. Finally, all these ***initiatives must be designed and implemented with a "cloud aware" timeframe, which is two to three years***.

› **Re-think the role of the EU telecommunication network providers:** Although telecommunication network providers have had very different strategies, the European Commission may consider bringing European telecommunications operators together to consider options about how to federate and collaborate. European telecommunication providers have received support and funding from public institutions in the past decades in order to preserve them as a fundamental infrastructural asset for any country and for Europe. The situation has completely changed: on the one side many EU providers are de facto controlled by non-EU funds. On the other side, the key players have concluded partnerships with US hyperscalers to provide cloud services in Europe.

While telecommunication providers are asking for further investments for 5G/6G and developing new network, without ensuring the creation of a European cloud infrastructure and data platforms, those investments will only serve to reinforce the position of already dominant non-EU providers. New investments should then be allocated in priority to projects of convergence - aggregation and federation - of European network and cloud infrastructure resources, so to build a federated European ecosystem of data infrastructures that can represent a strategic asset for the European data economy to be preserved and evolved.

› **Sustainability and transparency must be core elements of any European cloud strategy:**
Specific targets based on harmonized and recognized standards must be defined, in particular, to reduce data centre energy-consumption, establishing minimum acceptable levels for Power Usage Efficiency or renewable energy adoption. Cloud customers need to ensure their cloud infrastructure providers meet or exceed stringent power, water, recycling, emissions, and heat-reuse targets, based on recognized indicators.
Cloud providers should transparently report and document their efforts to reduce their environmental impact, including by integrating the Scope 3 emissions which are result of activities from assets not owned or controlled by the reporting organization, but that the organization indirectly affects in its value chain. This transparency should allow customers to identify Cloud Infrastructure Service Providers' sustainable services and data centres committed to meet climate and carbon neutral targets, align with the European Green Deal objectives or by reaching them by 2030. Making the cloud sector the first climate neutral industry in Europe is an essential aspect of the digital economy value chain.

› **Harmonize the principles of a European sovereign cloud and create choice:** Diverging positions across European member states on the need to reduce the accessibility to European data by non-European cloud platforms should be harmonized in recognition of the need to regain control over data platforms used in Europe, regardless of their provider nationality. Such harmonization should occur according to a common set of rules to ensure objective evidence of those platforms' technical characteristics and behaviour. Promoting harmonized, competing sovereign offerings should create choice without depriving European customers from the variety of cloud services and functionalities they need to operate the businesses.

› **Gaia-X** now provides a sufficient level of rules and technology mechanisms to publish compliant services and compliance requirements on the procured services. This should be enforced to trigger a market effect of adoption of a standard that requires, in a simple and inclusive way, the description of services in a common format. Moreover, this should allow these services to be inspectable and comparable to one another and to let the users be aware of decisions and give them more freedom of choice.

› **The guidance on public procurement** for cloud should incentivize each member state to actively support the EU Cloud Strategy. EU and single member states should stimulate and incentivize the adoption of a sovereign cloud solution provided by European providers, in particular, but not only, for the public sector. Whenever equivalent alternatives exist, the European Commission should lead by example and choose European alternative to hyperscalers for its cloud.

› **Incentivizing the creation of a federation of existing domestic or EU-wide cloud service providers:** There is no harmonized strategy of cloud criteria for public administration in the member states. This leads to a selection of existing dominant platforms and projects to create a localized version of these dominant platforms; to create cybersecurity rules that must be complied with; and to create centralized cloud infrastructures. Such efforts lead to a dispersion of resources in different directions, rather than incentivizing the creation of a federation of existing domestic or EU-wide cloud service providers capable of meeting the requirements. Ideally, a situation should be created in which national and European resources are used first, and non-European ones are only used if the requirements cannot be fulfilled by European providers.

Impressum

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