Council of the European Union

Brussels, 15 September 2017
(OR. en)

12244/17
ADD 2

Interinstitutional File:
2017/0228 (COD)

TELECOM 213
COMPET 615
MI 637
DATAPROTECT 143
JAI 791
IA 141
CODEC 1407

COVER NOTE

From:	Secretary-General of the European Commission, signed by Mr Jordi AYET PUIGARNAU, Director
date of receipt:	13 September 2017
To:	Mr Jeppe TRANHOLM-MIKKELSEN, Secretary-General of the Council of the European Union
No. Cion doc.:	SWD(2017) 304 final PART 2/2
Subject:	COMMISSION STAFF WORKING DOCUMENT IMPACT ASSESSMENT ANNEXES TO THE IMPACT ASSESSMENT Accompanying the document Proposal for a Regulation of the European Parliament and of the Council on a framework for the free flow of non-personal data in the European Union

Delegations will find attached document SWD(2017) 304 final PART 2/2.

Encl.: SWD(2017) 304 final PART 2/2

EUROPEAN
COMMISSION

Brussels, 13.9.2017
SWD(2017) 304 final

PART 2/2

COMMISSION STAFF WORKING DOCUMENT

IMPACT ASSESSMENT

ANNEXES TO THE IMPACT ASSESSMENT

Accompanying the document

Proposal for a Regulation of the European Parliament and of the Council

on a framework for the free flow of non-personal data in the European Union

{COM(2017) 495 final}
{SWD(2017) 305 final}

ANNEX 1: PROCEDURAL INFORMATION

The initiative is led by DG CONNECT. The agenda planning reference is PLAN/2016/164.

The Impact Assessment was prepared by a project team of DG CONNECT and was closely coordinated with the Inter-Service Steering Group (ISG). Following its meetings in 2016, the ISG held two meetings, on 30 June 2017 and on 20 July 2017, to discuss the revised Impact Assessment. The following DGs and services participated: SG, CNECT, COMP, DIGIT, ENER, ENV, ESTAT, FISMA, GROW, HOME, JUST, JRC, MOVE, OP, REGIO, RTD and TRADE. Comments and written input from the other DGs and services were duly considered and taken into account in this Impact Assessment. Numerous bilateral meetings also took place with the relevant DGs and services to discuss specific aspects and improve the diversity and pertinence of evidence and references provided, as well as the overall quality of the text.

1. Recommendations of the Regulatory Scrutiny Board

1.1. Response to negative opinion of the RSB of 25 August 2017

The Regulatory Scrutiny Board (RSB) of the European Commission examined the draft Impact Assessment and issued a negative opinion on 25/08/17. This is the RSB's second opinion and is in principle final. In its opinion, the Board identified a number of shortcomings that needed to be addressed. These issues have been addressed in this revised version of the Impact Assessment, which is the final published version. The shortcomings and the adjustment requirements have been addressed in this new version as follows:

RSB comment	Modification of the IA report
Cloud services portability. **The report fails to make a case for a new right of cloud services portability. It does not show that switching costs are excessive. The proposed portability solution would not address the obstacles to switching that the report identifies, including standardised data formats and data transfer logistics. The report does not estimate compliance costs of such portability requirements for cloud service providers. Overall, the evidence seems to point toward less stringent options.** As regards the vendor lock-in problem, the economic analysis and methodology to assess impacts should be substantially revised to better reflect the business model of cloud services, the competitive and innovative nature	In response to these concerns raised by the RSB, the **IA now identifies Option 2a as the preferred option instead of Option 2.** This means the **elimination of a new right of cloud services portability** and the replacement of the prior legal obligation for service providers to facilitate switching **by a self-regulatory approach**, taking the form of codes of conduct. The objective of this change is to make sure that service providers will not be faced with excessive requirements and that the competitive and innovative nature of their market will be preserved. As the RSB clearly identified, and despite several dedicated support studies, it remains difficult to

of the market, the views of stakeholders on obstacles to switching providers and the prerogatives of private law contracting. The report relies on two studies which are not available yet, but references to these studies in the report suggest that this does not reflect a comprehensive cost-benefit analysis. For instance, what about the impact of portability obligations on the cost of cloud services? In view of stakeholders' feedback, the report should explain why the option of soft law (option 2a) is not considered more effective.	estimate accurately the compliance costs of a portability right for cloud service providers (CSPs). Self-regulation leaves the responsibility with the industry itself to make switching and porting of data easier. In this way, compliance costs will be minimised. On the other hand, an information/transparency objective for CSPs still figures in the preferred option, in order to ensure full transparency for professional users. This should encourage the market to move to easier switching and porting for cloud customers. The Commission should assess if the development of self-regulatory measures such as codes of conduct on transparency requirements will be sufficient in facilitating the switching of providers or porting data back to users' IT systems. For a description of the revised preferred option 2a, **the reader is referred to sections 5.4 and 8 of the IA.** Also, and as requested by the RSB, the report now contains a considerably revised and expanded passage on the excessive costs of data portability under the baseline scenario. This information is to be found **in the section on the economic assessment of the baseline option for portability (6.2.1.3) and the problem section of the IA (2.3.1.)**.
Data localisation restrictions. **The report does not establish the size of location restrictions on data. It acknowledges that there is limited evidence of such restrictions and does not explore the reasons for such restrictions, or analyse their merits. The report also does not analyse the strength of observed customer preferences for local storage.** The report draws extensively on conclusions from several structured dialogues with Member States. But it does not say whether the dialogues provided support for the methodology to identify those restrictions that are unjustified and assess the	Despite two studies, the macro-economic analysis of the impact of data localisation restrictions remains a difficult exercise. As the RSB rightly points out in its Opinion, the IA does not succeed in projecting an all-encompassing macro-economic analysis of the 45 identified data localisation restrictions. It does provide, in section 6.4.1.1., an analysis of different economic consequences of the preferred option. It is impossible to give hard figures on the impacts of identified localisation restrictions , mainly because data localisation restrictions have many different economic effects, some of which are difficult to measure (e.g. the spin-off effect on the use of innovative data technologies that are geographically

proportionality of remaining restrictions.	dispersed by nature (such as IoT, now mentioned in section 2.3.2. of the IA). Moreover, the business case to build a data centre in a particular country relies on several factors. In response to these comments by the RSB, the report now stresses more clearly **(in section 6.4.1.1)** that it is directed also at future developments, **acting for the purposes of trust and legal certainty.** This should create the essential investment climate the EU needs for becoming a true data economy. In earlier changes, the problem analysis has been fundamentally reviewed, and now gives a clearer and more systematic analysis of the different types of problems, their magnitude and the reasons why they cannot be adequately addressed under existing EU law. **See IA sections 2.3.1 and 2.3.2.**
The description of policy options. **The policy options leave open a number of issues and the role of the new policy group in addressing them. Open issues include:** **- How certification would work in practice;** **- How to define portability;** **- What geographical restrictions are unjustified or disproportionate;** **- The process to make the principles-based legislation operational.** The report should define the options more precisely. Both certification and the policy group touch on issues which are common to the ENISA proposal in the same policy package. The report should justify the need for specific measures not covered in the new ENISA proposal. For certification, it should explain whether the common standards and labelling scheme for cloud service providers should be developed by the industry or by Member States. It should also assess the potential costs	The RSB rightly comments that in the previous version of the IA, detailed information is missing regarding the practicalities of security certification, the definition of portability, the justification of data localisation restrictions and the process of bringing the principles-based proposal into force. The reason is that, as described in **section 5.4,** the substance of these issues is left to the discretion of an expert group, consisting of the single points of contact designated by the Member States. There is a better regulation consideration behind this choice, giving principles-based guidance on EU level but leaving practicalities to the Member States. This was also a response to calls for a cooperation framework by the Member States. In response to the RSB comments, the report now contains an extra section on broad definitions of justified vs. unjustified geographical restrictions in **section 2.3.1,** (problems) **section 5.4** (the preferred option) and **section 6.4.1.1.** (assessment of the

of the proposed solution (cf sections 6.4.1.4 and 6.4.3.4). The policy group seems to be a hybrid body. It combines committee competence, advisory and administrative cooperation functions, and responsibility for certification. The report should clarify the role of the single points of contact in Member States and their policy group.	preferred option). The RSB is correct in asserting that the relation between the cyber package, the NIS Directive and our proposal could have been formulated in a clearer way than before. Therefore, in response to these RSB comments, the new IA adopts a new approach to ensure that the FFD proposal will provide for extra synergies between the initiatives and no overlap whatsoever with the cyber package and the NIS Directive. In response to the RSB comment on the missing cost estimation of EU action under this intervention area, it must be contended that this will depend on the possible implementing acts under the NIS Directive.

1.2 Response to negative opinion of the RSB of 28 September 2016

The RSB had previously examined an earlier draft version of the Impact Assessment and issued a negative opinion on 28/09/16. The Board made several recommendations. These were addressed in the revised version of the IA submitted to the RSB for its second opinion, as follows:

RSB recommendations	Modification of the IA report
Context and timing. **The report should establish a clearer link and coherence between the FFDI and other policy initiatives concerning data. It should more clearly demonstrate the pertinence and urgency for additional regulatory action in this policy area.** The Commission's 2015 Communication on the Digital Market Strategy for Europe outlined several policy issues that are closely related to the FFDI. These include ownership of data, access to data, interoperability of data, and liability of the use of data. The report should better explain the links between	The report now explains in greater detail the links as well as the differences between the envisaged EU free flow of data cooperation framework and other data-related policy issues (such as data ownership, transfer and liability), as also explained in the Data Economy Communication of 10/01/2017. The issue of porting business data for the purpose of switching cloud service providers is now also addressed as part of this initiative. **See IA sections 1.1 and 1.2** Two **key arguments** are the following: - Effective and efficient cross-border

these various initiatives and show their complementarity. It should then explain the reasons for tackling the FFDI separately rather than covering it together with other related issues.	functioning of data storage and processing, in particular through the establishment of the free movement of data principle, should be ensured before taking the other EU data policy initiatives. This would be a timely response to the growing data-intensity of economy and would constitute the foundation upon which future cross-cutting (e.g. re-use of data across borders) and sectorial (e.g. banking and finance, manufacturing, connected and automated driving, smart grids) data policies can be built. - For the obstacles to the movement of data, the cause is forced storage or processing of certain types of data in electronic format within a geographical zone. The main issue is therefore the removal or the prevention of data localisation restrictions which are not objectively justified on grounds of national security. The other data issues, in particular those relating to ownership, transfer and liability are not yet sufficiently clear and need further assessment before any decisions can be taken on further regulatory action.
Problem definition. **The report should present more evidence to establish the magnitude of the problems. It should also elaborate on underlying drivers to relevant restrictions on data location, such as security or law enforcement concerns. It should describe the limitations or gaps of the existing legal framework and its enforcement. On this basis, the report should substantiate the need and scope for (legal) action.** The report should provide more evidence to demonstrate the relative magnitude of the problem and its underlying drivers. There is more scope to draw on the existing external studies as well as on stakeholder input and anecdotal evidence. For instance, the report should clarify the nature of the restrictions targeted by the FFDI and confront them with Member States' concerns, for example in relation to security issues. The report should further explain the	The report now explains in much greater detail the magnitude of the problem and its underlying drivers. Specifically: - The problem analysis has been fundamentally reviewed, and now gives a clearer and more systematic analysis of the different types of problems, their magnitude and the reasons why they cannot be adequately addressed under existing EU law. **See IA sections 2.3.1 and 2.3.2.** - The report systematically gives examples of different types of data localisation restrictions. **See IA section 2.3.2 Figure 3; Annex 5 ('Driver 1' and 'Driver 2')** - The report differentiates between potentially justified and potentially unjustified data localisation restrictions, based on the results of the structured dialogues with the Member States, studies and the Commissions own internal assessment. **See IA section 2.3.2 Figure 3;**

extent to which it accepts Member States' concerns with regards to data security as legitimate. Moreover, the existing legal framework (i.e., Articles 16, 26, 49, 56, 114 TFEU and at least 6 directives, notably the services, e-commerce and transparency directives) should be described and analysed in more detail. The analysis should chart existing limits in tackling the identified issues and whether these stem from enforcement problems or legislative gaps. This should strengthen the argument for new legislation in this area. How is it expected to simplify rather than make the situation more complex, in particular when proposing a reversal of the burden of proof and setting conditionality to Member States to justify restrictions? To what extent will it be "future proof" to allow further development of the digital single market?	**Annex 5 ('Driver 1')** - The report analyses in greater detail to what extent the potentially unjustified data localisation measures could be addressed using the existing regulations / directives. **See IA section 2.3.2 Figure 3 and section 6.3.1.1; Annex 5 ('Driver 4')** - The report devotes more attention to legal uncertainty as a key driver of data localisation. **See IA section 2.3.1 and section 2.3.2 Figure 3; Annex 5 ('Problem 2')** - The report analyses in detail the main concerns of the Member States that underpin data localisation: concerns about data availability for regulatory control/data sovereignty and concerns about the level of security of data storage and processing. The initiative will provide co-operation mechanisms between Member States and the Commission to respond to these concerns. **See IA section 2.3.1; Annex 5 ('Driver 5')** - In elaborating the potential solutions (options) the report pays considerably greater attention to the fact that the initiative should clarify the existing legal situation. The solutions would also ensure relevant technological developments are taken into account as regards possibilities to port or move data and as regards security of data. Specifically, the preferred legislative option is based on a simple and clear free movement of data principle as well as transparency requirements for any remaining justified restrictions and relies on an existing notification mechanism. The proposed cooperation mechanisms between Member States and the Commission will ensure that the free flow of data principle takes into account Member States' concerns about data availability for regulatory control and appropriate levels of security of data storage and processing. **See IA section 5.4 and section 8**
Stakeholder views and assessment of	- The report now refers to the stakeholder views much more systematically and to a

impacts. **Stakeholder views should feature more prominently throughout the report. The assessment of impacts should be better substantiated, drawing on available qualitative and quantitative evidence. The expected impact of the preferred option should be further detailed.** The potential winners and losers from this initiative need to be better identified and stakeholder views better reflected throughout the impact assessment. More quantitative and qualitative evidence from the external studies and stakeholders consultations would help policymakers to accurately weigh the relative impacts of the different options. For example, with regard to Option 2, the impacts on the environment, on employment and on fundamental rights need to be more firmly based on available evidence. With regard to administrative burden, the report needs to more clearly spell out both potential new burdens (such as costs to run the new EU information platform) as well as synergies with existing procedures (such as drawing on existing notification procedures).	greater extent. In particular, the results of the 2017 online public consultation and the structured dialogues with Member States and other stakeholders, which took place from February 2017 to May 2017, are two new important sources of stakeholder views. **See numerous references in IA sections 1, 2, 5.6, 6; Annexes 2 and 5** - The report also builds on further evidence stemming from external studies and other external sources, notably the completed study SMART 2015/0054, the new IDC and Arthur's Legal study SMART 2016/0032 "Switching between Cloud Service Providers" and the new Tecnalia study SMART 2016/0029 "Certification Schemes for Cloud Computing". **See references in IA sections 2 and 6; Annexes 3 and 5** - The report now assesses systematically and in greater detail the potential administrative burden and clarifies that an existing procedure should be used for notifications. **See IA sections 6.2.3, 6.3.3, 6.4.3 and 6.5.3; Annex 3** - The report now also expands on the costs and benefits of the initiative to different categories of stakeholders. **See IA section 6; Annex 3**

2. Evidence Base for the Impact Assessment

The Impact Assessment was prepared on the basis of diverse sources, including:

- stakeholder consultations (please see Annex 2);
- publicly tendered external studies (below);
- market reviews, statistics (*e.g.* Eurostat), and desk research;
- external expertise.

a) External Studies commissioned for the Impact Assessment

i. SMART 2016/0032, IDC and Arthur's Legal, "Switching between Cloud Service Providers", 2017 (Ongoing) [IDC and Arthur's Legal Study (SMART 2016/0032)]

ii. SMART 2015/0054, TimeLex, Spark and Tech4i, "Cross-border Data Flow in the Digital Single Market: Study on Data Location Restrictions" (Ongoing) [TimeLex Study (SMART 2015/0054)]

iii. SMART 2014/0031, Deloitte, “Measuring the economic impact of cloud computing in Europe”, 2016 [Deloitte Study (SMART 2014/0031)]

iv. SMART 2015/0016, London Economics Europe, Carsa and CharlesRussellSpeechlys, "Facilitating cross border data flow in the Digital Single Market", 2016 [LE Europe Study (SMART 2015/0016)]

v. SMART 2016/0029, Tecnalia, "Certification Schemes for Cloud Computing" (Ongoing)

vi. SMART 2015/0086, CRIDS (University of Namur), "Report on the public consultation on data and cloud"

b) Other external studies relied on in the Impact Assessment

i. SMART 2013/0063, IDC and Open Evidence, "European Data Market. Data ownership and Access to Data - Key Emerging Issues", 1 February 2017 [IDC Study (SMART 2013/0063)]

ii. SMART 2011/0045, IDC, "Quantitative Estimates of the Demand for Cloud Computing in Europe and the Likely Barriers to Uptake" (July 2012)

iii. SMART 2015/0018, TimeLex, Spark, "Clarification of Applicable Legal Framework for Full, Co- or Self-Regulatory Actions in the Cloud Computing Sector" (Ongoing)

iv. SMART 2013/43, IDC, "Uptake of Cloud in Europe. Follow-up of IDC Study on Quantitative estimates of the demand for Cloud computing in Europe and the likely barriers to take-up ", 2014, available at: http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=9742

c) Expert consultation

Prof. Joachim Beck was engaged as a consultant and was consulted on the structure and quality of the analysis of the Impact Assessment.

d) Other external sources / publications

Aaronson, Susan Ariel, "Why Trade Agreements are not Setting Information Free: The Lost History and Reinvigorated Debate over Cross-Border Data Flows, Human Rights and National Security", 2015.

Albright Stonebridge Group, "Data Localisation : A Challenge to Global Commerce and Free Flow of Information", September 2015, available at: http://www.albrightstonebridge.com/files/ASG%20Data%20Localization%20Report%20-%20September%202015.pdf

Cybercrime Convention Committee (T-CY), "T-CY assessment report: The mutual legal assistance provisions of the Budapest Convention on Cybercrime", T-CY(2013)17rev, December 2014, available at : https://rm.coe.int/16802e726c

Directorate-General for the Internal Market and Services (European Commission), "Handbook on Implementation of the Services Directive", 2008, available at: http://publications.europa.eu/en/publication-detail/-/publication/a4987fe6-d74b-4f4f-8539-b80297d29715

ECIPE, Policy Brief "Unleashing Internal Data Flows in the EU: An Economic Assessment of Data Localisation Measures in the EU Member States", December 2016.

ENISA, Report "Secure Use of Cloud Computing in the Finance Sector", December 2015

ENISA, Report "Cloud Computing Risk Assessment", November 2009, available at https://www.enisa.europa.eu/activities/risk-management/files/deliverables/cloud-computing-risk-assessment

European Commission, "A guide for legal practitioners – Judicial cooperation in civil matters in the European Union", available at: http://ec.europa.eu/justice/civil/files/civil_justice_guide_en.pdf

European Commission and European Judicial Network for Civil and Commercial Matters, "Practical Guide for the application of the Regulation on taking of evidence", available at: http://ec.europa.eu/justice/civil/files/guide_taking_of_evidences_en.pdf

European Judicial Network and Eurojust, Joint Task Force Paper "Assistance in International Cooperation in Criminal Matters for Practitioners European Judicial Network and Eurojust", 6 May 2014, available at : http://eurojust.europa.eu/doclibrary/eurojust-framework/ejrelationswithpartners/ejn-eurojust%20paper%20on%20judicial%20cooperation%20in%20criminal%20matters%20%28may%202014%29/ejn-ej-paper-on-judicial-cooperation-in-criminal-matters_2014-05_en.pdf

Eurostat, "Factors limiting enterprises from using cloud computing services, by size class, EU-28", 2014 (% enterprises using the cloud); http://ec.europa.eu/eurostat/statistics-explained/index.php/Cloud_computing_-_statistics_on_the_use_by_enterprises

Eurostat, "Statistics on small and medium-sized enterprises", September 2015, available at:http://ec.europa.eu/eurostat/statistics-explained/index.php/Statistics_on_small_and_medium-sized_enterprises

The Evidence Project, Deliverable D3.1 Overview of existing legal framework in the EU Member States, Collaborative Project EVIDENCE "European Informatics Data Exchange Framework for Courts and Evidence", FP7-SEC-2013.1.4-2. Christopher Kuner, "Data Protection Law and International Jurisdiction on the Internet" (Part 2), International Journal of Law and Information Technology (2010) 18 (3): 227-247

Jonah Force Hill, "The Growth of Data localization Post-Snowden: Analysis and Recommendations for U.S. Policymakers and Industry Leaders", Lawfare Research Paper Series, 2014, available at: https://lawfare.s3-us-west-2.amazonaws.com/staging/Lawfare-Research-Paper-Series-Vol2No3.pdf

Mandel, Michael, "Why Trade Agreements are not Setting Information Free: The Lost History and Reinvigorated Debate over Cross-Border Data Flows, Human Rights and National Security", 2013

Nordås, H., et al. (2014), "Services Trade Restrictiveness Index (STRI): Computer and Related Services", OECD Trade Policy Papers, No. 169, OECD Publishing, Paris. available at http://dx.doi.org/10.1787/5jxt4np1pjzt-en

Anna-Maria Osula, "Transborder Access and Territorial Sovereignty", Computer Law and Security Review 31 (2015) 719 – 735Oxford Research, "A springboard for green data centers in Southern Norway"

Oxford Research, "Finland's Giant Data Center Opportunity",available at: http://www.oxfordresearch.fi/media/241351/finland_s_giant_data_center_opportunity_final_version.pdf

Stefan Kolb, Jorg Lenhard and Guido Wirtz, "Application Migration Effort in the Cloud – The Case of Cloud Platforms" (2015)

Trusted Cloud Europe Survey, "Assessment of Survey Responses", 15.07.2014, available at: https://ec.europa.eu/digital-single-market/en/news/trusted-cloud-europe-survey-assessment-survey-responses

XL Catlin Group, "Environmental Risks: Cyber Security and Critical Industries" (Whitepaper), 2013.

