

White Paper

*Final workshop in
the framework of the
“Measuring the economic
impact of cloud computing
in Europe” study*

June 27, 2016

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Brussels, 27th of June, 2016

Speaker

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Panel

Hans Graux
Founding partner at time.lex

Sebastiano Toffaletti
Secretary General at European Digital SME Alliance

Carlo Daffara
Founder and CTO at CloudWeaver

Moderator

Graham Taylor, CEO of OpenForum Europe (OFE)

Rapporteur

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Deloitte slides presentation at C-SIG Plenary Meeting, held on 27th of June in Brussels, is available [here](#).

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At the June 27 C-SIG plenary meeting held by the European Commission, Deloitte presented its analysis of the impact of current policy measures under the European Cloud Computing Strategy and potential policy measures, as well as policy options identifying different ways to achieve the Digital Single Market for cloud services. The main focus of the ensuing discussion, moderated by OpenForum Europe, with all C-SIG members was the free flow of data and data locations in particular, especially inside Europe, in order to understand the economy and assess how the cloud industry is expected to evolve in the coming years.

Deloitte posed the following questions as the basis for the discussion:

As a cloud service provider:

- How are you impacted by data location restrictions in your markets (or potential markets where you are not present today)?
- Do you consider that this limits the markets for your services?

As a professional cloud user:

- How are you impacted by data location restrictions in your sector?
- Do you consider that this limits the choice of cloud services, their quality and price?
- Do such barriers create costs or efforts that could otherwise be avoided? What is the order of magnitude of these costs or efforts?
- Do you have any evidence on the impacts?

As a provider: e.g. cost estimations, markets not addressed, etc.

As a user: e.g. price differences, availability of local services, etc.

- Could these be eliminated through a legislative action?
- How would your business model change if free flow of data were to be enabled more? Does your answer differ whether it is SaaS, PaaS or IaaS?
- How would this impact the overall take-up in Europe in your view?

The discussion started with the remark that little data is available on the topic. Because of this, cloud stakeholders need to get together and discuss the potential impact of what the Commission is planning to do in the context of cloud and free flow of data. “Free flow” is not only about access to data, but also about creating

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value based on data, it is about adjusting business models and understanding the rationale for choosing a certain location for the providers’ data centres. The discussion also underlined that the distinction between personal and non-personal data comes into play when considering the free flow of data. Moreover, the impact often depends on whether the provider is a big company or an SME. The different types of existing cloud services (SaaS, PaaS, IaaS) might also have a role to play in differentiating between the economic impacts of whatever policy options we are looking at.

In the public consultation on online platforms, two thirds of respondents considered that restrictions on data location have already affected their business. This is a clear proof of the impact of barriers, it is no longer a hypothetical assumption.

The three panelists approached the topic from different angles.

First, Hans Graux shared his own experience from **the user perspective of an SME law firm**. He underlined how the way in which sector-specific regulations are handled is representative. There is no specific legislation requiring the data to stay in Belgium or the local offices, there are no Cloud-specific rules, but the Bar Association provides guidelines on what needs to be done. Law firms are allowed to use cloud computing, but there is a lot of homework to be done with regard to security, ensuring accessibility to documents, and ability to audit. Since lawyers do not have IT expertise, they cannot undertake that assessment in an informed way. The result is two fold:

1. SMEs stay away from cloud services, which may actually decrease their IT security and make them more prone to bigger risks.
2. Those who opt for cloud, but who would be held responsible if there is an issue. And this can be the case since there is little support for undertaking assessments of cloud services and there is not much assistance from the regulator.

The **data location requirements are indirect**, and there is little evidence for their *raison d’être*. Also, not many tools are available to help SMEs make the right choices. This is suboptimal from both a privacy perspective and a security perspective, as well as from an economic perspective (because there is not a broad range of services from which to choose). The side effect is that the only law firms

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that can deal with such requirements are the bigger ones, which can also set up their own environment. This affects not only the supply side, but also the demand side; in addition it leads to disruption in competition, because smaller players have more difficulties making compliant and safe implementation choices.

The second panellist, Sebastiano Troffaletti, approached the topic from **the perspective of an Alliance of SMEs**, representing both users and providers. He underlined the importance of considering the larger perspective, which is that of the Digital Single Market. We need a space where companies can thrive and grow. We need a **holistic approach** where we prioritise those measures that bring highest value to companies. The cloud computing market offers a big potential. SMEs have managed to become champions in very niche areas at national level, able to grow, but it is still not enough, it is still an immature market. We want companies to grow beyond national borders to become European (even, global) champions. But the question remains: how can we help them go beyond their national borders?

Removing data location requirements is a priority. But at the same time we should also take into account that in some cases, these location requirements have protected SMEs and allowed them to grow. The European Digital SME Alliance has carried out a lot of surveys among its members, which show that whilst they do see barriers in the market, generally these barriers do not result from data location requirements: one is contract law (going abroad imposes a lot of costs in hiring a lawyer to work with national contract law; the lack of European contract law leads to unnecessary costs). The second one is VAT. 28 different VAT regimes and administrations complicate things.