ANNEX 2: STAKEHOLDER CONSULTATION

The **initial assessment** was based on the following activities:

- Review of literature pointing to the importance of cross-border data flows for economic development, and the detrimental effect of data localisation restrictions at European level.[1]

- Data localisation restrictions were identified as a barrier to the development of cloud computing in Europe by the steering board of the European Cloud Partnership[2] in the context of the Cloud Computing Communication[3]. In a small-scale survey that was launched following the publication of the European Cloud Partnership's report, a large majority of respondents (68%) agreed on the need to review data localisation restrictions and assess alternative approaches.[4]

- Preliminary activities aimed at the identification of data localisation restrictions on the basis of stakeholder involvement.[5]

The **first round of evidence gathering** (from the 2nd half of 2015 until the 2nd half of 2016) was based on the following activities:

- In 2015 and 2016 the Commission ran two studies aimed at identifying data localisation restrictions in Member States and quantifying the impact of those restrictions on the functioning of the internal market.

- A public consultation on the regulatory environment for platforms, online intermediaries, data and cloud computing and the collaborative economy was launched on 24 September 2015.

- One study on the economic impact of cloud computing in Europe.

- Other information gathering activities (e.g. meetings and events, targeted workshops with key stakeholders and dedicated workshops in the context of the studies).

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1 De Brauw Blackstone Westbroek, "EU country guide: data location & access restrictions", 2013; Kommerskollegium (Swedish National Board of Trade), "No transfer, no trade: the importance of cross-border data transfers for companies based in Sweden", 2014.

2 European Cloud Partnership Steering Board, "Establishing a Trusted Cloud Europe: A policy vision document by the Steering Board of the European Cloud Partnership", March 2014. Available at https://ec.europa.eu/digital-agenda/en/news/trusted-cloud-europe

3 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 27 September 2012, "Unleashing the Potential of Cloud Computing in Europe", COM(2012) 529 final.

4 European Commission, "Trusted Cloud Europe Survey: Assessment of Survey Responses", July 2014, available at https://ec.europa.eu/digital-agenda/en/news/trusted-cloud-europe-survey-assessment-survey-responses

5 Workshop "Facilitating cross border data flow in Europe – on data location restrictions", March 2015, meeting minutes available at http://ec.europa.eu/digital-agenda/en/news/workshop-facilitating-cross-border-data-flow-europe-data-location-restrictions-outcome-workshop

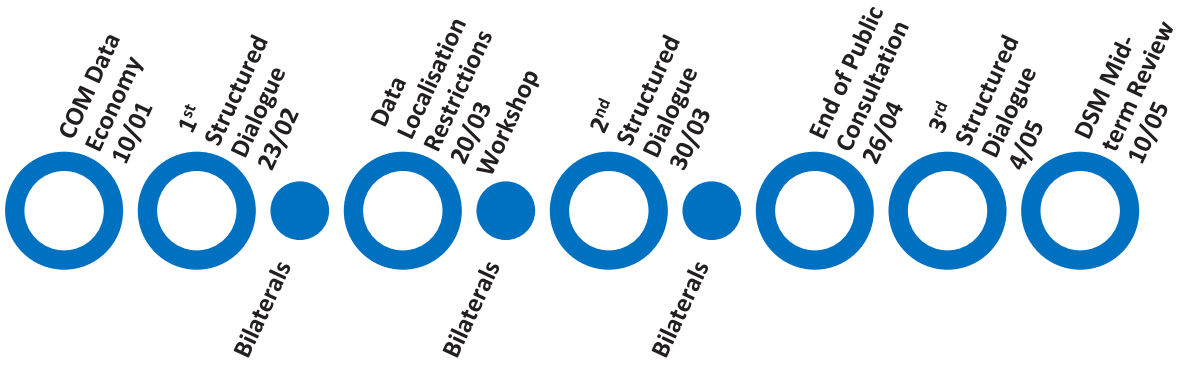
Following the negative opinion of the regulatory scrutiny board upon the first submission of the impact assessment, the **second round of evidence gathering** (from the end of 2016 until the 2nd half of 2017) was based on the following activities:

- A public consultation on Building a European Data Economy was launched on 10 January 2017.
- Three collective structured dialogue meetings with Member States to reach a common understanding of the challenges and opportunities at hand.
- Bilateral meetings with Member States to verify data localisation restrictions identified and address individual concerns.
- A dedicated study on the issue of switching of cloud providers / data porting.
- A dedicated study on cloud certification schemes and security.
- Engagement with stakeholders during the DSM Cloud Stakeholder meeting.
- Other information gathering activities (e.g. meetings and events, targeted workshops with key stakeholders and dedicated workshops in the context of the studies).

1. Overview

Structured dialogues with Member States on the Free Flow of Data

The Communication of 10 January 2017 on Building a European Data Economy announced structured dialogues on a Free Flow of Data, between the Commission and the Member States as well as other stakeholders, taking as a starting point the localisation restrictions identified so far. Three structured dialogues and bilateral meetings/calls with 16 Member States have taken place since the publication of the Communication.



Key conclusions of the structured dialogues:

The **first structured dialogue** workshop constituted an exploratory first meeting with Member States, the Commission facilitated an interactive and constructive discussion on the benefits and challenges, as well as the issues and needs of MS in view of the FFD. The key benefits and opportunities identified were economic growth; higher level of competition and innovation in the EU; better "cross-border" use of public sector services; and to promote and

advance legal clarity in the EU. Whereas, the key challenges and threats outlined were a lack of mutual trust and legal uncertainty on scope of FFD.

The **second structured dialogue** workshop was an opportunity to discuss the current applicable EU legal frameworks concerning free movement of data and to further elaborate on the data localisation measures identified so far in that context. In general, participants found it very difficult to navigate through all the existing legal instruments. Some participants mentioned that the identified and anonymised rules were lacking legal clarity and that their objective was not clearly stated, which makes the proportionality test difficult.

The **third structured dialogue** facilitated a discussion on the possible building blocks of a free flow of data approach, and to collectively identify possible policy scenarios for the free flow of data in the EU. There was a sense of emerging consensus on the possible building blocks for a common FFD approach: general FFD principle; data security; data availability/cross-border access to data by authorities; data portability. Member States preferred the option of hard law with regard to a FFD principle, guidance/soft law with regard to data security and hard law and/or guidance when it comes to data availability/cross-border access to data by authorities and data portability.

Organisation and approach:

The three structured dialogue meetings with Member States have taken place and primarily aimed at promoting a common understanding of the issues at hand undermining a Free Flow of Data within the EU. For this purpose the Commission resorted during all three meetings to a *participatory leadership approach*[6] allowing for interactive and inclusive process towards a common conception of the obstacles to a Free Flow of Data and its underlying issues, and necessary steps to be taken at EU level in order to address these.

Participants to the structured dialogues

The Member States were represented by attachés and representatives from the respective national ministries and/or authorities.

1st structured dialogue workshop:

22 EU Member States + Norway were represented by 1 to 3 representatives. Luxembourg, Croatia, Latvia, Italy, Greece and Cyprus did not attend the meeting.

2nd structured dialogue workshop:

[6] The Participatory Leadership is an approach to leadership that scales up from personal to systemic usage of dialogue, facilitation, collaboration and co-creation of new solutions to address complex challenges that we face in our organizations today. It's a structured set of practices for facilitating group conversations of all sizes, supported by principles that maximize collective intelligence, welcome and listen to diverse viewpoints, maximize participation and transform conflict into creative cooperation. Participatory Leadership is increasingly used in many organizations around the globe for: Supporting the organizational change and development by engaging and empowering the collective knowledge and innovative capacity in all staff; Developing knowledge and solutions within business and services by strengthening relations and co-creating with internal and external stakeholders (collaboration across levels and departments, working across silos); Building advanced leadership capacity in the organization by training and nurturing personal leadership, collective learning and self-organization for staff to step in and take charge of the challenges facing them.

25 EU Member States + Norway were represented. Greece, Cyprus and Romania did not attend the meeting.

3rd structured dialogue workshop:

22 Member States + Norway were represented. Greece, Cyprus, Italy, Slovakia, Hungary and Bulgaria did not attend the meeting.

Bilaterals with MS

In addition to the collective structured dialogue meetings the Commission held 16 bilateral meetings/calls to discuss and verify the identified individual restrictions as well as promote a common understanding of the issue at stake. Such engagement occurred with all willing MS for which localisation requirements were previously identified (UK, LU, SLV, DE, NL, AT, ES, FI, CRO, PL, BE, BG, PT, DK, FR), or not (IT). HU, SE and IE have provided written statements instead. Romania could not respond on substance yet.

There were 8 Member States that did not receive an email with identified restrictions and therefore we have not proactively requested bilateral meetings with these countries (SLK, MAL, LV, GR, EE, CZ, CY, LT).

Public Consultation on Building a European Data Economy

The stakeholders targeted by the consultation were businesses of all sizes and from all sectors, including specifically manufacturers and users of connected devices, operators and users of online platforms, data brokers, and businesses commercialising data-based products and services. Public authorities, non-governmental organisations, researchers and research organisations and consumers were also invited to contribute.

The online survey received a total of 380 responses, including 332 responses from businesses / organisations, 6 responses from self-employed individuals, and 42 responses from citizens. Contributions mainly came from private organisations, which could be expected, since most of the issues concerned B2B contexts.

In addition, some 15 standalone contributions (i.e. not complemented by replies to the questionnaire) were received. These are available online [link to be inserted]. The authors of these contributions represent national authorities, companies, national or European business associations, insurance associations, and lawyer representatives in EU and the US. Most of these papers tackle the different sections of the consultation, with a strong focus on the access to and transfer of data.

The European Political Strategy Centre (the EPSC) has also organised a public hearing, the transcript of which serves as a contribution to the public consultation.

The Synopsis Report of the public consultation and its Annexes are available here [link].

REFIT Platform

Submission of the Royal Norwegian Ministry of Trade, Industries and Fisheries to the REFIT Platform (April 2017)[7]:

[7] An opinion of the REFIT Platform is further expected in September 2017.

Norway points out that there is a need for a harmonized EU-law to allow for storing accounting documents in all member states, including all EEA-countries. As long as enforcement bodies have sufficient access to documentation, it should make no difference if a business keeps paper documents stored in a cabinet in their headquarter office in one European Member State, or chooses to store the same documents electronically in a cloud service with servers located in another European country.

Stakeholder Consultation Workshop for the SMART Study on Data Portability and Switching Cloud Provider

The ongoing study on 'Switching between Cloud Providers' (SMART 2016/0032) is being undertaken by IDC and Arthur's Legal. The objective of the study is to gather evidence concerning the practices of cloud service providers in relation to data and application portability within cloud ecosystems. In this context, the analysis defines portability as follows: 'Data portability is the ability to easily transfer data from one cloud service to another cloud service without being required to re-enter the data; similarly, application portability is the ability to easily transfer an application or application components from one cloud service to a comparable cloud service and run the application in the target cloud service'.

Considering the series of technical, legal and economic issues identified in the study as well as their impact on portability for different cloud stakeholders, the report elaborates on 3 different policy options to facilitate portability. First, it expands on the introduction of a mandatory right for portability under EU law identifying its main components. Second, it discusses existing soft law instruments for portability reflecting on their effectiveness to address the portability issues occurring in the cloud context. Third, it explains what abstinence from any action at EU level entails. Finally, an examination of the possible economic impacts of the policy measures that could be taken at EU level to increase cloud portability shall take place, by describing the possible effects of these on demand for public cloud services.

The workshop "Data and application portability in the cloud: current challenges & policy scenarios" on 18 May 2017 had two (2) separate yet related goals: a) to present of the existing barriers limiting - or even preventing - data and/or application portability within cloud ecosystems identified in the context of the aforementioned study creating a high risk for customer lock-in and b) to identify a set of potential measures to address the barriers discussed, including the potential introduction of a new right to data portability that would not be limited only to a specific type of data.

The Workshop targeted representatives of public and private sector users (including SMEs), ICT service providers, and governmental authorities as well as Member State representatives. Over 40 participants joined for the Workshop.

Furthermore, the participants were involved in highly interactive sessions allowing them to exchange views on the challenges identified by the study and to discuss the draft set of preliminary measures captured by the workshop materials to stimulate the workshop discussion.

Stakeholder Consultation for the SMART study on Cross-border data flow in the digital single market: study on data location restrictions

The ‘Cross-border data flow in the digital single market: study on data location restrictions’ (SMART 2015/0054) was undertaken by time.lex, Spark Legal Network and Tech4i2. The objectives of the study were to identify and analyse legal and non-legal barriers that hinder the free flow of data within the EU, and quantify the impact of these barriers for private and public sector users, and suppliers of cloud computing services. Consequently, the final report shall contain: the identification of compliance obligations across the EU; examples of barriers which complement the analytical framework, results of a survey and in-depth interviews with stakeholders; an analytical framework that allows for the definition of concepts of barriers to the free flow of data, defining a common understanding of data requirements in the EU; the results of an economic analysis of the costs and benefits of data location restrictions and recommendations for functional requirements and future policy concepts, to facilitate cross border data flow within the EU.

The data collection for the study was done via a network of local legal and policy experts in 20 Member States, who were invited to report on at least three observed barriers that applied to at least three different types of data. Furthermore, the study team has conducted a survey and a series of interviews with selected stakeholders in order to identify non-regulatory compliance barriers.

The objective of the workshop which took place on the 31 March 2017 was to present the provisional results of the study commissioned by the European Commission on cross border data flows, and facilitate a discussion on these results, providing an opportunity for stakeholders to contribute to the legal and policy discussion in the field. In particular stakeholder feedback was sought on the formulation of recommendations on how to scope the free flow of data, and how to implement those. This enabled the study team to better appreciate the needs of all stakeholders when finalising the study and providing recommendations for future policy action to the European Commission. The workshop was also part of a series of structured dialogues between the European Commission and the Member States and other stakeholders, as announced in the Communication on "Building a European Data Economy".

The Workshop targeted representatives of public and private sector users (including SMEs), ICT service providers, and governmental authorities. Over 90 participants registered for the Workshop.

Stakeholder Consultation for the SMART study on Facilitating cross border data flow in the Digital Single Market

The study on 'Facilitating cross border data flow in the Digital Single Market' (SMART 2015/0016) was undertaken by LE Europe, Carsa and Charles Russell Speechlys. The study investigated the prevalence of restrictions of the free flow of data within the EU, based on primary and secondary (covering CZ, FR, DE, IT, LT, LU ES and UK).

The study consulted stakeholders and gathered evidence through an online, predominantly multiple choice survey of businesses, distributed by industry associations and network, which elicited 53 responses from businesses; a survey of local legal experts in the eight member states from the Charles Russell Speechlys network; consultations with stakeholders including industry associations, service providers, legal professionals, businesses and government bodies; contributions from key stakeholders at the DG Connect consultation workshop on the Free Flow of Data (18 May 2016)

The study concluded that absolute prohibitions outside areas of core national interest (security and defence) are rare. Furthermore, compliance obligations were found to be typically aimed at ensuring regulatory oversight and access. In addition, some businesses

seemed to have strict 'data residency' requirements that are not based on formal legal restrictions. Furthermore, the study stressed that location is seen by many market participants as a proxy for security, despite the fact that technical security is not enhanced by local data storage. However, functional requirements for data storage and processing within national boundaries arise from legitimate concerns about illegal access; accessibility of services and support (including language barriers); and latency and bandwidth. According to the study these cannot be dismissed and may justify location preferences. Another important finding was the widespread misinterpretation of the existing legal framework. Many market participants assume data storage and processing within national boundaries is mandatory or advised where it in fact is not. A lack of reliable 'digital trade' statistics means that the economic impact of restrictions on the free flow of data is difficult to assess.

Stakeholder Consultation for the SMART study on the Data Economy

The study on the 'European Data Market' (SMART 2013/0063) undertaken by IDC and Open Evidence presents a set of indicators measuring the European population of data workers, the value of the data market, the number of data user enterprises, the number of data companies and their revenues, and the overall value of the impact of the data economy on EU GDP. All indicators are presented for the years 2013 through 2016 and forecasted to 2020, exploring three alternative potential scenarios of evolution for the European Data Market: Baseline, High Growth and Challenge scenarios.

The study consulted a number of stakeholder categories identify the basis of their role in the data value chain. Both the supply side and the demand side of the data market were investigated through a field research survey of data companies and data users. The actual sample size was composed of 1,437 completed interviews conducted in selected Member States (the U.K., Sweden, Czech Republic, France, Germany, Spain, Poland and Italy). In addition a number of webinars were organised with the purpose of sharing information or community building.

Digital Single Market Cloud Stakeholder Meeting

During the meeting on the 29 June 2016 group discussions and an exchange took place on how to build best on the past, such as the previous work on a data protection code of conduct for cloud providers, cloud service level agreement standardisation guidelines and standardisation as well as certification. The interactive group discussions addressed current and future priorities in the context of a wider and broader stakeholder engagement.

This meeting was attended by a broad and wide mix of stakeholders with an interest in Cloud computing, including equally cloud providers and users, either public or private, and respective associations as well as organisations.

The four key topics discussed were:

- The twin topics of **data portability/switching of cloud providers**, i.e. ensuring that cloud customers can easily get their data back or move it to another provider, thus encouraging competition and higher quality services.
- Addressing any remaining and emerging concerns around **Cloud Security and Certification,** ensuring that the certification landscape becomes clearer and more consistent for cloud customers and providers alike.

- Creating an **SME-friendly cloud ecosystem**, ensuring that all past and future policy measures are accessible and beneficial to SMEs, both from the provider perspective and from the user perspective.
- Recognising and tackling **sector specific cloud uptake challenges,** including particularly for the public sector and financial services markets, but also for other markets that may have specific concerns due to their specific security, confidentiality or quality requirements.

Consultation workshop on the Free Flow of Data

The workshop on 18 May 2016 included presentations for active discussion with experts in relevant areas for the free movement of data within the EU, such as legal barriers to the free flow of data and on how the patchwork of national rules on company data fragments the EU Single Market. The Digital Single Market Strategy committed the European Commission to propose a Free Flow of Data Initiative. This workshop was scheduled for participants to actively discuss their own perspective of issues related to the free movement of data within the EU.

The Workshop targeted representatives of public and private sector users (including SMEs), ICT service providers, and governmental authorities as well as Member State representatives. Over 80 participants joined for the Workshop.

The discussion on the first issue demonstrated clear support for the abolition of unjustified data location restrictions in the light of technological developments and costs. In relation to access and ownership of data, a clear divide could be observed and scepticism in relation to potential regulation was expressed even though most participants confirmed that access to data must somehow be granted. In relation to liability it was generally acknowledged that the current regime needs to be adapted to emerging technologies and future challenges, whereas with regards to interoperability and portability caution with regards to premature standardisation was expressed. In conclusion, cost and a lack of trust were identified as two critical considerations framing the FFD discussion.

Public Consultation on Regulatory Environment for Data and Cloud Computing

A public consultation on the regulatory environment for platforms, online intermediaries, data and cloud computing and the collaborative economy was launched on 24 September 2015, and ended on 6 January 2016. The consultation included questions on data location restrictions, 'data ownership', (re)usability and access to data, and liability. In accordance with the better regulation guidelines, an Inter Service Steering Group (ISSG) approved the consultation questions.

The public consultation on the regulatory environment for platforms, on liability of intermediaries, on data and cloud and on the collaborative economy received 1034 replies, 1005 of which were submitted through the EU-Survey, and 29 through the functional mail box set up exclusively for the consultation. Not all respondents replied to all four sections. Over 650 responses were received on the data and cloud section plus over 50 written submissions. The Commission prepared a synthesis report of the results. Given its scope and the level of response, the public consultation was considered to be sufficient to inform the Commission's analysis of the options mentioned above.

Cloud computing – Eurostat statistics on the use by enterprises

The survey by Eurostat provides for recent statistics on enterprises' use of cloud computing services in the European Union. The main findings of the survey are figures on the use of cloud computing; cloud computing as a service model for meeting enterprises' ICT needs; enterprises using cloud computing; enterprises' dependence on cloud computing; types of cloud computing: public and private cloud; factors limiting enterprises' use of cloud computing (2014 survey); and factors preventing enterprises from using cloud computing (2014 survey).

The data are based on the results of the 2014 and 2016 surveys on ICT usage and e-commerce in enterprises. The statistics were obtained from enterprise surveys conducted by national statistical authorities. The survey covered enterprises with at least 10 persons employed. In 2016, 148 000 of the 1.6 million enterprises in the EU-28 were surveyed. Of the 1.6 million enterprises, approximately 83 % were small enterprises (10-49 persons employed), 14 % medium (50-249) and 3 % large (250 or more).

Stakeholder Consultation for the SMART study on Measuring the economic impact of cloud computing in Europe

The study on 'Measuring the economic impact of cloud computing in Europe' (SMART 2014/0031) was undertaken by Deloitte. It provides an overview of the development of cloud computing in Europe in absence of policy measures, and of the most important barriers for its further development. It provides an assessment of the likely impacts (costs and benefits) of policy measures supporting cloud computing to be implemented consistently with the free flow of data initiative recently launched by the Commission, i.e. introduction of security certifications and removal of data location restrictions. The study developed a model for the cost-benefit analysis based on a large literature review, on available datasets and statistics, and on primary data collected via stakeholders' consultation.

The study collected inputs (both quantitative and qualitative) from stakeholders' consultation via interviews172, online surveys (a cloud computing professional users' survey173 and a cloud computing providers' survey174) and ad-hoc sessions at two C-SIG plenary meetings (one held on October 29 2015 and the second on June 27 2016). Equally, the demand side and supply side were consulted.

Stakeholder Consultation for the SMART study on Uptake of Cloud in Europe

The study on 'Uptake of Cloud in Europe' (SMART 2013/0043) was undertaken by IDC and constituted a follow-up of the IDC Study on 'Quantitative estimates of the demand for Cloud Computing in Europe and the likely barriers to take-up'. This study was carried out from January 2014 to November 2014. The objective of the 'Uptake of Cloud in Europe' study was to undertake a comprehensive economic analysis and provide quantitative estimates of the impact of cloud computing on the EU economy. The previous study was carried out for the Commission by IDC in 2011-2012.

The study consulted per interview CIOs, IT directors, or IT managers of medium/large organizations and the IT managers or owners for small organizations. In total 361 interviews were conducted for the U.K., France, and Germany and 253 for Italy and Spain. The sample frame was obtained from a list source representative of the entire local market, regardless of computerization.

The study looked at the potential economic impact of the EU28 resulting from the adoption of Cloud based computing solutions by the Public and Private Sector. It provided updated data of Cloud adoption in the EU28 by industry, company size, and country. It estimated the

level of substitution by Cloud spend of IT spend. In undertaking the assessment of the economic impact IDC prepared three scenarios, termed baseline, optimistic and pessimistic, reflecting a range of outcomes that reflect "most likely", "best case" and "worst case" respectively. The study also looked at how competitive the EU owned IT industry is in meeting the demands and opportunities that Cloud Computing presents.

Cloud Select Industry Group Plenary Meetings

The Cloud Select Industry Group (C-SIG) was established by the Directorate-General for Communications Networks, Content and Technology, Software and Services, Cloud Unit, for the purpose of providing independent validation and advice on proposals.

It was a stakeholder group open to all organisations, groups and individuals having a professional interest in cloud computing matters and are active in the European cloud market. The main representatives were from major European and multinational companies and organizations with significant involvement in cloud computing, in particular the supply side of the cloud value chain.

During the plenary on the 15 February 2017 the questions were raised on whether the European Commission is looking at intra- or extra-European data flows and in particular the differing nature of the identified restrictions. The European Commission clarified that they are now looking at intra-European data flows and outlined the categories of restrictions at issue.

During the meeting on 27 June 2016 cloud computing policy and related issues in the context of the Digital Single Market, in particular the Free Flow of Data were discussed with the participants. The discussion was nourished by the presentation of the results of the study "Measuring the economic impact of cloud computing in Europe" by Deloitte and led discussion on the potential economic impact of a removal of data location restrictions. It is clear that contractual and jurisdictional issues are major reasons for a lack of uptake in cross-border cloud computing services with consideration for issues of latency and redundancy. The impacts on important stakeholders lead to lively debate on the business benefits for SMEs vs. large companies.

2. Structured Dialogues with the Member States: summary report

Reports from the three structured dialogues

First structured dialogue workshop & set-up

On 23 February2017, the Commission held the first structured dialogue with Member States on the Free Flow of Data (FFD). It constituted a first exploratory meeting with Member States where the Commission facilitated interactive and constructive break-out discussions in various rounds on the benefits and challenges, as well as the risk and threats to MS in view of the FFD. This opportunity helped to effectively gather information on the shared as well as dissent views, concerns and questions raised by Member States in relation to the FFD. In addition the MS had the chance to collectively address their views on the most important issues, next steps to be taken and how to best address MS needs and concerns in order to enable a FFD in Europe.

At this occasion DG CNECT presented the ongoing public consultation and promoted participation by Member States and industry and user groups to the consultation. The presentation of two Commission studies on the study "Power of Data for European Growth" by IDC and the study "on the European Data Market set the scene and illustrated the benefits of, and/or the costs of not having, a single European Data and Cloud Market in Europe.

Furthermore, three Member States representing different positions, ranging from a strong support (PL), a pragmatic approach (DK) further to a substantial initial scepticism (FR), were given the opportunity to present their perspectives on the Free Flow of Data in the EU

The presence of a Cabinet member of Vice-President Ansip ought to underline the high political importance of the FFD initiative.

Key conclusions

The intervention by some MS on the expectations for this meeting on their behalf which pointed out the significant differences in understanding of the Free Flow of Data and its scope, in particular in relation to the questions: intra-EU vs. global flows; personal vs. non-personal data and the role of the GDPR; and terminology used (e.g. access to data vs. availability of data for regulatory purposes).

The key benefits and opportunities, and the key challenges and threats identified by the MS representatives during their discussions among each other were:

Key benefits & Opportunities	Key challenges & Threats
Economic growth o cost cutting - for companies, in particular SMEs - environmental costs o better/greater market access for SMEs - easier to scale up cross-border	Lack of mutual trust o Lack of common "high" security standards - certification/labels - standardisation Jurisdictional and enforcement issues - availability of data by authorities

Higher level of competition and innovation in the EU o better services and security for consumers/users o a globally more competitive EU Data market	Legal uncertainty on scope of FFD o terminological issues - personal/non-personal data o contextual issues - applicability of/relation to current EU and national legislation - justified data localisation restrictions – e.g. national security
Better "cross-border" use of public sector services	
Promote and advance legal clarity in the EU o overcome wrong perceptions on data localisation restrictions o foster mutual trust in relation to security	

The common understanding on possible ways to address the issues, as well as MS' needs in order to allow free flow: share best practices, issue guidance and application of/resort to existing applicable legislation (e.g. Service Directive, NIS Directive, GDPR etc.); clarify and raise awareness in order to address wrong perceptions; provide a wider and deeper economic impact assessment; promote trust through common security certification and standards; and regulate where necessary.

The Commission acknowledged and committed to: clarify on terminology and establish a common language to work with; provide clarity in relation to applicable laws and current legal gaps; foster further discussion to better understand the security and trust challenge, and the issue of cross-data availability of data by public authorities.

In conclusion the Commission presented a roadmap and timeline to the Member States.

The overall reaction by Member States on the first structured dialogue was positive. The interactive method that was used ensured that the Commission listened to the Member States and that a common approach towards the FFD could be created in joint effort.

Second structured dialogue workshop & set-up

On 30 March 2017 the Commission held the second structured dialogue with member States on the Free Flow of Data. This meeting served as an opportunity to discuss the current existing and applicable EU legal frameworks concerning free movement of data and to further elaborate on the data localisation measures identified so far in that context.

Based on bilateral discussions that the Commission had had with a few MS, there seemed to be a positive trend to remove identified legal provisions which result in forced data localisation. However, the EC was still in the discovery phase as regards to local practices. Several participants agreed that at this stage we only saw the tip of the iceberg.

The Commission started by summarising the first structured dialogue and the workshop of 20 March 2017 and received positive feedback from the participants on the constructive and cooperative approach of the EC. The relevant legal instruments (including TFEU – provisions on the freedom of establishment and the free movement of services, GDPR, Services Directive, e-Commerce Directive, Transparency Directive, NIS Directive) were presented by DG CNECT E2, JUST, CNECT F2 and GROW. Colleagues from SG, TRADE and CNECT D3 also attended the dialogue.

Participants were asked to identify prima facie and in small groups divided per category of data (health data/financial data/public archives/accounting data):

- whether they think that the identified and anonymised restrictions fall under the scope of any existing EU law;

- whether these restrictions are subject to any possible exemption (legitimate objective); and

- to make a proportionality test.

Key conclusions

In general, participants found it very difficult to navigate through all the legal instruments. Austria showed some sensitivity around the flow of health data and in response to Germany's question, it was clarified that there is no single FFD principle in the current legal instruments.

Some participants mentioned that the identified and anonymised rules were lacking legal clarity and that their objective was not clearly stated, which makes the proportionality test difficult. More specifically:

Public archives: conclusion that the restrictions are coming from the pre-digital era. The objectives behind the restrictions seem to relate to the availability and continuity of records, possibly to security and confidentiality of data as well.

Health data: Healthcare services are explicitly excluded from a number of instruments. Some of the restrictions might fall under the GDPR, the transparency Directive and the TFEU. For some obligations (e.g. obligation that the doctors must comply with specific recommendations established by the order of physicians), it is not clear cut whether this will infringe the free movement of personal data principle established by the GDPR as the obligation imposed on doctors may be imposed for other reasons than the protection of personal data.

Taxation and accounting data: Taxation is explicitly excluded from a number of instruments. It is also difficult to define whether it relates to personal data and whether the GDPR applies. The ECD might apply if the restriction affects the provision of information society services. It could be argued that restrictions on taxation and accounting data rely on public policy objectives and relate to the prosecution of criminal offenses (i.e. tax fraud). Some restrictions, like storing business letters in a particular Member State or at the company registered office, were nevertheless seen as disproportionate. In this case, the availability of documents should be a sufficient measure.

Financial Data: Financial data are explicitly excluded from a number of instruments. It could fall under the TFEU. The ECD might apply if the restriction affects the provision of information society services.

Functional requirements identified by participants as a possible alternative to data localisation requirements were:

For archives and for accounting documents: guarantee of the availability of data to auditors at any time (instead of storing the information in a single physical place).

For health data : certification to guarantee the integrity and authenticity of data; guarantee of the availability of data; mandatory contractual clauses (instead of having a mandatory local accreditation scheme in place for ICT providers processing health data).

For financial data : availability of data (instead of a mandatory local back-up once a month).

CNECT E2 held a short presentation on portability. The question on how to make FFD practical to companies when they are transferring data from one provider to another was specifically raised. This can drive further competition in Europe. Data portability was however not listed by the participants during the round tables as a major concern or a possible way forward to facilitate FFD, possibly in view if the nature of particular restrictions discussed. The increase of trust in cloud services was however mentioned.

Third structured dialogue workshop & set-up

On 4 May 2017, the Commission held the third structured dialogue with member States on the Free Flow of Data. The third structured dialogue was a constructive meeting with the opportunity to discuss the possible building blocks of a free flow of data approach, and to identify possible policy scenarios for the free flow of data in the EU.

The EC summarised the previous structured dialogues, the study workshop of 20 March 2017 and bilateral discussions with the MS so far. Next to this, a quick preliminary overview of the results of the public consultation on the free flow of data and data portability was presented.

The French Conseil National du Numerique gave a presentation on their recent opinion on FFD and the data economy. It focused on the need for a "data infrastructure", the portability right beyond GDPR to avoid vendor lock-in and enhance competition as well as incentives pooling of data. The German BMWi (Federal Ministry of Economic affairs and Energy) representative gave a presentation on their recent White Paper on Digital Platforms: Digital regulatory policy for growth, innovation, competition and participation. The paper reflects the state of stakeholders discussions in Germany. Regarding free flow of data, legal uncertainty and fear of new restrictions seem to be the main issues. The representative from Tecnalia (the contractor of the cloud certification study) gave a presentation highlighting the proliferation of security standards and certification schemes and outlining their further work on the topic.

The MS discussed the possible building blocks for a common free flow of data approach and their suitability to address the issues identified. They also engaged in break-out discussions to identify different possible policy scenarios (hard law, soft law, infringement procedures, business as usual, etc.) suitable for the FFD approach and its building blocks.

Key conclusions

There was a sense of emerging consensus on the possible building blocks for a common FFD approach: general FFD principle; data security; data availability/cross-border access to data by authorities; data portability.

The MS break-out sessions where they had to identify different possible policy scenarios (hard law, soft law, infringement procedures, business as usual, etc.) suitable for the FFD approach and its building blocks, resulted in the following preferences:

- Hard law with regard to a FFD principle,

- Guidance/soft law with regard to data security,

- Hard law and/or guidance when it comes to data availability/cross-border access to data by authorities and data portability.

ANNEX 3: WHO IS AFFECTED BY THE INITIATIVE AND HOW

In line with the 'Better Regulation' and 'Think Small First' principles, this annex assesses the possible impacts that the free flow of data legislative initiative is expected to have on the most important stakeholder categories. The estimations are made on the basis of the preferred policy option (Option 2 in the accompanying Impact Assessment).

Possible effects will be considered of all intervention areas envisaged in the legislative initiative, respectively: the free flow of data, data availability for regulatory control purposes, switching and porting data between providers and IT systems and security of data processing. To enhance readability, subcategorization of the text will be limited to costs and benefits per stakeholder type. Every time a specific intervention area is mentioned, it will be printed in bold.

Business users of data-based services

Costs

Business users of data and data-based services in general will not be presented with additional costs as the result of this legislative initiative (under the preferred option).

The only costs that could be connected to the legislative initiative for them would be costs for porting data when switching providers, but these costs would be lower than when no EU policy action would be undertaken and they would be agreed to in contractual agreements between business users and cloud service providers on a case-by-case basis.

Benefits

The initiative would lead to the reduction of existing costs for business users. These cost reductions can be divided into the following categories:

1. Cost reductions for businesses making use of cloud computing, or intending to do this in the future.

By enhancing open market competition for cloud services within the single market, the initiative would make cloud services more accessible to business users. At the same time, the nature of available cloud services will improve in terms of efficiency and innovation.

A support study by Deloitte estimates that the removal of data localisation restrictions would lead to an additional net benefit of 7.2 billion Euros for professional Cloud users (or 1.36%) compared to the baseline scenario.[8] These benefits are produced mainly by a reduction in prices of cloud services.[9]

[8] SMART 2014/0031, Deloitte, "Measuring the economic impact of cloud computing in Europe", 2016 [Deloitte Study (SMART 2014/0031)].

[9] The evidence cited here only considers the effects of removing data localisation restrictions. The study foresees even higher benefits if 'the promotion of existing relevant certifications and standards' by the Commission would be taken into account. However, the preferred option expects even more of the Commission, with regard to the

The study also considers sector-specific benefits, leading to the conclusion that the manufacturing sector would achieve the largest benefit, with a generation 2.23% of additional revenue, followed by the distribution, retail & hotel sector (2.12%), finance (1.77%) and government, education and health (also around 1.77%).

2. Cost reductions for businesses operating across borders, or intending to do this in the future.

The initiative would take away the (perceived) need for businesses to deploy a multiplication of data storage/processing facilities in multiple Member States of activity. Therefore, businesses that already operate across borders would be able to cut costs. Companies who would like to initiate a cross-border activity would be able to do so easier and cheaper, making use of only a single cloud service contract. For businesses who would want to keep their data in-house, the initiative would bring even greater benefits, as these would not be required to buy and operate multiple servers in different Member States. This would be inefficient not only because of a multiplication of purchasing costs but also of overhead costs resulting from energy use, server insurance, server space, the installation of VPNs, leased lines, et cetera. But these costs and, potentially, additional efforts for maintaining domestic routing when transferring data, are not the only costs that can be avoided for cross-border businesses supporting their data infrastructure in-house. The legislative action proposed will also take away costs in terms of administrative burden, legal assessment and compliance with the location restrictions set by some Member States, and the possible multiplicity of these costs over different borders.

Moreover, the initiative will make it easier for businesses to enter new markets. The public consultation clearly indicated that this would be one of the highest impacts of removing unjustified data localisation restrictions.

3. Cheaper to launch new products or services

Similarly, the public consultation identified the increased ability to launch new products and services in the EU single market as another high impact effect of taking legislative action. Predominantly the increased legal certainty, decreased compliance costs and rapid scalability of more widely available cloud services, are reasons for this contention.

Also the establishment of a principle of **data availability for regulatory control purposes** would have a short-term positive impact on the operational efficiency of business end-users of data-based services, through the reduced level of uncertainty for those business users who would like to move to cheaper providers in another Member State but are currently unsure whether their regulator or supervising entity would concur with such a switch.

On the intervention area of **security of data processing,** the preferred option for the free flow of data legislative initiative entails the development of an EU-wide certification and labelling scheme for cloud services. Such a system would benefit all cloud users, creating 0.64% of additional net present value (corresponding to around 3.5 billion Euros) from the additional user uptake generated by these standards and the reassurance they provide.

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intervention areas of data availability, data security and switching and porting data between providers and IT systems. Therefore, the benefits could be higher than predicted.

Start-ups, scale-ups and SMEs

The costs and benefits identified above for general business users are generally also applicable to smaller businesses like start-ups, scale-ups and SMEs. However, for these categories of businesses there are some additional considerations to make. In line with the 'Think Small First' principle, the Commission has scrutinised any possible impacts on them in a separate effort.

Costs

The initiative under the preferred option would not create costs for start-ups, scale-ups and SMEs. The initiative poses no new rules for these businesses to comply with, neither in terms of the systems they use, nor in terms of administrative or compliance requirements. Therefore there will be no increase of costs foreseen.

Benefits

The main benefits of the initiative for smaller companies will be enhanced competition on the IT services market and lower costs and barriers for market entry. But also raised security levels and higher cloud uptake would benefit this category of companies. As the Scale-up Europe Manifesto put it in words: "The real interest of startups – and of the European economy in general – is in reliable, safe and affordable data storage".[10]

Removing unjustified data localisation restrictions is a first considerable benefit, because when 'micro-multinationals' are active across national borders, especially early in their development, and conduct their business mainly online, data localisation measures would hinder the development of such fast-growing companies and their innovative potential. This is fully in line with the outcomes of the public consultation, identifying high impacts on launching new products and entering new markets.

Of specific importance to smaller companies is the possibility to run a company's data infrastructure from one Member State instead of having to duplicate storage and processing facilities. Companies with smaller budgets would be disproportionately (and quite possibly prohibitively) affected by the duplication of costs in multiple Member States. When attempting to differentiate the effects of the legislative proposal among subcategories of smaller companies, the statement 'the smaller the budget, the higher the benefit' can be indicative.

A more competitive single market for cloud services would have an impact on the competitiveness of European start-ups, scale-ups and SMEs. As explained in section 6.4.1.1. of the impact assessment, price reduction resulting from the removal of current market distortions by taking away data localisation restrictions could possibly yield around 276 million Euros per year in terms of savings for European SMEs.