When helping companies establish a data centre in one location that is economically advantageous, we should also consider the issue of tax avoidance by large global players. They can exploit differences in tax systems, they can get 1-3% income tax, while SMEs generally face 20-30% income tax in other locations: this is unfair competition.

There are other important areas (such as standardisation, SLAs, code of conduct, etc.) and we should continue the work on those. These remain very important. Other barriers (such as data access control, data portability, interoperability and lack of trust) whilst not directly linked with data location are additional barriers.

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Also an area which was not discussed until now and which was found from the surveys to be important is **comparability, which is key**: SMEs can hardly compare offers from providers (they talk different “languages”). This is also an important area where standardisation can be a solution.

The bottom line is that we should give the right prioritisation and time precedence to those measures that create value to our economic ecosystem and that can generate positive impacts in the short term, without raising inequality. Data location is more of a topic to be addressed in the longer term.

The **third perspective** presented is the economic one. Carlo Daffara is the founder and CTO of CloudWeaver, **an SME cloud provider**. He pointed out to the considerable amount of data from US groups (Gartner, IDC), which however focus on **penetration**, i.e., how many companies adopted cloud. Carlo insisted on the fact that instead of penetration, more important is **intensity**, which is reflected in spending, i.e., how much companies spend on cloud in Europe compared to the US market. There is very little data on this, but looking at this criterion, the EU is really at the beginning of the formation of its cloud market: below 5% of total IT expenditure is for cloud services. Moreover, the majority of this is on standardised cloud services, such as email, file sharing, teleconferencing, etc. According to the latest data from OECD (just a few weeks ago), the penetration of cloud computing in 2015 in the various European countries was around 20%, with wide country variations, from 7 to 15%. If you remove standardised services, which are even easier to approach, the figure is even lower, some countries being below 2%. When it comes to services installed or managed by the company itself (IaaS), the spending is on average 3%, which is very low, much lower than in (e.g.) the US. Therefore talking about data location restrictions concerns impact in the future, with the minimum time between initiating the legislative process until noticing impact on local market being around 3 years (i.e. 2020-2021), by which time the cloud market will have changed a lot.

Looking at the impact from an economic point of view, if we remove data location barriers in Europe today, the picture is as follows:

- For the larger providers: if they want to establish a new data centre in Europe, the economic advantage comes from being able to select the most economic place in Europe, which equates to a saving of from 5% to 10% (in management

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costs over 10 years). This is a substantial improvement, but we know the cost of networking goes down much more slowly than the cost of per hour computation (CPU). Therefore we see a **dampening effect (clustering)**: large companies would choose to go in cities which have the largest networking spots and the best provision of networking. Therefore the 5-10% economic advantage in savings is not always possible to assess.

- For the SME providers: those that have technological or other means to protect their advantage are alive because they have a geographical advantages (“geographical providers”): e.g. Swiss email providers that exist thanks to this. Vertical providers will continue to grow independently of any data location restrictions, while those using geography as a protectionist barrier will suffer.
- For users: when we look at economics, a very small percentage of users and a small percentage of euros spent on cloud services are impacted by data location restrictions nowadays. If we look at the legislation across European countries, there is a subset of these economic areas (i.e., legal, governmental care, banking, insurance) which are affected by this legislation. Of those industries, only 25-35% is spent on aspects related to handling of sensitive data or data that needs to be protected in a special way. But a bigger issue than that is the **difference in contract laws**. If I need to go against cloud provider in another market, given the amount of money spent, the majority of users will avoid legal activity. On the other hand, we must focus however on the bigger aspect which has a huge impact on the cloud market: which is **uncertainty and lack of knowledge**. Users perceive data location restrictions to be much bigger than they actually are. It’s **uncertainty** that is the big problem: the perceptions of users avoiding the adoption of cloud services based on fears that they could be held criminally responsible if something happens. The perceived risk is so high that it constitutes a real barrier to entry.

Data location restrictions are something that, if removed, may have an overall positive effect, especially for users, but slightly negative in terms of SMEs - because we have seen in other markets that the removal of barriers tends to produce a concentration effect, which favours larger providers compared to smaller ones. But what is believed to be very positive is the **dissemination of information about what the cloud actually is**. End-users tend to have very little and extremely biased information, some of it coming from the large cloud providers.