Another specific benefit would be the lower costs of initiating a business in the EU, under the current level of 300 Euros and 3 days. This will be the result of the provision of cheaper and more competitive cloud services at a one-time cost for applicability in the whole EU.

[10] The Lisbon Council, Nesta and Open Evidence (2016), "The scale-up Europe manifesto"

SMEs and start-ups are expected to benefit most from the policy actions under the intervention area of **Switching and porting data between providers and IT systems**, because of the increased market dynamics introduced by easier switching.[11] Over all, as explained in the Impact Assessment, the demand for public cloud is forecast to grow by 20.5% CAGR. Particularly, smaller businesses would enjoy increased transparency regarding the data formats used by cloud service providers. This would be beneficial first and foremost for SMEs and start-ups operating on the cloud levels of PaaS and SaaS, which are more complicated in terms of IT architecture than IaaS. On top of this, clarity on the estimated time and cost of data transfer between IT systems would encourage small businesses to quicker switch to more favourable service providers without having to worry about costs related to disruption of the business process.

Data Storage and/or Processing Service Providers

Under the preferred option of the legislative proposal, data storage and processing (cloud) service providers would be impacted in terms of costs, more specifically in the intervention areas 'switching and porting data between providers and IT systems', 'data availability for regulatory authorities' and 'data security' . However, the estimated benefits will outweigh the increased costs. Evidence suggests that data storage and processing service providers constitute the stakeholder category that benefits most, in relative terms, of this legislative initiative.

Costs

The proposed framework for **switching and porting data between providers and IT systems** will probably lead to direct compliance costs for data storage and processing service providers. The preferred option would rely to a large degree on market participants to comply with the principle that providers of data-based products and services should facilitate data porting for switching providers or porting data back to users' own IT systems. Also, data storage and processing service providers would have to give insights in the processes, technical requirements, timeframes and charges that apply in the situation of switching providers. Similar costs are predicted to arise under the intervention areas **data availability for regulatory control purposes** and **security of data processing.**

Therefore, direct compliance costs could arise from:

- Legal analysis of the current situation;
- The development of new model clauses for contracts between data storage and processing service providers and customers, regarding data availability for regulatory control purposes and regarding porting data to facilitate switching;
- The development codes of conduct regarding security of data processing;
- Standard setting in the area of security;
- Coordination with other data storage and processing service providers, e.g. through trade associations;
- Correspondence with the EU Free Flow of Data Cooperation Mechanism.

Additional costs could be:

[11] SMART 2016/0032, IDC and Arthur's Legal (2017),"Switching between Cloud Service Providers", 2017 [IDC and Arthur's Legal Study (SMART 2016/0032)].

- (Part of the) costs of migrating customer data to a new location;
- Loss of market share to other/new data storage and processing service providers as a result of increased data mobility.

The direct compliance costs are expected to be moderate, as data storage and processing service providers are already required to incur the compliance processes/costs enlisted above, under the new portability requirements in the framework of Article 20 of the General Data Protection Regulation (GDPR).[12] The obligations flowing from the principle of free switching of non-personal data under this legislative proposal could therefore be acted upon under the same process, leading to economies of scale. Another mitigating effect is that the cooperation provisioned in the area of data security would rely on voluntary schemes.

The additional costs, related to a new and more dynamic market situation, will largely by offset by the benefits of this same more competitive and open market. Importantly, it is unfeasible that data migration costs, which are incurred when a customer switches providers, will be borne by one single actor. The preferred outcome could be a division of costs between, on the one hand, the service provider and, on the other hand, the user or the 'new' service provider.

Benefits

Whereas costs for data storage and processing service providers will be higher than for business users, the benefits of the initiative will be higher for this group as well. Deloitte estimates an additional profit of 19.5 billion Euros for cloud providers. This would mean an impressive 21.53% change compared with the baseline scenario, where the Commission would not address the problem of unjustified data localisation restrictions.[13] This makes cloud service providers the stakeholder category that would benefit the most, in relative terms, of taking away data localisation restrictions. These expected benefits are expected to originate from a decrease in operating costs, combined with rising demand for cloud services.[14]

Also, the removal of unjustified data localisation restrictions would mean a decrease in administrative burden for cloud service providers. Currently, they are forced to undergo additional costs for complying with diverging requirements across jurisdictions, including in some cases heavy administrative requirements (e.g. for accreditation of providers offering hosting services for health-related data). Also, they are sometimes confronted with the up-front need to establish data processing centres dedicated to customers based in particular Member States. This obliges them to duplicate infrastructure, limiting their ability to make use of economies of scale by choosing business- and potentially environmentally-optimal locations for data centres. These costs, which will to a large extent be taken away by the legislative initiative, are more easily supported by large data storage and processing service providers, either established US companies developing into global players, or large EU based companies. Therefore, the legislative proposal will grant smaller, emerging players

[12] Regarding the portability of personal data.
[13] Deloitte Study (SMART 2014/0031).
[14] The evidence cited here only considers the effects of removing data localisation restrictions. The study foresees even higher benefits if 'the promotion of existing relevant certifications and standards' by the Commission would be taken into account. However, the preferred option expects even more of the Commission, with regard to the intervention areas of data availability, data security and switching and porting data between providers and IT systems. Therefore, the benefits could be higher than predicted.

substantially improved access to European markets, and to domestic and/or sector-specific data service provision.

Theoretical example of costs for data storage and processing service providers avoided by this legislative proposal:

A small cloud service provider located in country A has in place an infrastructure spread across countries A, B and C in the EU. It has chosen the location for its data centres mainly based on the PUE index[15] and price of land and construction. It has successfully offered storage and processing services to businesses in the three countries, but it wants to expand and offer services cross-border. There is some demand especially from the health sector in Country D and the provider explores the opportunity of competing on the market in Country D.

building on Figure 4 and anonymised interviews from (LE Europe, 2016, p. 10)

Decision tree for entering the market (*see Figure 4*)	**Costs related to each step of the decision tree**
Is it illegal to store data outside Country D? Are there regulatory requirements which would be breached if data was transferred to another country?	Costs incurred for: detailed assessment of the regulatory framework in Country D compared to A, B and C.
Do customers have binding contracts to store their data in Country D? Does the provider need to match a competitor's commitments on data residency?	Costs incurred for: market (contractual) analysis
Are there public concerns around data travelling outside of Country D which could lead to loss of market share?	Costs incurred for: opinion mining
If the answer is NO to any question of the decision tree and the decision is: Enter the market by offering cross-border services	Virtually no additional costs: exploits economies of scale and uses existing infrastructure in Countries A, B and C
If the answer is YES to any question of the decision tree and the decision is: Enter the market in Country D →	Costs of establishment Building and maintenance costs for new data centre in Country D Costs for technical solutions ensuring specific data is kept on servers in Country D and reported as such
If the answer is YES to any question of the decision tree and the decision is: Do not enter the market in Country D →	Mitigation of costs not affordable for the company

The cloud services sector would also benefit by the Commission's action in the area of **data availability for regulatory control**. It is expected that a significant portion of the market would be opened up to them by the increased cross-border demand which will be the result of increased legal certainty. The same mechanism underpinned by higher levels of legal certainty is applicable to the intervention areas **switching and porting data between providers and IT systems** and **security of data processing.** Both intervention areas would enhance the trust of business users and consumers in cloud services and therefore increase uptake.

Consumers

Costs

[15] Power Usage Effectiveness (PUE) ratio is a measure of the energy efficiency of data centres, calculated as the total energy (watts) supplied divided by the energy used to power the equipment in the data centre – i.e. ratio pointing to the energy used for cooling, lighting, etc., broadly depending on climate conditions.

The initiative as provisioned under the preferred option will entail no costs for consumers. All costs will be borne by the public authorities of Member States and businesses.

The risk that data storage and processing service providers would pass on the costs that will be incurred as a result of this legislative proposal is negligible for two reasons. Firstly, because the benefits outweigh the costs, specifically for cloud service providers. Secondly, because research shows that that the price charged to users is currently still independent of the cost of provision of these services. Obviously, cloud service providers will need a return on investment in the longer term. But in the short-term other considerations, such as maximising market share, take precedence.[16]

Benefits

Consumers will be positively impacted by the initiative, through lower prices and more choice on the market of data storage and processing services.

The largest benefits of the intervention area of **switching and porting data between providers and IT systems** are expected for business. However, a principle of porting data for switching providers would also be important for consumers, who are increasingly using different types of cloud services. Whereas the data volume averagely stored by individual consumers tends to be modest, this is steadily growing over time as the accumulation of new data to be stored goes at a higher pace than deletion. Therefore, the time needed to transfer customer data over internet connections may become so long that it would render migration problematic if there would be no legal principle that facilitates switching providers.

Member States' public authorities

Costs

The preferred option of this legislative initiative would lead to moderate administrative burden for Member States' public authorities, caused by the allocation of Member States' human resources necessary for structured cooperation between Member States and the Commission by means of a 'single points of contact' coordination group. The average cost per Member State is estimated to be around 34.000 Euros.[17] These costs include both the provision of 0.5 FTE in the 'single points of contact' network created under the cooperation framework, and an average number of three notifications to be provided to the European Commission under the notification/review procedures. These procedures will be put in place to verify the compatibility of Member States' planned and existing measures with EU law.

[16] SMART 2015/0054, TimeLex, Spark and Tech4i, "Cross-border Data Flow in the Digital Single Market: Study on Data Location Restrictions" [TimeLex Study (SMART 2015/0054)].

[17] The FTE cost estimation is based on the "Institutional Cost Estimation tool", used for the accompanying Impact Assessment and a support study for the Impact assessment of the European Electronic Communications Code (SMART 2015/0005). The notification cost estimation is based on the data presented in the Impact Assessment accompanying the Proposal for a Directive on the enforcement of the Directive 2006/123/EC of the European Parliament and of Council of 12 December 2006 on services in the internal market, laying down a notification procedure for authorisation schemes and requirements related to services: the average time spent to comply with the notification procedure analysed in the IA is 12 working hours per notification. Taking the EU average of hourly earnings of civil servants with university education of €32.10, this results in an average administrative cost of €385.20 per notification.

For a more detailed explanation of the predicted impact of this initiative on the Member States' public authorities, the reader is referred to section 6.4.3. of the accompanying Impact Assessment.

Benefits

Member States' public authorities would benefit as well from the legislative initiative. In first instance, benefits would flow from the established safeguards regarding **data availability for regulatory control purposes**. This would entail improved supervision mechanisms, not only in sectors which are data-intensive today, but also in a broad array of sectors that are currently digitising.

Secondly, existing data location restrictions already cover a large spectrum of public sector data (related, for example, to public archives or public registers), hindering the implementation of cross-border or EU-wide digital public services. The technical implementation of such services generally requires distributed data storage and processing. The free flow of data legislative initiative would make this possible by removing ambiguous administrative requirements or straight-forward prohibition for using distributed technical solutions.

Thirdly, governments will also benefit from a more competitive cloud market, for example when procuring their own IT systems or shared cross-border digital public services. Removing unjustified data localisation restrictions would facilitate the selection of best-value-for-money offers and non-discriminatory selection of bidders in public procurement processes. For the smaller Member States, the ease with which cross-border data services can be contracted is even more business-critical than in the larger Member States,[18] given that the domestic market is smaller and allows to a lesser extent for economies of scale.

Finally, Member States' public authorities will benefit from the establishment of a future-proof network of single points of contact on data-related matters, which would minimise costs in the future, when other emerging data issues will possibly require ad-hoc cooperation on Member State level.

[18]SMART 2015/0016, London Economics Europe, Carsa and CharlesRussellSpeechlys, "Facilitating cross border data flow in the Digital Single Market", 2016 [LE Europe Study (SMART 2015/0016)] at p. 9.

ANNEX 4: ANALYTICAL MODELS USED IN PREPARING THE IMPACT ASSESSMENT

1. Analytical model for calculating effects economic effects on the data market

The study "European Data Market" carried out by IDC and Open Evidence to support this Impact Assessment estimated the macro-economic impacts following the general adoption of data-driven innovation and data technologies in the EU19. This study concludes that a free flow of data legislative proposal taking away data localisation would be the most important factor in driving the European data economy towards the high growth scenario of 4% GDP by 2020.[20] The methodological approach[21] includes quantitative and qualitative indicators; a sensitivity assessment through scenario analysis is also performed.

The macroeconomic model forecasts were based on the estimates of key macroeconomic indicators (EU GDP, EU total ICT spending, and unemployment) and the assumptions for the three scenarios, as well as IDC's current forecasts to 2020.

The macroeconomic effects calculated by the model used for the analysis distinguishes between:

- The **direct impacts**: these are impacts generated by the data industry itself;
- The **indirect impacts**: indirect impacts are all the impacts which take place in other industries related to the considered industry, in our case the data industry. There are two different types of indirect impacts: the backward indirect impacts and the forward indirect impacts
- The **induced impacts**: these impacts include the economic activity created by additional payment of wages to staff in the data industry and its direct supply chain

The impacts are modelled for the Member States under three different scenarios, more or less ambitious in terms of macroeconomic forecasts and policy initiatives. The impact of Brexit is taken into account.

2. The policy scenario modelling for switching

The study "Switching Cloud Providers[22]" carried out by IDC and Arthur's legal to support this Impact Assessment modelled a number of potential economic impact on the cloud market of the alternative policy options to ensure data and application portability. The study considers three policy impact scenarios:

1. A "**No EU Policy Action**" impact scenario, which leaves relevant actions for portability to the Member States, if they are willing to do so.

[19] See SMART 2013/0063, IDC and Open Evidence, European Data Market, 2017 [IDC Study (SMART 2013/0063)].
[20] More information on this analysis will be presented in Annex 8 to this impact assessment.
[21] More information on the methodological approach and a complete list of indicators can be found in section 1.4 of the final report for IDC Study (SMART 2013/0063).
[22] IDC and Arthur's Legal Study (SMART 2016/0032).

2. A "**Soft Regulation**" scenario, which assumes that the European Commission promotes cloud portability through non-regulatory measures. These are advisory rather than mandatory and include: supporting and driving awareness of technology standards and tools that enable easier portability; supporting and driving awareness of best practices and codes of conduct developed by stakeholders including vendor and industry groups; encouraging the development and diffusion of standard legal contract terms that have the effect of enabling easy and reasonably priced portability between cloud services by customers.
3. A "**Mandatory Regulation**" scenario, which assumes the introduction of a mandatory data and application portability right, effectively extending the new data portability right created by the GDPR for personal data to non-personal data and to business users as well as private users.

The methodology includes[23]:

- Extraction of data from IDC's public cloud market forecasts 2016-2021 for the EU (excluding the UK) segmented by:

- Extraction and elaboration of data from IDC's annual surveys on European actual and potential cloud users' opinions[24], segmented by industry and company size, with a specific focus on:
  - Level of fear of customer lock-in;
  - Level of concern around non-conformance to SLAs and data governance;
  - Relevance of standardization and interoperability.

- Development of specific assumptions by scenario about the alternative policy options impacts on demand drivers, competitiveness and innovation influencing cloud spending, building on the quali-quantitative results of this study.

- Development of an ad-hoc model forecasting public cloud spending under the 3 policy scenarios to the year 2025, since new regulation will most likely be implemented and start having impacts no earlier than 2019 and the relative impacts by 2020 are likely to be very small.

- Comparative analysis of the results of the 3 policy impact scenarios.

3. Measuring administrative burden

All possible policy options have been subjected to an assessment of possible impacts in different categories. One of these categories is the administrative burdens for Member States' public authorities, caused by the policy option.

To calculate these burdens, the research for this Impact Assessment has utilised the 'Institutional Cost Estimation Tool'[25], developed by the Commission services that created the Impact Assessment for the European Electronic Communications Code.

[23] More information on the methodology can be found in sections 5.1 and 7 of IDC and Arthur's Legal Study (SMART 2016/0032).
[24] The most recent is IDC's annual IDC 'CloudView' survey, based on over 1,000 interviews in Europe, November 2016.

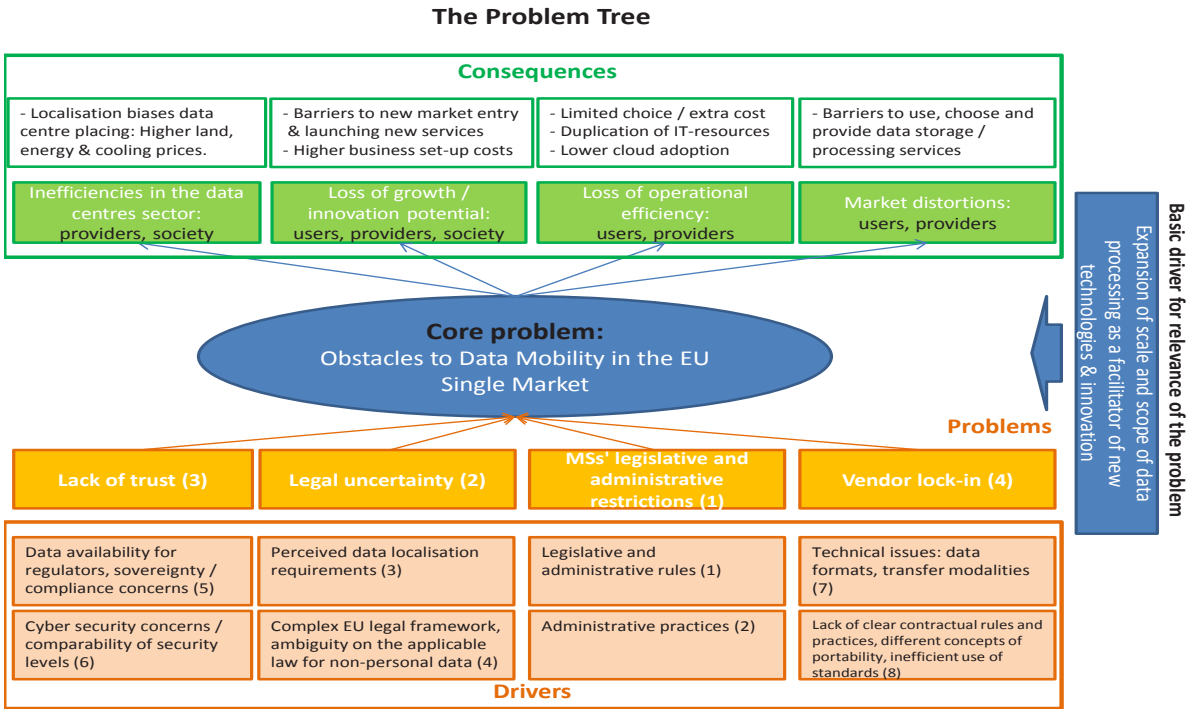
This tool allows the calculation of the Full Time Equivalent (FTE) costs of 1 employee of different grade and placed in different types of organisations.

For calculating the administrative burden on Member States' public authorities in this Impact Assessment, the choice was made to work with the cost of an average desk officer in a national ministry. With the help of the tool, an average cost of 1 FTE for EU-28 was developed: EUR 33.384.

On the basis of this cost, total sums of burden could be calculated, combined with qualitative reasoning behind the number of FTE needed under the different policy options.

[25] The "Institutional Cost Estimation tool", used to calculate Full Time Equivalent cost parameters, was developed in the context of the support study for the Impact assessment of the European Electronic Communications Code (SMART 2015/0005).

ANNEX 5: PROBLEMS, THEIR DRIVERS AND CONSEQUENCES



Problems

Having regard to the outcomes of the public consultation, the structured dialogues with the Member States and supporting studies carried out, the Commission has identified four interrelated problems that cause those obstacles to data mobility and, therefore, need to be addressed: lack of trust; legal uncertainty; legislative and administrative restrictions imposed by Member States; and vendor lock-in.

The four problems are driven by different types of factors (drivers): legal, administrative and contractual rules as well as the lack of legal certainty and the complexity of applicable rules; perception and approaches of market players, public sector organisations and public authorities; technical issues.

The movement of data within the EU is affected by different types of obstacles, which can be linked to the behaviours of Member States, public authorities, supervisory or regulatory authorities as well as of businesses.

In particular, **obstacles to the movement of data across borders in the EU** are caused by:

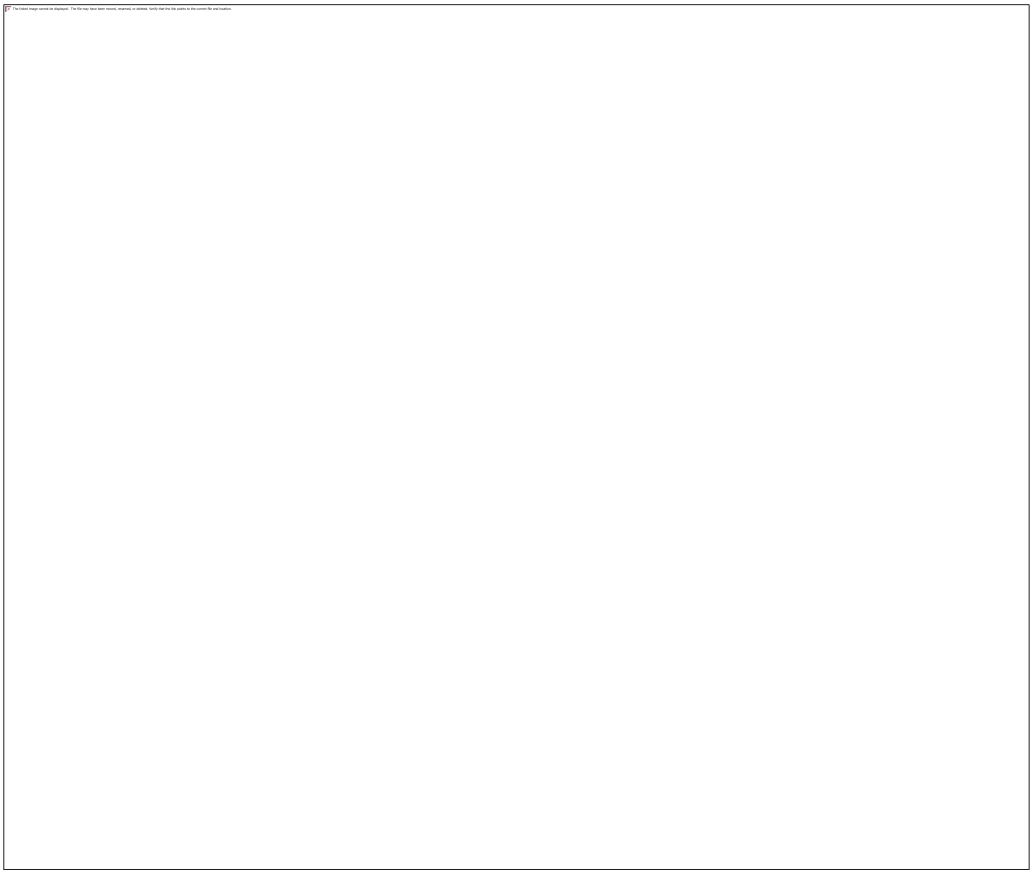
- legislative and administrative restrictions imposed by Member States (both rules and practices) (problem 1);

- legal uncertainty stemming from the perceived existence of data localisation requirements by businesses as well as public sector organisations and authorities and from complex EU legal framing (problem 2); and

- lack of trust displayed by public authorities (concerned about data availability for regulatory control / data sovereignty) and businesses or public sector organisations - users of data storage / processing services (concerned about the level of security of data storage and processing outside their own Member State) (problem 3).

The decision-making process of enterprises suggests furthermore[26] that different factors are interrelated before opting for a specific storage/processing solution: a sentiment of public concern or a strong security concern coupled with the wrong perception that it is safer to store data locally is likely to be reflected in contractual arrangements that limit data storage and processing activities across borders and turn 'data sovereignty' into an attribute on which companies compete for customers[27]:

Figure 1 - Steps in the decision to transfer data to another country



Obstacles to the movement of data across data (cloud) service providers / in-house IT systems are caused by:

- the vendor lock-in phenomenon (problem 4) driven in practice by the lack of clear contractual rules and practices concerning switching providers / porting data to a new provider or back to own IT systems; inefficient use of standards; as well as technical issues (e.g. data formats); and

- uncertainty about the existence or scope of legal rules for the portability of different types of data.

[26] LE Europe Study (SMART 2015/0016).
[27] LE Europe Study (SMART 2015/0016).

The figure below summarises the core problem, the four specific problems causing the core problem, the drivers of the specific problems (the specific problems and drivers are described in more detailed in the sub-sections below) and the consequences of those problems in a no change scenario or baseline (described in section 0 below).

Problem 1: Member States' legislative and administrative restrictions

Data mobility is undermined by restrictions to the localisation of data and to data services as well as measures having equivalent effect, both impacting business behaviour in the Single Market. There are still restrictions to fundamental freedoms guaranteed by the Treaty on the Functioning of the European Union that go beyond what is necessary and justified to protect important public interests, such as public security. The free movement of data services and the freedom of establishment are hindered in specific cases, notably through data localisation requirements under national law still in force in some Member States and/or obsolete administrative practices. This impairs the establishment and functioning of the Digital Single Market and raises further barriers to business and technical innovations emerging in the data economy.

In the public consultation of 2016, two thirds of respondents[28] – with an even distribution across all stakeholder groups, including SMEs – found that restrictions on the location of data have affected their business strategy.

In the public consultation of 2017, the majority of respondents[29] confirmed to know about the existence of data localisation restrictions. 80% of them stated that their organisations must comply with these restrictions. There is a broad consensus among stakeholders about the impacts of data localisation requirements, with only 2.6% of respondents indicating that they do not see any impact. To the question whether data localisation restrictions should be removed, more than half of respondents answer yes. When limiting the analysis to SMEs, roughly 60% say yes.

Member States' data localisation requirements stem from legislative and administrative rules (driver 1) as well as administrative practices (driver 2).

Driver 1: Legislative and administrative rules

Most Member States' data localisation restrictions take the form of legislative or administrative rules (i) **forcing data localisation** (mandatory requirements of storage in a specific geographical area or in a specific infrastructure which must itself be located in a specific area) or (ii) **having an equivalent effect** by imposing specific storage or processing requirements such as prior authorisation, accreditation or notification procedures before processing data or using a specific service provider (e.g. to ensure data security) or by requiring guarantee of timely and effective access to the relevant information for authorities (e.g. for control purposes). The equivalent effect is due to the administrative burden that the measures impose on businesses and public sector organisations to benefit from or provide cross-border services and/or common risk aversion by businesses and public sector organisations caused by the legal complexity and the lack of legal certainty.

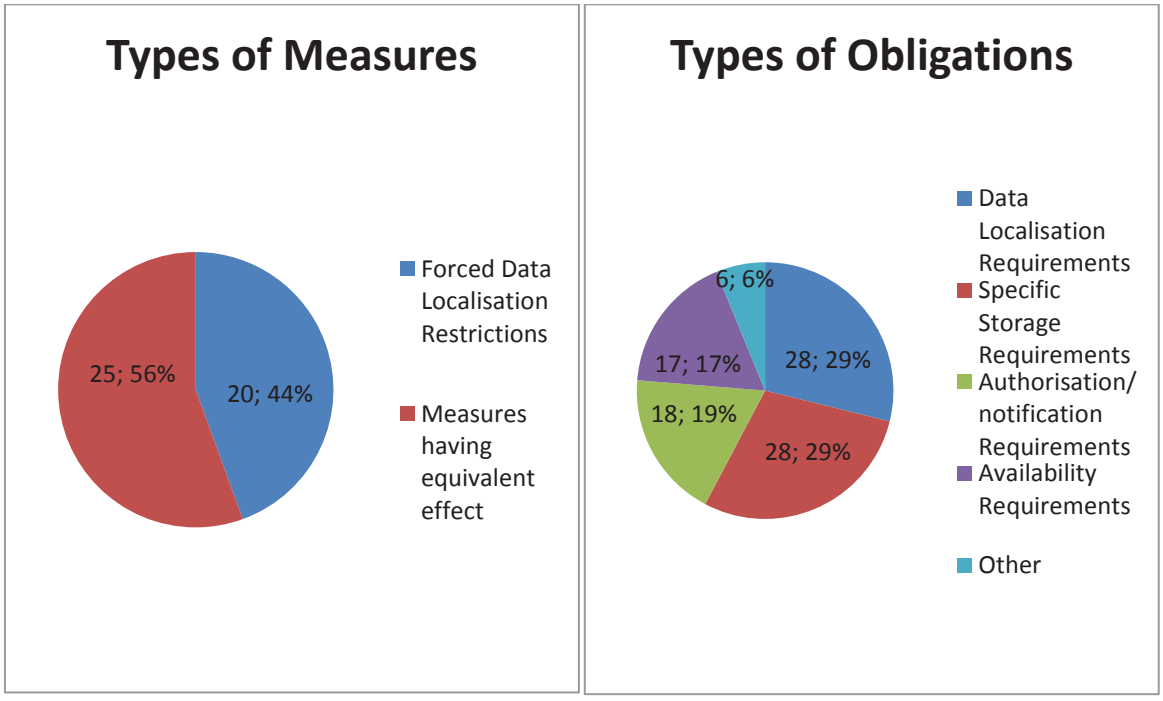
[28] A total of 328 respondents who answered to this particular question in the public consultation.
[29] A total of 380 respondents answered the public consultation.

Two studies identified in total 60 restrictions (by means of a network of local legal and policy experts in 25 Member States).[30] Both studies were non-exhaustive in scope; hence the number of restrictions and requirements thereof are to be understood as an extract of the actual reality reflecting only the tip of the iceberg.

The analysis of the public consultation as well as the structured dialogues with the Member States and other stakeholders delivered further evidence on both the existence of additional measures and their magnitude. Following the verification with the Member States in the context of the structured dialogue, a sample of 45 data localisation measures identified in 16 Member States has been retained as examples of measures either forcing data localisation or having an equivalent effect.[31] However, this still remains the **tip of the iceberg**. Besides confirming a number of measures already identified, the respondents to the public consultation of 2017 indicated examples of measures in two further Member States and 20 additional measures which they consider as hindering the free movement of data in the EU.

The types of measures (forced *v.* equivalent effect) and the 98 specific obligations/requirements entailed in these 45 data localisation measures are illustrated as follows:

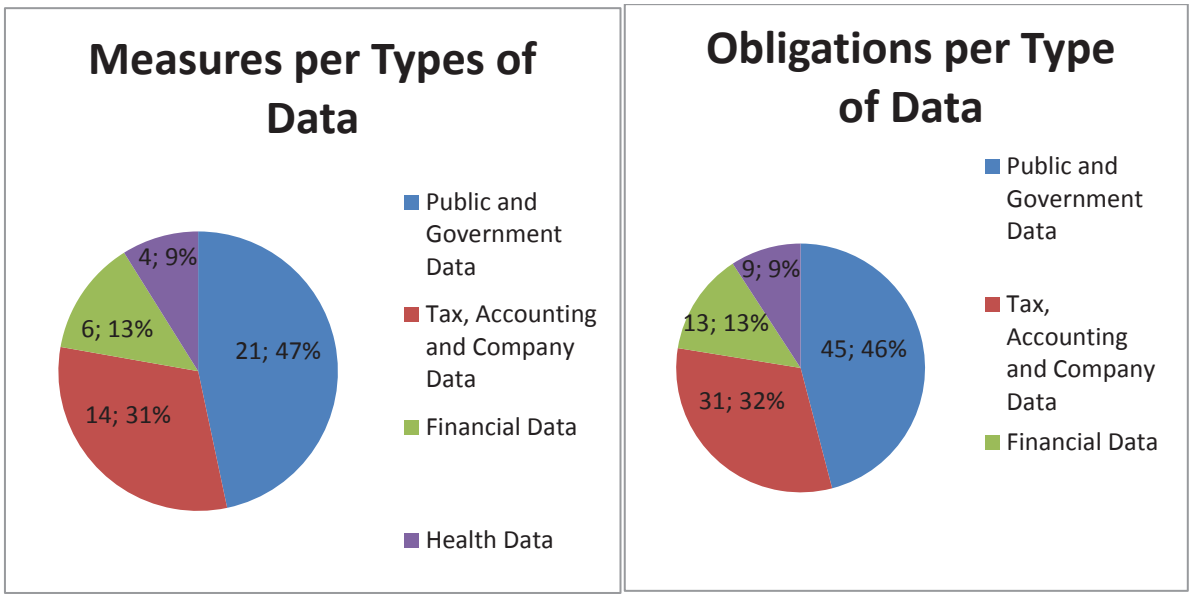
Figure 2 – Types of measures and obligations identified



The measures / obligations included in the sample of 45 data localisation measures concern different types of data:

[30] Czech Republic, France, Germany, Italy, Lithuania, Luxembourg, Spain and the United Kingdom in the LE Europe Study (SMART 2015/0016) & Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Ireland, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovenia, Sweden in the TimeLex Study (SMART 0054/2016).
[31] Annex 6.

Figure 3 – Measure and obligations per type of data



Data localisation measures are adopted by Member States for **different reasons**, which are prominently data security (in a wide sense, which encompasses concerns like confidentiality, integrity, continuity and accessibility for the controller of the data), and the availability of data for supervisory and regulatory authorities of the Member States.[32] This has been confirmed by the bilateral and multilateral exchanges with Member States and private stakeholders, subsequently to the Communication of January 2017.

A number of the restrictions and requirements are based on considerations that originated in the 'paper era', where documents needed to be physically accessible for scrutiny or where only the original paper version had legal status. Other examples arise due to a misalignment between the objective to be achieved and the means to achieve it. Measures where the policy objective is maintaining *availability* of (access to) the data to the authorities for reporting purposes fail to acknowledge the technical reality of performant data storage and processing, where the physical location of the data is hardly, if at all, reassurance for the ability to access. This misalignment can be also observed in relation to the wrong perception that localisation increases security. On the contrary, the technological reality is that scale and "mirroring" of data in different locations substantially increases security of data storage and processing in the digital age.

For some legislative and administrative rules, Member States aim at ensuring that the data is immediately available to the national government, administrative authorities and/or law enforcement institutions. Paradoxically, some legislative and administrative rules are imposed in order to keep data out of reach of other jurisdictions and limit the access of other governments to specific types of data. Those restrictions reflect concerns to protect the confidentiality of certain types of data, to control access to such data and to oversee legal proceedings in case of unauthorised access, particularly to citizens' data, national sensitive data, privileged information and industrial secrets. A study raised that security is a common driver behind data location restrictions imposed by Member States and is often used as

[32] LE Europe Study (SMART 2016/0016) and TimeLex Study (SMART 2015/0054).

"convenient shorthand" for national security, national sovereignty and for security as a public policy task or as a protection of private interests.[33]

Concretely, among the legislative and administrative rules identified, some may rely on legitimate public policy objectives but may constitute unjustified obstacles to free movement of data in the EU in the sense that they are disproportionate to achieve their objective.

Example: Mandatory use of a specific infrastructure located, which is located within the national territory and has a statutory mandate.

In one of the Member States, ICT tasks and duties with respect to the development, maintenance and operation (incl. hosting) are assigned by law to a dedicated Computing Centre. The statutory duties of that centre include giving IT support in the areas of unemployment, aviation, banking, disabled persons, insurance supervision, health, finance, and others. According to law, that centre has to be used as a subcontractor by governmental bodies before initiating a public procurement process, if their offer is in line with the market.

However, the structured dialogues have also revealed cases where some Member States decided to change voluntarily their legislation to meet the same objectives with less restrictive means:

Example: French Health Law

France revised Act number 2002-303 and the French Public Health Code which obliges hosting service providers to be approved by the Shared Healthcare Information Systems Agency within the Ministry of Health, following a strict accreditation procedure in accordance with the dispositions of Decree n°2006-6 in order to be allowed to undertake hosting activity for patient data. From 2019 the strict prior authorisation requirement will be replaced by a certification requirement.

Moreover, following the Communication of January 2017, the Commission services engaged in a preliminary **assessment to what extent the measures identified at the time and included in the sample could be considered unjustified or disproportionate**.

The main **criteria** used for the assessment were the following:

1 - Effective availability of alternative means to achieve the relevant public policy objective

For instance, requiring access to accounting and company data could replace outdated measures and obligations requiring accounting and company data to be stored locally (this approach was implemented in Denmark).

Similarly, as the French Health law example shows, strict and burdensome individual prior authorisation requirements can be replaced by a standardised certification scheme which guarantees sufficient security of sensitive health data.

2 – Excessive scope of a measure / non-critical nature of the data concerned

Restrictive measures and obligations requiring specific highly sensitive government data, critical for national security and defence, to be stored locally are most likely to be justified and proportionate.

Example: The Slovenian Classified Information Act

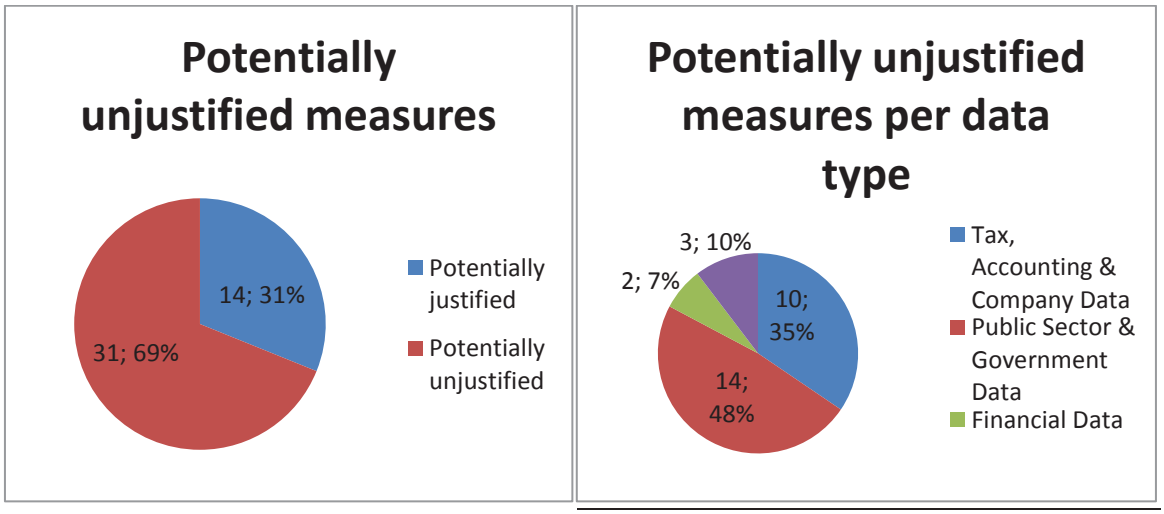
[33] TimeLex (SMART 2015/0054).

The Slovenian Classified Information Act prescribes that **classified information** may only be transferred outside secure zone if encrypted, by methods confirmed by a committee for information security. All systems where classified information is held must be protected against electromagnetic radiation. […] Whenever classified information is processed outside the original location security measures must be comparable to those that must be implemented at the original location. If the information is stored electronically it must be separated from other possible information by way of physical or virtual separation. […] The information may only be transferred/ outsourced to those organizations that have acquired clearance, issued according to the regulation which defines checking procedures, issued by the competent ministry.

However, in cases where a measure is excessively wide in scope or is interpreted widely, thus captures public data and information of a non-critical nature (e.g. **all public archives**), it could be considered disproportionate.

Based on the criteria identified above, two thirds of the identified measures appear to be potentially unjustified or disproportionate.

Figure 4- Percentages and types of potentially unjustified measures (based on the sample of 45 restrictions)



35% of the potentially unjustified measures affect tax, accounting and company data and thus are cross-cutting in their impact on businesses. Over 48% of the measures concerned target public data and government data and could have an impact on costs of services for the public sector and could signal to businesses, especially SMEs, that outsourcing, in particular to other Member States, constitutes a risk. In any event, it must be underlined that such measures contribute significantly to the wrong conception that data localisation is a default requirement, in particular in relation to public data and tax data, and that proximity equals security and reliability when it comes to data storing and processing. In turn, this promotes more uncertainty and undermines trust in relation to use of data services available in other Member States.

Driver 2: Administrative practices

In addition to the sample of measures identified by the fact-finding exercise conducted by the Commission[34] a number of administrative practices (including specifically administrative decisions and procurement practices by public authorities) hindering cross-border data storage and processing services / in-house IT solutions were encountered.

Some impose the need to obtain specific permits through lengthy and cumbersome processes at national level to allow services for e.g. hosting patient data, without provisions for mutual recognition across Member States. Others require that data must remain accessible to a supervisor or that it must be exclusively accessible to the owner and yet other administrative practices are arbitrarily requiring data localisation without any reasonable justification. These administrative practices exist and develop due to restrictive interpretations of national provisions or due to individual or systematic decisions based on subjective considerations biased by risk aversion or even a degree of ignorance of technological realities and/or the applicable laws.