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The bottom line made by the third panellist was that whilst the removal of data location restrictions may indeed have a positive net impact, in practice this would vary, and the impact is not expected to be positive in all markets. Moreover, the impact would become visible only a few years from now. Therefore, **whilst removing data barriers is an important action, it needs to be complemented with other (short-term) actions.**

The panel discussion was followed by close interaction with the C-SIG members. From the exchange of views, the following points emerged:

- BP Delivery confirmed what was expressed by Carlo Daffara. Their input was based on a survey conducted in the Netherlands, which showed that amongst end-users of cloud, 25% never even used it due to (e.g.) high costs of cloud and lack of knowledge. When they did use it, it was for generic applications (emails, file transfer, etc). This confirms that there is a world to win on cloud implementation, especially in Europe.
- We should not artificially maintain in life those providers called “geographical providers”. Instead, we should create the right conditions to support the “vertical providers”, which certainly benefit from geographical restriction until they become big enough to fight on the market once those geographical restrictions are removed.
- It is really a matter of choosing the right time to introduce the right measures.
- From the **users’ perspective**, the fact that there are going to be less providers on the market when large companies receive the advantage of being able to establish only one data centre will lead to a negative effect for users, who will have less variety of choice on the market. Even if not all providers survive forever, they currently provide more choice (including the local providers) and this is a positive impact for the users.
- Since in all industries (e.g. automotive, IT in general) we see **concentration**, this is an effect expected to apply to Europe as well. What we can do is foster the conditions for another **natural effect**: very large companies tend to converge in vertical sections, leading to successful vertical businesses, but they tend to

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become less effective in real economic effectiveness. Many entrepreneurs do not have real experience or training on how to understand the markets they enter - instead they navigate by sight. By 2019-2020 we will see a structural change in how the market works, with many companies disappearing and few remaining to become larger and stronger including across geography.

- When looking at the economic impact of cloud computing for SMEs, we need to verify whether this differs depending on the cloud offers (i.e., IaaS, PaaS, SaaS). Referring to SaaS, the disadvantage expressed by the European CIO Association was the need to pay a licence on a “per user”, and not a “per usage” basis. Some use the service the entire day, others only for one day per month, while the amount paid is the same. The app contracts are not suited for this **differentiation of usage**.
- Too often we have a two-dimensional conversation: transatlantic, or big vs. small. However, data localisation is more problematic outside the EU and US, and both European as well as US companies are interested in the global market. **We need to look at the ecosystem as whole**. There is an opportunity created by larger companies, because larger providers may not go for niches that SMEs can address. Moreover, the app economy in general can leverage the cloud. Not sure if this broader look is also taken into account.
- The Finnish Investment Agency representative underlined that since (e.g.) the UK and Germany are high cost destinations for data centres, while the Nordic countries are low cost destinations, by **changing the user perceptions to trust storage outside their country we would enable millions of investment**. Getting rid of barriers would lead to more efficient market by building data centres in less expensive location.

What are the real reasons for choosing one country over another?

This major decision depends on three factors (not necessarily presented in order of importance or impact):

1. user demand;
2. jurisdiction; and

3. latency & redundancy.

If there is significant potential for users in certain areas with requirements to keep data in the EU or particularly in a certain country, providers will invest in data centres which respond to this requirement. Companies need to work in the users' national context. For instance, Microsoft understood that German customers were not moving to cloud because of concerns related to the location of data centres, so it decided to address the German market directly, by building a data centre locally. However, the example brought by BP delivery, a cloud broker which offers services on the Dutch markets with data hosted in Germany, showed that some customers (especially SMEs) prefer to have their data stored in another country than theirs, based on security and privacy perceptions, while the applicable law is the Dutch one.

A second factor which drives the location choice is the **latency concern**. For example, the latency between Nuremberg and Frankfurt can differ 10 times from the latency elsewhere in a range of 400 km. We need better bandwidth to tackle this. The European Commission can lead user preference, taking into account that very few applications require a certain latency (e.g., those in the financial sector). Another related issue concerns **redundancy**: larger companies are looking for data centres that are separated, to ensure redundancy. In the US there is the East centre and the West centre. In Europe, providers cannot move data without breaking the rules. However, building too many big data centres in one country is too expensive, while providing backup for those data centres is necessary.

The **jurisdiction concern** was also addressed, specifically the impact of choosing a jurisdiction under which the contract is signed. It was underlined that we need a clear European jurisdiction. Taking the example of the UK G-Cloud provider, it emerged that some buyers in Northern Ireland/Scotland face this issue: some providers are unwilling to change their contracts to English/Welsh law. It all comes down to the jurisdictional issue.

On this point, Hans Graux underlined that if contract law is such a big issue, and that it proves difficult for consumers to enforce their rights outside their countries, this might be solved by improving the dispute resolution mechanism. If what matters is to make available a more accessible dispute resolution mechanism, then it may be worth considering this, than the harmonisation of legislation, and this would benefit equally both small and big companies.

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Pearse O’Donohue concluded the session, underlining that **trust and confidence remain key issues**. The fact that some companies choose to build their data centres in one country over another indicates a market gap. One point to keep in mind though, is that the **huge majority of cloud providers are SMEs, which (for the European Commission) are the primary concern**. Driving down the costs for them is key. For SME providers with a good business case (e.g., a technological niche advantage), when they want to expand in another market they need to duplicate. And with this, the EU and the SMEs lose out.

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