As part of the public online consultation of 2017, it was reported that: "*In the cloud computing business, the most common data localisation measures we see target financial, health telecom and public sector data. However, these measures are less often found in black and white legislation, but rather in sectorial guidelines by national regulators or government agencies*". As the respondent also stated, it is increasingly difficult for IT-service providers to be aware of all data localisation restrictions that are in place at a given time, because of the multitude of regulators and agencies and of their varying approaches to technology and data transfers. It is even more difficult to know it for IT-service providers located in another Member States and who try to enter a new market.

The wider dimension of the problem resembles in the fact that 179 out 353 respondents to the public consultation stated that they know of administrative rules and guidelines, including those adopted in the context of public procurement, that require to store or process data locally.[35]

The 2014 Trusted Cloud Europe survey[36] provided evidence that even if the rules do not have a legal status they can act as barriers to the cross-border transfer of data in the EU: over two thirds of respondents (180 responses out of 263) agreed to the statement that "even outside of formal laws, norms may exist (issued by supervisors, regulators, sector organisations etc.) which stop or discourage the use of cloud services outside national borders".

Example 1: X bank undertook an initiative to increase efficiency, lower costs and improve security through centralisation of IT infrastructures and avoidance of IT duplication in subsidiaries of the bank. The project was presented to all the local Regulators concerned for information / approval. All the Central Banks approved the project with the exception of Y National Bank, which insisted on local storage based on considerations of distance, the possibility of change of storage configuration in the future and the complexity. The X bank provided documentation demonstrating low levels of those risks. Still, the Y National Bank repeatedly rejected the project. As a result, the X bank had to maintain redundant IT operations in country Y.

[34] Primarily informed by two studies commissioned LE Europe Study (SMART 2015/0016) and TimeLex Study (SMART 2015/0054).

[35] The respondents to the public consultation could not distinguish between administrative rules and guidelines on the one hand, and administrative practices on the other hand. Therefore, administrative rules and guidelines must be understood as including practices.

[36] Report available: https://ec.europa.eu/digital-single-market/en/news/trusted-cloud-europe-survey-assessment-survey-responses

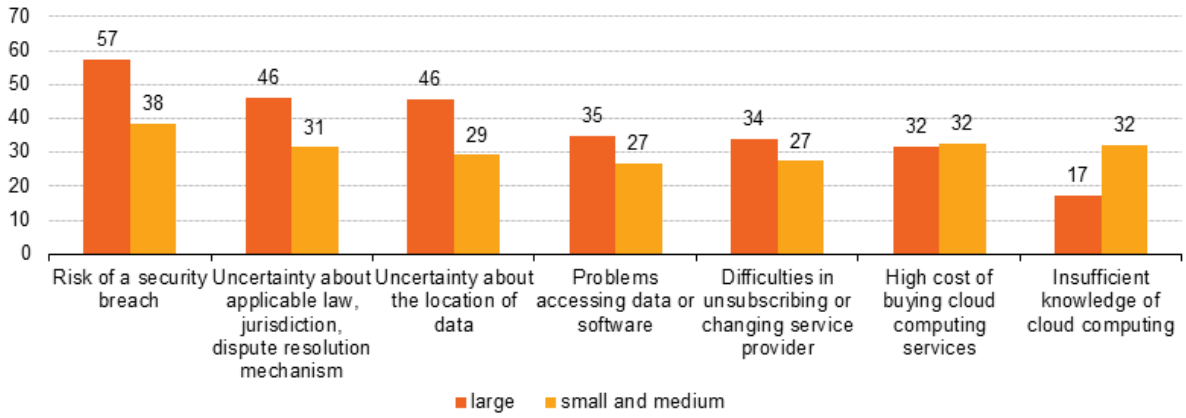
Example 2: Testimony from an IT solutions provider who has worked on many projects with public health authorities in the UK. This provider reported that its proposal to store data generated by the UK's National Health Service (NHS) on servers located in another country was refused by its customer even though the proposal included using NHS encryption, using VPN, and then encrypting of hard drives.[37] The investigation by the provider unearthed two sets of guidelines by the Health & Social Care Information Centre (HSCIC) which are contradictory: one written in 2009 stating that "*Patient identifiable Data should not be recorded outside of the England boundary in any format for any reason without the prior explicit written permission of NHS CFH*"[38] and one written in 2013 stating that "*there is no Department for Health policy stating that patient information must be held in England*".[39] When asking for clarification on the rules, the provider said that he was directed to the 2009 guidance document.

Therefore it is obvious that restrictive administrative practices caused by either, factual ignorance, subjective preferences and bias, or by arbitrary decisions demonstrate to have a severe impact on the certainty and complexity for businesses and investors.

Problem 2: Legal uncertainty

Legal uncertainty is one of the main constraints to data mobility. The survey of factors preventing enterprises from using cloud computing services shows that uncertainty about the location of data and about applicable law/jurisdiction constitute, together with closely related security concerns, strong obstacles to cloud uptake and so, to free movement of data in the EU.

Figure 5 – factors limiting enterprise use of cloud services



Source: Eurostat (2014)[40]

Legal uncertainty arises from a perception that there is a legal obligation to store or process data in a specific territory (even if there is none) and a misinterpretation of rules (driver 3), and from a complex EU legal framing and ambiguity on the applicable law for non-personal data (driver 4).

[37] LE Europe Study (SMART 2015/0016), p. 26.
[38] http://systems.hscic.gov.uk/infogov/igsoc/links
[39] http://systems.hscic.gov.uk/infogov/igsoc/links
[40] Eurostat (2014), "Factors limiting enterprises from using cloud computing services, by size class, EU-28", 2014 (% enterprises using the cloud); http://ec.europa.eu/eurostat/statistics-explained/index.php/Cloud_computing_-_statistics_on_the_use_by_enterprises

Driver 3: Perceived data localisation requirements

Legal uncertainty leads users of data-based services to demand local data storage and/or processing from the service provider. 60% of European IT service providers who participated in the public consultation of 2017 indicated that their customers have demanded local storage of their data. The reasons indicated for this are either an assumption/perception that there is a local legal or administrative requirement to do so or a lack of familiarity with existing EU rules. The existence of the perception problem was also confirmed in the studies[41], the structured dialogues with the Member States and other stakeholders.

The perception might well differ from the actual legal situation, especially if the regulatory framework is unclear:

Example: a software as a service provider specialising in integrated solutions for universities has reported that some of their partner universities "believe" that laws applicable to them force them to keep data in their respective countries.

Also, regulation on providing access to data is sometimes interpreted as an obligation to give physical access to the server on which the data is stored. This is the case, for example, for several national rules on tax data, invoices and company records where companies have a reporting and auditing obligation.

There is a strong sectorial dimension to the legal uncertainty problem. Market participants from heavily regulated and supervised sectors will assume that sector-specific localisation restrictions exist for them or at least that it is safer to store data locally in order to avoid complicated discussions with supervisors. In the health sector, some provisions require physical storage of hard copies of medical records in the hospital, with no clarification as to the applicability of this requirement for electronic records. Similarly, some sector regulators require notification of data transfers to other countries than the one where the company is established, which might be misinterpreted as localisation requirements by stakeholders.[42]

Testimonies of several actors in the health and banking sectors received through stakeholder engagement workshops show that businesses sometimes take a risk-averse decision to store and process data locally – to avoid the prospect of infringing the rules.[43] Many businesses seem to have internal corporate policies that are at least as restrictive as the legislation in place.[44] Such risk-averse behaviour discourages the adoption of innovative solutions and implies processing and/or storage of data in another Member State and, in some cases, leads to duplication of infrastructure.

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[41] LE Europe Study (SMART 2015/0016).
[42] LE Europe Study (SMART 2015/0016).
[43] European Union Agency for Network and Information Security (ENISA), Report "Secure Use of Cloud Computing in the Finance Sector", December 2015), available at: https://www.enisa.europa.eu/activities/Resilience-and-CIIP/cloud-computing/cloud-in-finance: "Despite the fact that some NFSAs around Europe (e.g. the Netherlands, Spain, Greece, Finland) have published opinions related to outsourcing/cloud based services, it appears that the financial industry is dealing with a lack of clear, formal guidance that is consistent across all NFSAs on the specificities of cloud based services. […]Our respondents have described various cases in which the need to notify NFSAs about the adoption of cloud based services has caused severe delays, or even blocked the prospective use of cloud services in their FIs. This on one hand is because information was not provided by the CSPs, but on the other hand also due to lack of guidance from the NFSAs on what specific information to be provided".
[44] LE Europe Study (SMART 2015/0016).

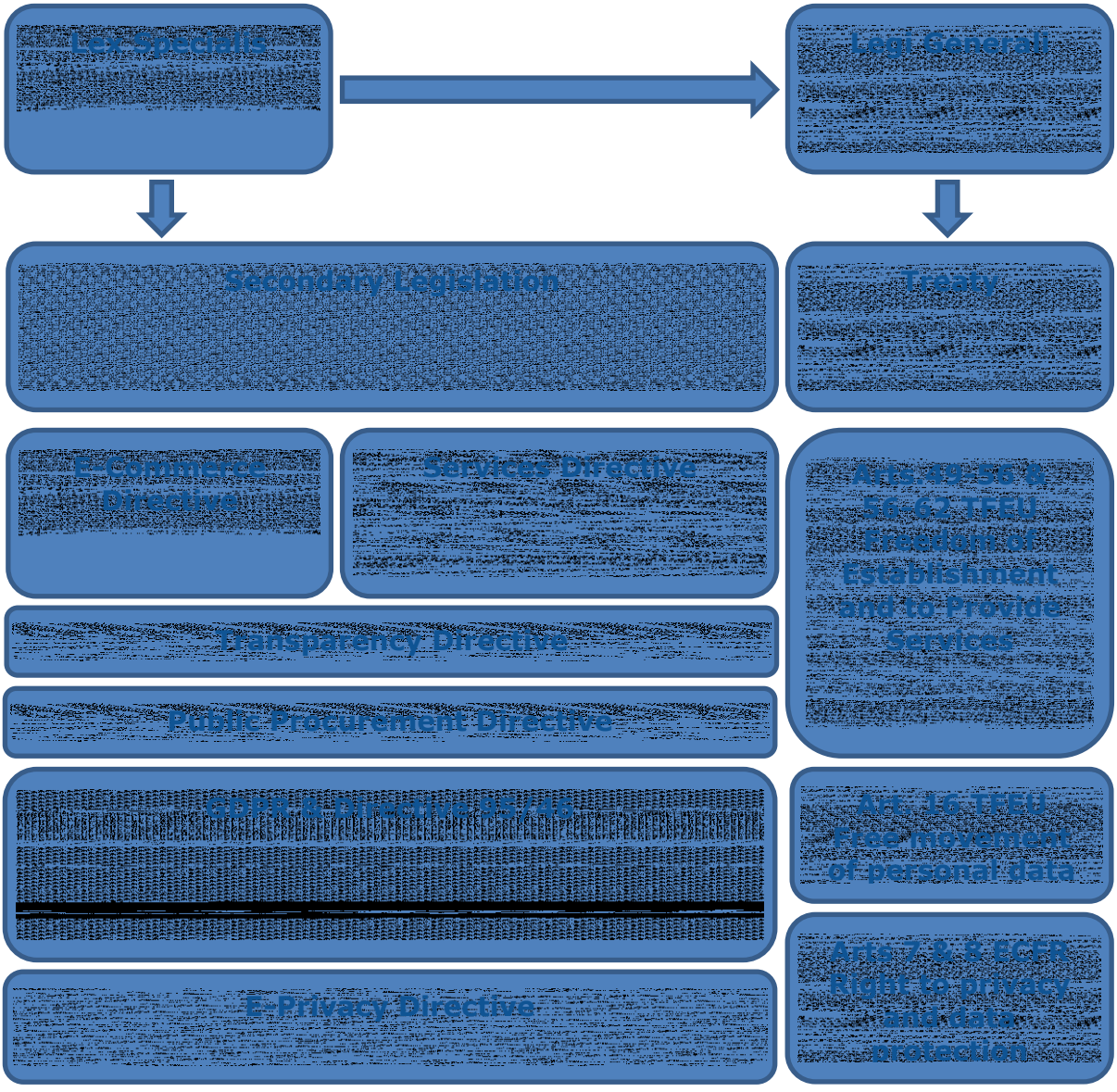
Ultimately, "*such perceptions are as powerful as hard restrictions in deterring cross-border data transfers*"[45].

[45] LE Europe Study (SMART 2015/0016), p. 38.

Driver 4: Complex EU legal framing

1. Data localisation

The a*cquis communautaire* that could potentially be relied on to tackle obstacles to the EU single market for data and pursue a free movement of data consists of several TFEU provisions as well as a number of secondary legislative instruments varying in scope and having different Treaty bases. This section will assess the feasibility of relying on existing legislation to address in a cross-cutting manner the identified localisation restrictions and measures having equivalent effect, and to avoid the emergence of new restrictions. **Please also see section 6.3.1.1, infringements text box in the main report.**



The potentially applicable substantive provisions of the EU secondary legislation mentioned above have well-defined and targeted scopes and coordinated fields (e.g. the E-Commerce

Directive covers information society services and the Services Directive covers services, both as defined by EU law) which overlap only partly with **Member States' legislative and administrative rules and practices** addressed by this initiative. Moreover, a number of relevant areas are expressly excluded from the scopes of such legislation.

This leads to legal uncertainty as to what extent obstacles to movement of data across borders in the EU are covered by existing EU law. Users of new technologies in regulated markets seem to be affected more seriously by this problem of uncertainty about rules.[46]

Existing secondary legislation and potential gaps

Existing regulatory instruments				Gaps	
Name of instrument	**Sectors covered**	**Data / activities covered**		**Sectors not covered**	**Data / activities not covered**
GDPR	Horizontal	personal data / processing	Regulation entered into force on 24 May 2016 and shall apply from 25 May 2018	Criminal prosecution	Non-personal data / derogations from free movement for reasons other than the protection of personal data Limited applicability in B2B relationships
E-commerce Directive	information society services (ISS)	taking-up and pursuit of the activity of an ISS notification by MS of planned derogations to the cross-border provision of ISS by a given ISS provider	No cases / examples detected	Several, incl. taxation, activities of notaries or lawyers, gambling activities	Not clear whether would apply to the restrictions on the entities storing or processing data or data as such (controller)
Services Directive	horizontal	establishment, provision of a service, reception of a service	No cases / examples detected	Long list, incl. taxation, financial services,	Lack of specific provisions targeting data localisation restrictions

[46] LE Europe Study (SMART 2015/0016) and IDC Study (SMART 2013/0063)

		notification by MS of derogations from the freedom to provide services		transport, healthcare, gambling, social services	
Transparency Directive	horizontal	notification by MS of draft planned technical regulations, incl. rules on information society services	Several cases on gambling and telecoms data retention	Several, incl. broadcasting, financial services	Notification obligation does not cover rules which are not specifically aimed at information society services
Public Procurement Directive	horizontal	public procurement by contracting authorities	No cases / examples detected	Long list, incl. broadcasting, certain legal services, certain financial services, partly defence and security	No specific provisions on data storage / processing, just a general non-discrimination principle

The public consultation confirmed that this legal patchwork leads to legal uncertainty. In its contribution, the government of the United Kingdom stated: "*There are at least four separate legislative instruments that may be relevant [GDPR, Services Directive, Transparency Directive, E-Commerce Directive], none of which explicitly sets out a regime for data storage and which have different objectives, different scopes, and different exemptions, with some exemptions listed in a separate annex to that legislation. Most organisations (including public authorities and SMEs) would find it hard to navigate and understand all that legislation. We believe a new regulation is needed to simplify the landscape […]*".[47]

Testing the applicability of the existing EU secondary legislation against the sample of 45 localisation measures confirms the difficulty to identify one key applicable instrument the enforcement of which would have the desired cross-cutting legal as well as economic impact, notably in terms of creating precedents and enhancing legal certainty. In particular:

GDPR: Only 7 out of the 45 measures identified potentially fall within the scope of the GDPR. However, the majority of these concern health data, hence could be justified under Article 9(4) of the GDPR which allows Member States to maintain or introduce further conditions, including limitations, with regard to the processing of data concerning health.

[47] UK Government response to the European Commission's consultation on Building the European Data Economy

E-commerce Directive: Nearly one quarter of the 45 localisation measures identified, fall within the scope of either, the tax exemption (9 measures) or the gambling exemption (2 measures). Therefore, the E-commerce Directive is not applicable to tax and gambling related localisation measures which represent a substantial share of the overall measures in existence.

Services Directive: Between one quarter and two thirds of the localisation measures and entailed obligations identified are exempted from the scope of the Services Directive, depending on how widely or narrowly the exemptions are interpreted on a case-by-case review.

Moreover, in the sample of 30 potentially unjustified restrictions, an even more significant share fall within the scope of the derogations and exemptions from the GDPR and the directives. Such scope might be interpreted differently, which adds yet another layer of legal uncertainty.

Example: Legislation on Health Data

One Member State has legislation that requires patient data to be stored according to state-of-the-art encryption and the provider of the electronic health record/data base must be authorised prior to using health records. Depending on whether the purpose of the measure and obligations foreseen are to protect personal data, the GDPR could potentially apply. However, in relation to sensitive data, such as health data, the GDPR could be understood as allowing for derogations by Member States from the free flow of personal data according to Art.9 (6). In case the specific purpose of the measure is not protection of personal data of natural persons, the requirement of state-of-the-art encryption could trigger both Art.3 of the E-commerce Directive and Art.14 of the Services Directive. However, it would most likely qualify as proportionate and justified, in view of the sensitive nature of the data. The prior authorisation requirement would fall under Art.16 of the Services Directive and could be unjustified due to its burdensome nature for providers from other Member States. However, Art.2 (f) excludes healthcare services from the scope of the Services Directive.

Below is a detailed explanation of the reasons why few of the identified data localisation restrictions could be addressed under the existing EU secondary legislation.

1 – No comprehensive "free movement of data" principle covering the different types of data within the scope of the initiative

Article 16 TFEU established solely the principle of free movement of personal data. Accordingly, Regulation 2016/679 (the GDPR, applicable from 25 May 2018) and Directive 95/46/EC provide for the free movement of *personal* data. Articles 1(1) and 1(3) of the GDPR ban Member States' restrictions to the free movement of personal data to the extent they are motivated by the protection of personal data of natural persons. Restrictions related to other objectives and justified by other reasons than the protection of personal data, e.g. under accounting or company laws, are not covered by the GDPR. Furthermore, non-personal data remains outside the scope of the GDPR.

Only 7 out of the 45 measures identified could fall within the scope of the GDPR. However, the majority of these concern health data, hence could be justified under Article 9(4) of the GDPR which allows Member States to maintain or introduce further conditions, including limitations, with regard to the processing of data concerning health.

Other TFEU provisions, notably those on the free movement of services or freedom of establishment, and secondary legislation, in particular the E-commerce and the Services Directives, apply to data storage and processing services. However, the apparent lack of case-law clarifying the application of those provisions / legislation to data localisation measures and the lack of general applicability of the potentially relevant provisions with respect to data localisation point to the absence of an implied cross-cutting free movement of data principle.

This is mainly due to the various derogations and exemptions to secondary legislation as well as the difficulty of demonstrating the unjustified nature of data localisation measures under relevant provisions in view of the given margin of interpretation.

2 – Exclusions from the scope of the existing EU secondary legislation

A significant number of sectors and/or activities are excluded either, from the scope of the existing EU secondary legislation in the fields of the free movement of services and freedom of establishment, or from the scope of the particular provisions of those legislative instruments.

The E-commerce Directive

The underlying objective of Directive 2000/31/EC on certain aspects of information society services, in particular electronic commerce (E-commerce Directive, ECD), in the Internal Market is to ensure a free movement of information society services between Member States. This shall be achieved through approximation of certain national provision on information society services relating to the internal market and the establishment of service providers in particular. Therefore, the E-commerce Directive has established the country-of-origin principle, banning restrictions to the freedom to provide information society services from another Member State to the extent that these requirements fall within the coordinated field.

The E-commerce Directive is applicable where a provider of an information society services is at issue as defined in Art. 2(a) of the E-Commerce Directive. This legal provision sends the reader to the pre-existing definition in Art. 1(2) of the Technical Standards Directive as amended by Art. 1(2) of the Technical Standards (Amendment) Directive, which defines an information society service as "(1) any service normally provided for remuneration, (2) at a distance, by electronic means and (3) at the individual request of a recipient of services."

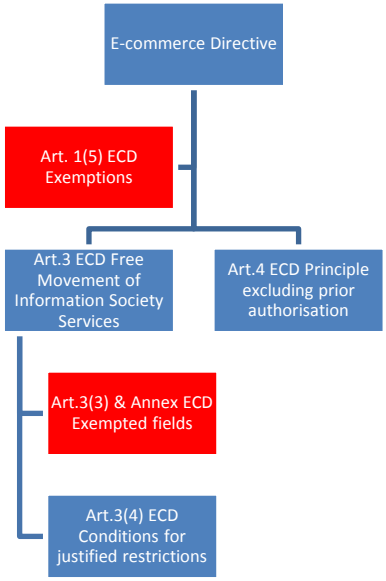
Not only an important distinction to be made is between a pure information society service and a service that makes use of information society technology[48], but it must be pointed out that it is not entirely clear whether or not the provisions in the E-commerce Directive only apply to national requirements hindering a free movement of information society services between Member States imposed on service providers. It is to be doubted that the freedom to receive services is implied in the E-commerce Directive and therefore can be invoked in relation to data localisation measures imposed on the potential recipients of information society services ("data controllers"), as this has not yet been tested in front of the European Court of Justice (ECJ).

This must be viewed in light of the fact that only the minor part of the data localisation measures identified in this IA (approximately 10) imposes obligations explicitly on service providers, and these obligations exist predominantly in the areas of gambling, financial services and only few regard data storage / processing service (cloud) providers.

Potentially less than one quarter of the 45 localisation measures identified fall within the scope of the E-commerce Directive.

[48] A service that makes use of information society technology may be seen to be a composite service and potentially not qualify as information society service. See further Case C-434/15 *Asociación Profesional Elite Taxi v. Uber Systems Spain SL,* Opinion of the Advocate General, 11 May 2017.

Moreover, a number of activities are excluded from the scope of the ECD or from the scope of specific provisions, because they cannot be guaranteed under the Treaty or in accordance with secondary legislation.



Article 1(5) of the ECD states the fields and activities which shall be excluded from the applicability of the ECD. These include the field of taxation, questions covered by EU personal data protection law, questions governed by cartel law, activities of notaries or lawyers, activities related to legal representation before courts and gambling activities.

In particular, the exclusion of the field of taxation, which is justified by the fact that the Treaty provides specific legal bases for taxation matters and by the existence of Community instruments already adopted in that field, curtails the ECD's applicability to the identified localisation measures substantially.[49] Furthermore, activities related to gambling are also excluded from the scope of the ECD because of the specific nature of these activities, which acknowledges the need for implementation of policies relating to public policy and consumer protection by Member States.[50]

Nearly one quarter of the 45 localisation measures identified fall within the scope of either the tax exemption (9 measures) or the gambling exemption (2 measures).

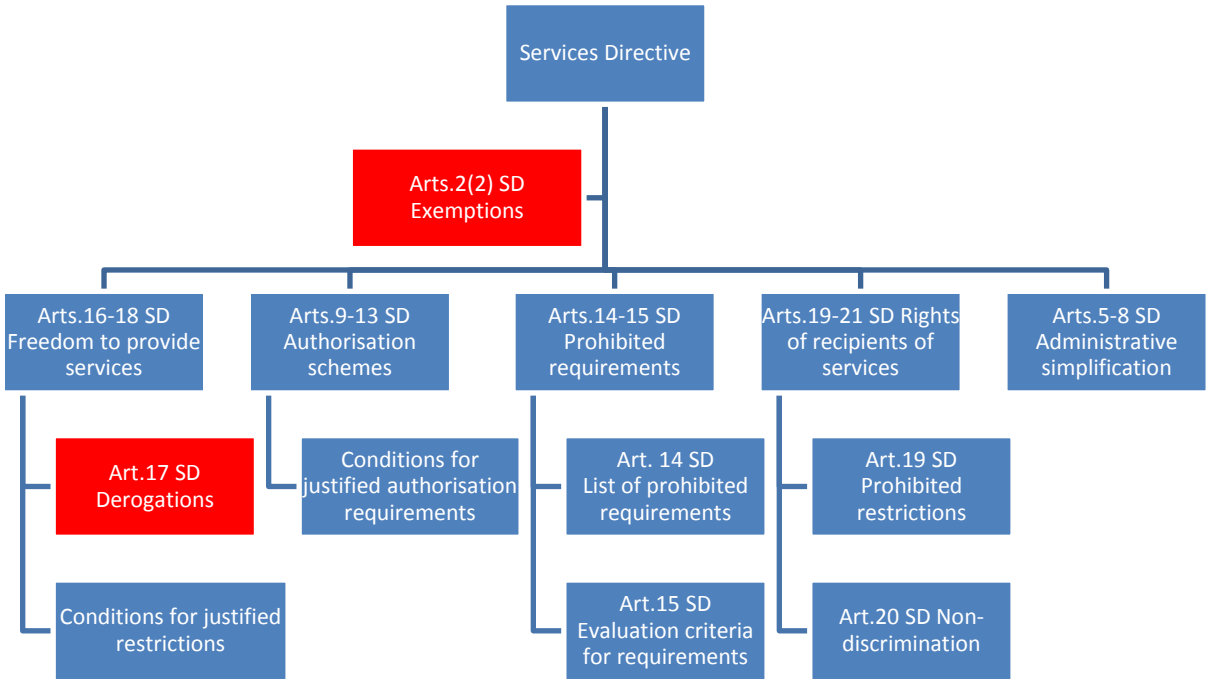
Moreover, Article 3(3) of the ECD in conjunction with the Annex established derogations from the Free Movement of Information Society Services enshrined in Article 3. These include but are not limited to intellectual property rights, the freedom of the parties to choose the law applicable to their contract and the permissibility of spam.

The Services Directive

Similarly to the E-commerce Directive, Directive 2006/123/EC on services in the internal market (the Services Directive, SD) has a strong focus on service providers. The underlying objective of SD is to facilitate the exercise of the freedom of establishment for service

[49] Recital 29 of ECD.
[50] Recital 25 of ECD.

providers and the free movement of services without undermining the quality of services. In order to fulfil this objective the SD goes beyond the Treaty and specifies concrete obligations on Member States which shall facilitate the cross-border provision of services as illustrated below:



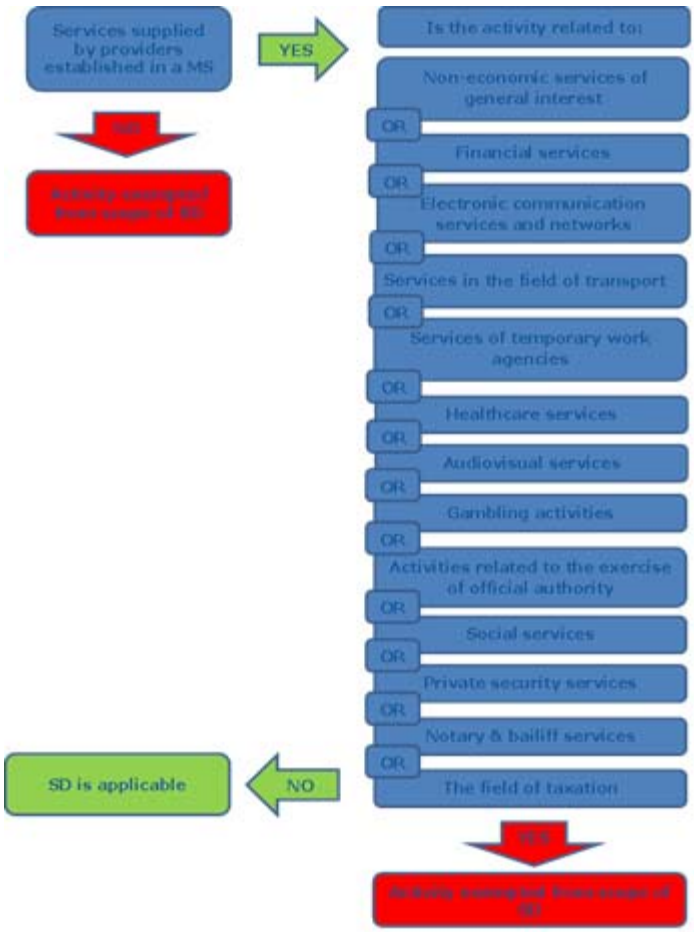
As illustrated the Service Directive provides for exemptions in Article 2(2) which features a long list of activities to be excluded.

Just as in the case if the E-commerce Directive the field of taxation is excluded from the scope of the SD according to Article 2(3). The exclusion covers both substantive tax law and administrative requirements necessary for the enforcement of tax laws.[51] Localisation restrictions stemming from strict local storage and data availability requirements of Member States' tax laws would qualify as administrative requirements imposed in order to safeguard the enforcement of such tax laws. Also, gambling is excluded from the scope of the Services Directive for reasons of public policy and consumer protection.

Healthcare related activities are excluded too (Article 2(2)(f) of the SD). This concerns services provided to a patient and covers activities which are reserved to a regulated health profession in the Member State where the service is provided. However, services to the health professional himself or to a hospital as well as services which are not intended to maintain, assess or restore patient's state of health are not covered by the exclusion. In addition, services and activities designed to enhance wellness, to provide relaxation or services which

[51] Directorate-General for the Internal Market and Services (European Commission), "Handbook on implementation of the Services Directive", 2008, available at : http://publications.europa.eu/en/publication-detail/-/publication/a4987fe6-d74b-4f4f-8539-b80297d29715 at p. 13.

can be provided without specific professional qualification fall within the scope of the SD.[52] In view of this a substantial margin for interpretation is given.



Financial services excluded by Article 2(2)(b) of the SD concern banking services, credit services, securities and investment funds and insurance and pension services. The financial services exemption also extends to services related to the take-up and pursuit of the business of credit institutions[53]. However, neither the SD nor the Handbook on its implementation explain whether services ancillary to financial services, such as related data storage / processing services, are also excluded from the Directive.

Moreover, it shall be noted that transport services, such as urban transport, taxis and ambulances as well as port services, should be excluded from the scope of the Services Directive as well. This would potentially prevent the applicability of the Services Directive to services related to smart transport and mobility.

Between one quarter and a two thirds of the localisation measures and entailed obligations identified are exempted from the scope of the Services Directive, depending on how widely or narrowly the exemptions would be interpreted by the European Court of Justice.

Additional derogations from the freedom to provide services are stated in Articles 17 and 18 of the Services Directive. These include but are not limited to services of general economic interest, questions relating to EU data protection law and intellectual property rights.

3 – Lack of substantive provisions in the existing EU secondary legislation (beyond the GDPR) that are sufficiently focused on the data localisation issues addressed by the initiative

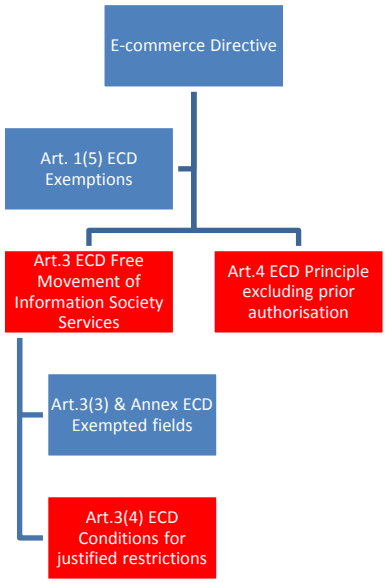
Only once the data localisation restriction or the measure having equivalent effect at issue does qualify as falling within the scope of either, the E-commerce Directive or the Services

[52] Directorate-General for the Internal Market and Services (European Commission), "Handbook on implementation of the Services Directive", 2008, available at : http://publications.europa.eu/en/publication-detail/-/publication/a4987fe6-d74b-4f4f-8539-b80297d29715at p. 12.
[53] As set out in Annex I to Directive 2006/48/EC.

Directive, compliance with the criteria in the respective provisions must be established. This constitutes a burdensome task as will be outlined below.

The E-commerce Directive

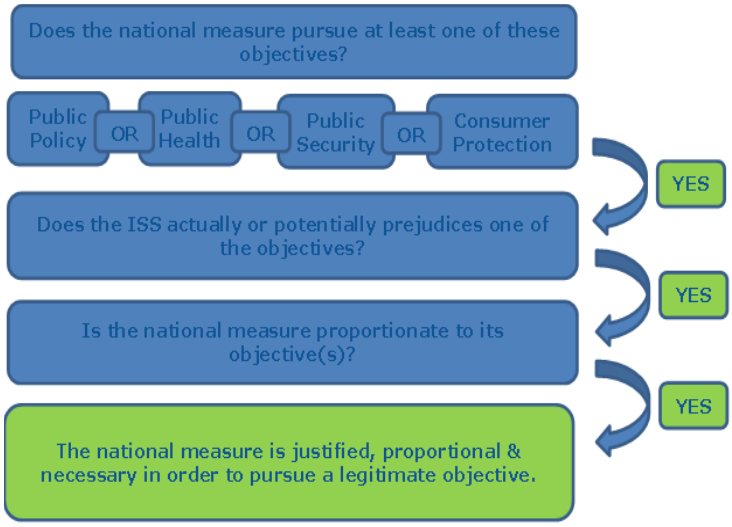
As shown, the E-commerce Directive ought to ban restrictions to the freedom to provide information society services from another Member State to the extent that these requirements fall within the coordinated field. This includes requirements *with which the service provider has to comply* in respect of: (i) the taking up of the activity of an information society service, such as requirements concerning qualifications, authorisation or notification or (ii) the pursuit of the activity of an information society service.



Regarding prior authorisation schemes, Article 4(1) of the E-commerce Directive prohibits Member States to make the taking up and pursuit of the activity of an information society service provider subject to prior authorisation or any other requirement having equivalent effect. However, this only applies if the prior authorisation schemes target information society services specifically and exclusively, but not to authorisation schemes directed at the (potential) recipients of the services.

Two measures potentially fall within Art.4(1) and with regards to six measures the applicability is rather uncertain.

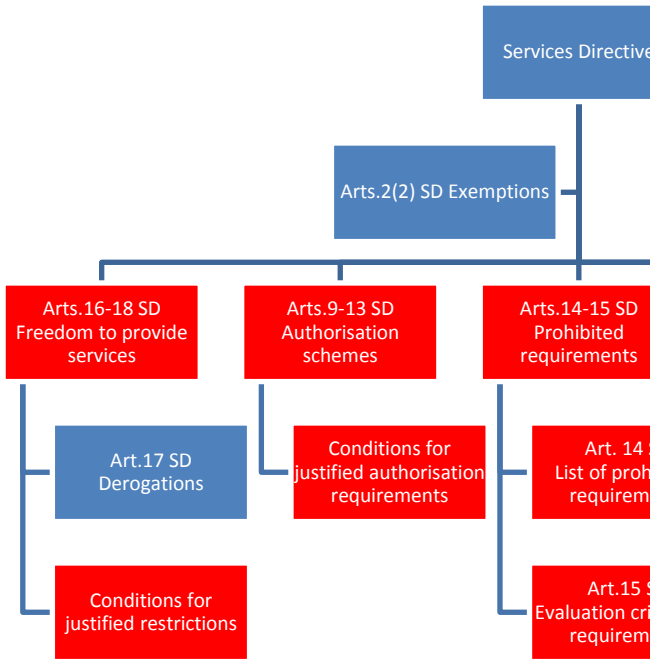
Similarly, the provisions of the E-commerce Directive allowing for restrictions to the freedom to provide information society services are very much focused on providers of such services. One of the steps in the three-fold test established by Article 3(4) of the Directive (see the graph below) is that the Member State intending to impose such a restriction has to comply with a notification requirement: it has to first address its concerns to the Member State of origin of the service provider; if that Member State does not adequately resolve the issue, the measure restricting the freedom to provide information society services can be taken; the measure shall be notified to the Commission and the Member State of origin of the provider.

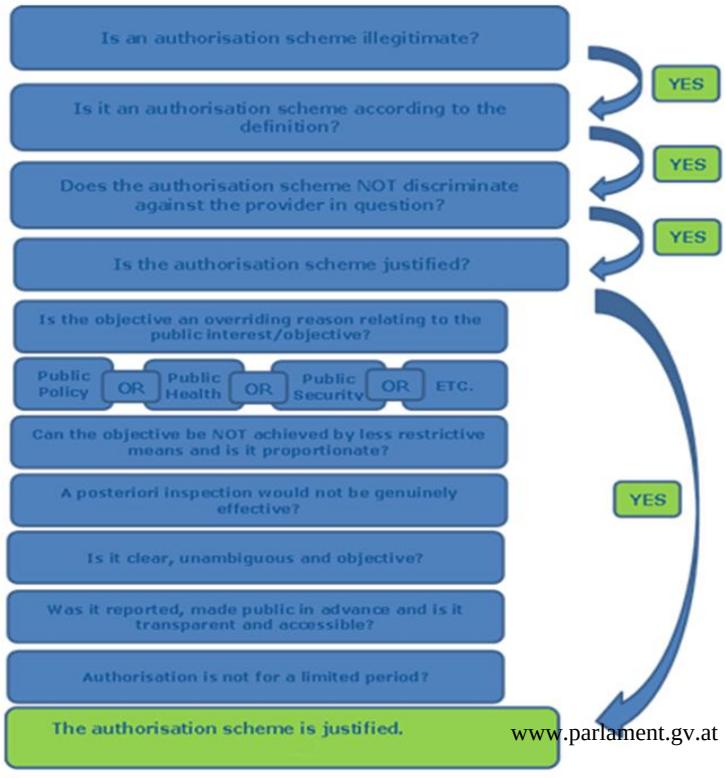


Eight measures would need to be scrutinized in compliance with Article 3(4) on whether they are unjustified and disproportionate. The final outcome of such an assessment by the European Court of Justice can be hardly foreseen.

The Services Directive

Similarly to the E-commerce Directive, the Services Directive, SD has a strong focus on restrictions imposed on service providers as reflected by the number of dedicated provisions (See in the graph below in red). Only Articles 19 to 21 define and address specifically the rights of recipients of services (See in the graph below in orange). The inclusion of additional provision for recipients of services might be viewed as reassuring that provisions focused on providers cannot be invoked where recipients are subject to potential unjustified restrictions.



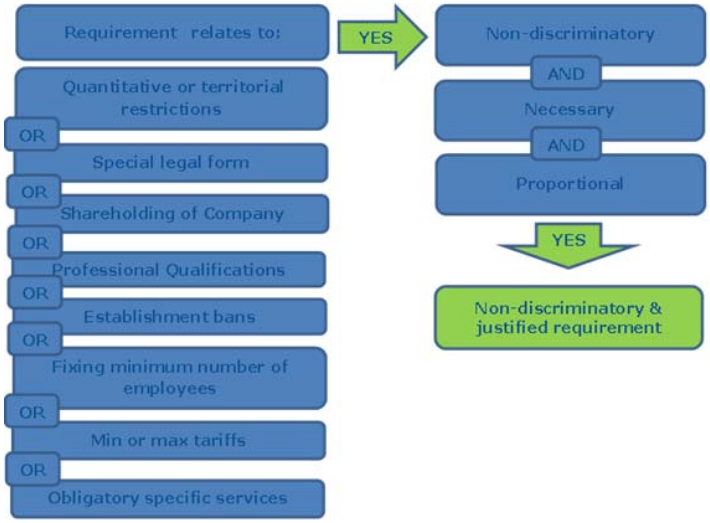


As regards the freedom of establishment, the Services Directive deals in Articles 9 to 13 with authorisation schemes and other requirements regulating access to, or the exercise of, a service activity (e.g. an obligation on a provider to take a specific legal form). Article 9 of the

Services Directive prohibits discriminatory authorisation schemes or schemes which are not justified and proportionate in view of an overriding reason relating to public interest. In comparison with Article 4(1) of the E-commerce Directive, SD (Articles 10 – 13) explicitly adds the condition of non-discrimination and outlines precisely conditions and procedure for authorisation schemes (see the graph next to the text). In light of the given margin of interpretation and an easily established legitimate objective the difficulty in arguing the unjustified and discriminatory nature of an authorisation scheme cannot be denied.

Only in relation to 2 measures the applicability of Articles 9 -13 would be highly probable, whereas with regards to further 3 measures applicability is uncertain. Whether the authorisation scheme is justified and may be granted would be subject to a margin of interpretation, hence the final outcome of such an assessment by the European Court of Justice can be hardly foreseen.

In Article 14 of the Services Directive a categorical prohibition of certain types of discriminatory requirements is set out. These are direct or indirect requirements discriminating natural persons depending on nationality or discriminating companies depending on the location of the registered office. Whereas, Article 15 states that Member States may impose requirements where they are justified for reasons of public policy, public security, public health or the protection of the environment as well as with regards to employing conditions as illustrated. Again, in light of the given margin of interpretation and the list of legitimate requirements the difficulty of proving the unjustified and discriminatory nature of an imposed requirement cannot be denied.



Only 6 measures would potentially trigger Articles 14 & 15, but the final assessment by the European Court of Justice can be hardly foreseen.

As regards the free movement of services, the Directive contains provisions both to ensure the right of providers to provide services in a Member State other than that in which they are established (e.g. the provider cannot be required to have an establishment in the Member State of recipient) and to prevent Member States from imposing on a recipient requirements which restrict the use of a service supplied by a provider established in another Member State (e.g. an obligation to obtain authorisation from or to make a declaration to their competent authorities).

The freedom to provide services as enshrined in Article 16 of the Services Directive requires Member States to respect the right of providers to provide services in a Member State other than that in which they are established. Possible requirements with which providers must comply shall be non-discriminatory, necessary and proportionate. It must be repeatedly noted that this three-fold test amounts to the previously mentioned difficulties. The Article also explicitly precludes Member States from imposing certain specific requirements:

- an obligation on the provider to have an establishment in their territory;
- an obligation on the provider to obtain an authorisation from their competent authorities including entry in a register or registration with a professional body or association in their territory, except where provided for in this Directive or other instruments of Community law;
- a ban on the provider setting up a certain form or type of infrastructure in their territory, including an office or chambers, which the provider needs in order to supply the services in question;
- the application of specific contractual arrangements between the provider and the recipient which prevent or restrict service provision by the self-employed;
- an obligation on the provider to possess an identity document issued by its competent authorities specific to the exercise of a service activity;
- requirements, except for those necessary for health and safety at work, which affect the use of equipment and material which are an integral part of the service provided.

In total 14 measures could potentially be in breach of the free movement of services under Article 10. However, it must be noted that a clear case is given only with regards to 3 measures, whereas applicability on the remaining 7 is uncertain.

However, the freedom to provide services is subject to an extensive list of derogations entailed in Article 17 of the Services Directive. Furthermore, Article 18 permits measures relating to the safety of services which restrict the freedom to provide services if:

- the mutual assistance procedure in Article 35 was complied with;
- no applicable EU law in the field of safety services is available;
- the measures guarantee a higher level of protection of the recipient;
- measures in the Member State of origin are not in place or inefficient;
- the measure at hand is proportionate.

As opposed to the E-commerce Directive, the Services Directive addresses in Article 19 specifically the fact that Member States may not impose on a recipient requirements which restrict the use of a service supplied by a provider established in another Member State, in particular the following requirements: (a) an obligation to obtain authorisation from or to make a declaration to their competent authorities; and (b) discriminatory limits on the grant of financial assistance by reason of the fact that the provider is established in another Member State or by reason of the location of the place at which the service is provided.

Furthermore, Article 20 of the Services Directive defines that neither discriminatory requirements based on the recipients nationality or place of residence, nor discriminatory general conditions of access to a service shall be allowed. However, it must be noted that *"[...] the possibility of providing for differences in the conditions of access where those differences are directly justified by objective criteria [...]"* is given. This caveat combined with the well-known difficulty of proving in particular indirect discrimination makes it a challenging task to establish applicability in cases where it is not immediately obvious and in view of interpretation margins.

17 measures possibly trigger Articles 19 & 20 of the Services Directive, but only five of them constitute an obvious potential violation of the respective articles.

The Public Procurement Directive

Directive 2014/24 (the Public Procurement Directive) has established a general non-discrimination principle, according to which "contracting authorities shall treat economic operators equally and without discrimination and shall act in a transparent and proportionate manner". However, it does not contain more specific provisions dealing with data services or data storage / processing activities. While there is no reason why the general principle should not apply to discriminatory data storage or processing conditions imposed in the context of public procurement tenders, the evidence-gathering for this IA has not brought up any cases of such application of the principle in practice.

14 measures could potentially or actually violate the non-discrimination principle enshrined in the Public Procurement Directive.

Conclusion: it is very likely that most of the data localisation restrictions identified in this IA would not "match" the substantive scope of application of the provisions assessed and/or would be explicitly excluded from the scope of the relevant directive. Also, both the provisions and the exclusions are open to different legal interpretations which have not been tested in front of the ECJ yet, which leads to significant legal uncertainty.

2. Switching providers, porting data

As regards **movement of data across data (cloud) service providers / in-house IT systems**, while there are several legal provisions, e.g. in EU data protection law[54] and proposed EU consumer law[55], as well as certain national laws[56], to ensure data portability rights for individuals and consumers, there are no such rights granted to businesses. For business users of cloud services, portability is regulated by the contract with their cloud service provider(s). This may not be of great concern to larger business organisations, but for smaller players (SMEs and start-ups) it is reportedly very difficult to negotiate satisfactory terms for a possible exit/data migration from the cloud service. Businesses are often met with "take it or leave it" terms from Cloud Service Providers, leaving them little room to protect their interests.

Problem 3: Lack of trust

Security is a common driver behind data localisation requirements and can sometimes lead to an extensive use of what may be legitimately considered as falling under national security[57]. The general perception tends to believe that 'data is safer if stored / processed locally' and "once data skips one boundary, it may skip 2 or 3".[58] In other words, "location is seen by

[54] Article 20 of the General Data Protection Regulation gives data subjects a right to port their personal data. It allows for them to receive the personal data that they have provided to a controller, in a structured, commonly used and machine-readable format, and to transmit those data to another data controller.
[55] The proposal for a Directive on the supply of digital content envisages a right for consumers to retrieve non-personal data from professional suppliers in certain circumstances.
[56] Article 48 of the French Loi Lemaire (entitled "Récupération et portabilité des données") states that consumers shall have a right to portability of their data.
[57] TimeLex Study (SMART 2015/0054).
[58] LE Europe Study (SMART 2015/0016).

many market participants as a proxy for substantial assurances in terms of data access, privacy, audit, data integrity and law enforcement, despite the fact that technical security is not enhanced by local data storage".[59]

Driver 5: Data availability for regulators / compliance concerns

Some restrictions originate from a lack of trust of regulatory or supervisory authorities vis-à-vis cross-border storage of data, in particular vis-à-vis foreign market participants that could deny to the authority the access it needs to audit or control.

This is confirmed by the evidence gathered[60]. For example, in the area of **taxation**, German legislation applicable to all natural and legal persons requires them to keep "the records required for tax declaration within Germany"[61], and companies operating in foreign markets need approval for electronic storage outside the country. Some other accounting laws were identified as requiring that a copy of accounting records is kept locally even if stored electronically.[62]

Similarly, in regulation of **gambling**, Bulgarian and Romanian legislation impose restrictions, such as a requirement that all data relating to gambling offering be stored within national borders.[63]

In the **financial sector**, a number of provisions (e.g. on onsite audit/inspection mechanisms for national supervisors) have also been identified as data localisation restrictions.[64] For instance, in Spain, "the banks are obliged to provide a detailed plan of any outsourcing (if core activities are affected) to the Bank of Spain and ensure that in such a case the service provider/s will allow to the Bank of Spain the access to their facilities and systems, just as before the outsourcing."[65] This arguably makes more difficult the use of data storage and processing service providers located abroad.

The challenge of trust as well as jurisdictional and law enforcement issues were also raised during the Structured Dialogues with the Member States.[66]

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[59] LE Europe Study (SMART 2015/0016).
[60] TimeLex Study (SMART 2015/0054).
[61] TimeLex Study (SMART 2015/0054) at p. 43 referring to Procedural rules for accounting and records, § 146 AO and § 147 (federal legislation)..
[62] Annex 6.
[63] TimeLex Study (SMART 2015/0054) at p. 56 citing Gambling Act, promulgated, State Gazette, No. 26/30.03.2012, lastly amended and supplemented, SG No. 1/3.01.2014, effective 1.01.2014, article 6(4); the study also refers to the Romanian Government Decision no.111/2016 approving the Norms of application of 24 February 2016 on gambling, articles 127 and 136.
[64] TimeLex Study (SMART 2015/0054) at p..20-25 and p.57 and footnote 10, citing for: Austria, Federal Act on the Supervision of Securities, art. 25-26, specified by Regulation Auslagerungsverordnung, BGBI. II Nr. 215/2007, latest amendment BGBI. II Nr. 272/2011; Belgium: Circular PPB 2004/5 on healthy management practices in outsourcing by credit institutions and investment companies issued by the Belgian Banking, Finance and Insurance Commission on 22 June 2004; Ireland: Central Bank UCITS Notice, October 2013, Annex II and NL: Circular Cloud Computing 2011/643815 issued by the Dutch Central Bank on 6 December 2011; Portugal: Regulation of the Bank of Portugal implementing Article 39(1) of Law No 25/2008 of 5 June and Article 5 Law No 25/2008 of 5 June, lastly amended by Law No 118/2015 of 31 August.
[65] LE Europe Study (SMART 2015/0016) at p. 16, referring to Spanish law 10/2014, of 26 of June, about ordination, supervision and solvency of credit entities. (BDE of 28 of June).
[66] Specifically, Workshop held on 23 February 2017.

It is to note, however, that if the data is stored in another Member State's territory, it can still be readily available for inspection electronically,[67] as exemplified by the amendment to the Danish Bookkeeping Act 2015.

Example: Denmark now allows accounting records in electronic format to be stored anywhere without prior application or notification to the public authorities, subject to the requirement on the business to provide online access to the records held abroad at any time.[68] Denmark explained at the High level conference on Building a Data Economy on 17 October 2016 that this legislative change solved the issue of having more than 1000 requests for exemptions per year and that they did not notice an increase in fraud.

In that regard a submission to **the REFIT Platform** from the Royal Norwegian Ministry of Trade, Industries and Fisheries (April 2017) states that as long as enforcement bodies have sufficient access to documentation, it should make no difference if a business keeps paper documents stored in a cabinet in their headquarter office in one European Member State, or chooses to store the same documents electronically with a service provider with servers located in another EU Member State.

Also business stakeholders are of the view that "the supervision (right to audit) must not block the development, adoption of new technologies."[69]

A potential challenge for national authorities would arise **if the private actor subject to regulation does not comply with its commitment to provide access for regulatory control purposes**, and the data might be outside the jurisdiction of the Member State engaged in a regulatory activity (as territorial jurisdiction is largely based on the place where the data is stored[70]). In such cases, the Member State will have to resort to judicial cooperation mechanisms in civil and commercial matters or in criminal matters, or to administrative cooperation mechanism such as in the area of VAT or financial regulation, or seek the voluntary assistance of the data storage and processing service providers. Several prominent avenues for Member States to obtain assistance from public authorities in another Member State for the purpose of accessing data can be found in Annex 8.

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[67] See to that effect, TimLex Study (SMART 2015/0054) at p. 99: if data should be stored on a server in a specific Member State in order to ensure its accessibility to a national supervisor, then the formal data location requirements can be "recast into a functional accessibility requirement".

[68] Annex 2, point 2.5.

[69] Consultation workshop, "Facilitating cross border data flow in Europe - data location restrictions", 26 February 2015.

[70] "Technical Document: Measures to improve cross-border access to electronic evidence for criminal investigations following the Conclusions of the Council of the European Union on Improving Criminal Justice in Cyberspace": https://ec.europa.eu/home-affairs/sites/homeaffairs/files/docs/pages/20170522_technical_document_electronic_evidence_en.pdf at p. 30. Other connecting factors can also be determinative of jurisdiction, depending on the area of law: see T-CY Cloud Evidence Group, "Criminal Justice access to data in the cloud: challenges", T-CY(2015)10 at p.10-11. For example, for tax purposes, the location of the subsidiary doing business might determinative; in consumer protection, "the location of the consumer seems decisive". See also *Microsoft v United States*, in the Matter of a Warrant to Search a Certain E-Mail Account Controlled and Maintained by Microsoft Corporation, 2nd Circuit Court of Appeals, 14 July 2016. See also Anna-Maria Osula, "Transborder Access and Territorial Sovereignty", Computer Law and Security Review 31 (2015) 719 – 735 at 721; Christopher Kuner, "Data Protection Law and International Jurisdiction on the Internet" (Part 2), International Journal of Law and Information Technology (2010) 18 (3): 227-247 at p. 232.

For example, in criminal matters, the European Investigation Order Directive (EIO)[71] allows for the issuance of an EIO, *i.e.* "a judicial decision which has been issued or validated by a judicial authority of a Member State to have one or several specific investigative measure(s) carried out in another Member State to obtain evidence."[72] Member States have the obligation to "execute an EIO on the basis of the principle of mutual recognition". Following the 9 June 2016 Council Conclusions on improving criminal justice in cyber-space[73] and the subsequent mandate given to the Commission by the Justice and Home Affairs Council on 8 June 2017[74], a legislative initiative on cross-border access to electronic evidence for criminal investigations by law enforcement authorities is now being considered and developed[75] in two key respects: direct cooperation with Service Providers and direct access to electronic evidence stored remotely. Further, practical measures are considered, such as streamlining of procedures of Service Providers when responding to access requests.

Similarly, in the area of VAT monitoring, Council Regulation (EU) 904/2010 of 7 October 2010,[76] allows cooperation and exchange of "any information that may help to effect a correct assessment of VAT, monitor the correct application of VAT, particularly on intra-Community transactions, and combat VAT fraud."[77] Such exchanges can take place on request,[78] where requests can be refused on specific grounds defined in the Regulation.[79]

The number of potential actors in a given business – public authorities' interaction, the specific scopes in relation to type of information, and the delays associated with judicial cooperation procedures[80],are likely causes of Member States' distrust and reluctance to let data flow out of their borders.

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[71] Directive 2014/41/EU of the European Parliament and of the Council of 3 April 2014 regarding the European Investigation Order in criminal matters [2014] OJ L 130/1 ("EIO Directive").

[72] EIO Directive, Article 1(1). Further, "EIO may also be issued for obtaining evidence that is already in the possession of the competent authorities of the executing State."

[73] https://ec.europa.eu/home-affairs/sites/homeaffairs/files/what-we-do/policies/organized-crime-and-human-trafficking/council_conclusions_on_improving_criminal_justice_in_cyberspace_en.pdf

[74] http://www.consilium.europa.eu/en/meetings/jha/2017/06/08-09/

[75] "Technical Document: Measures to improve cross-border access to electronic evidence for criminal investigations following the Conclusions of the Council of the European Union on Improving Criminal Justice in Cyberspace" : https://ec.europa.eu/home-affairs/sites/homeaffairs/files/docs/pages/20170522_technical_document_electronic_evidence_en.pdf; "Non-paper from the Commission Services" : https://ec.europa.eu/home-affairs/sites/homeaffairs/files/docs/pages/20170522_non-paper_electronic_evidence_en.pdf

[76] OJ L268 of 12/10/2010, p.1

[77] Council Regulation (EU) 904/2010 of 7 October 2010, OJ L268 of 12/10/2010, p.1 (the "VAT Cooperation Regulation") at Article 1.

[78] VAT Cooperation Regulation at Article 7, where under Art. 7(2) " For the purpose of forwarding the information referred to in paragraph 1, the requested authority shall arrange for the conduct of any administrative enquiries necessary to obtain such information."

[79] VAT Cooperation Regulation at Article 7(4) and Article 54. The requests are submitted in standard forms and information must be provided to the requesting Member State "as quickly as possible and no later than three months following data of receipt of the request." (VAT Cooperation Regulation at Article 10).

[80] Regarding time delays in mutual assistance in criminal matters, see among others, Cybercrime Convention Committee (T-CY), "T-CY assessment report: The mutual legal assistance provisions of the Budapest Convention on Cybercrime", T-CY(2013)17rev, December 2014, available at : https://rm.coe.int/16802e726c; and the Evidence Project, Deliverable D3.1 Overview of existing legal framework in the EU Member States, Collaborative Project EVIDENCE "European Informatics Data Exchange Framework for Courts and Evidence", FP7-SEC-2013.1.4-2. ; See also CCNum, "La levée des obligations de localisation de données" at p 1: "S'il existe bien des mécanismes de coopération pour faciliter l'accès aux données à travers les frontières, il n'en

In addition, it appears[81] that Member State national laws do not contain rules specific to situations where the physical data storage location is unknown.[82] In the context of the Expert Consultation of the e-Evidence Task Force, national and EU experts observed that the situation of undeterminable data location makes it unclear "which country might be affected [or] who is the addressee of a cooperation request".[83]

Another motivation behind some data localisation measures is to keep data out of other jurisdictions and limit the access of other governments to specific types of data. Those restrictions reflect intertwined concerns to protect the confidentiality of certain types of data, to control access to such data and to oversee legal proceedings in case of unauthorised access (in particular, to citizens' data, national sensitive data, privileged information and industrial secrets).

Market players (users of data services) also display a degree of lack of trust in cross-border storage of data: 15.3% of (104) respondents indicated "law enforcement concerns" as the reason they do not choose services involving data storage abroad.

One reason for this is lack of clear guidance on the part of regulators. ENISA observes that guidance from regulators is not always available in its Report on "Secure Use of Cloud Computing in the Finance Sector" (December 2015): "respondents have described various cases in which the need to notify NFSAs about the adoption of cloud based services has caused severe delays, or even blocked the prospective use of cloud services in their FIs. This on one hand is because information was not provided by the CSPs, but on the other hand also due to lack of guidance from the NFSAs on what specific information to be provided."

Driver 6: Cyber security concerns, comparability of security levels

Many respondents to the public consultation and position papers received by the Commission[84] highlighted the discrepancy between the frequently held view that data is more secure when kept on-site and the fact that (cloud) data storage and processing service providers are often much better equipped in terms of security systems. Therefore, these respondents state that data is actually more secure when stored in the cloud.

The technical benefits of cloud computing are numerous. There is no need for the user to put in place complex maintenance processes to upgrade its hardware and software whereas it can be handled more systematically, more quickly and with less disruption to the users. The European Union Agency for Network and Information Security (ENISA) analysed the

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demeure pas moins que la localisation des données en dehors des frontières nationales pourrait compliquer et ralentir l'exercice de tels contrôles voire favoriser la disparition de pièces et de preuves".

[81] The "Evidence Project", http://www.evidenceproject.eu/ .

[82] The "Evidence Project", D3.1 Overview of existing legal framework in the EU Member States, Collaborative Project EVIDENCE "European Informatics Data Exchange Framework for Courts and Evidence", FP7-SEC-2013.1.4-2 at 84.

[83] DG HOME, Report – Expert meeting on Access to Electronic Evidence, 17/18 January 2017, Brussels, available at: https://ec.europa.eu/home-affairs/sites/homeaffairs/files/e-library/documents/policies/organized-crime-and-human-trafficking/e-evidence/docs/e-evidence_report_17-18_january_2017_en.pdf.

[84] These position papers were received in the framework of the Public online consultation and accessible online via https://ec.europa.eu/digital-single-market/en/news/position-papers-received-framework-public-consultation-building-european-data-economy

security benefits and risks of cloud computing (compared to on-premises solutions)[85] and concluded that the concentration of resources and data may be 'a more attractive target to attackers' but the benefits of scale in cloud computing allow for higher security provisions. Protection of IT infrastructure against cybersecurity risk now requires very specific professional skills that most companies cannot afford. On the contrary, recruiting this expertise is at the heart of cloud service providers businesses, whose reputation is highly dependent on their capacity to maintain the security of their customers' data.

When the data and its processing are performed externally to a given company, it may indeed create a feeling of loss of control over what is being transferred. This feeling is shared by national authorities, consumers and businesses. The public consultation pointed out that these groups often demand that their IT-providers store or process their data locally. When asked about the reasons behind this, 65.6% of respondents attributed high importance to critical/confidential nature of data as a reason for not storing or processing their data in multiple locations within the EU.

In a survey[86], 30% of business respondents recognised they preferred that the data generated and used by their business is stored and processed inside the country they operate. Over 35% of the respondents see location as a proxy for security of data. A 2014 Eurostat survey confirms that "risk of a security breach" is an important factor limiting the use of cloud services[87].

It may therefore be concluded that concerns about the security of data when stored in a datacentre abroad remain. At the same time, storage or processing of data within a specific geographical area or on-premises would not prevent data from being the target of cyberattacks and from the need to implement technical and organisational security measures (e.g. encryption, physical access control, data access management, disaster recovery plan, audit) to bring down the risk to an acceptable level and to implement incident management procedures. In addition, when data storage and processing services are contracted by users, security levels are important competitive criteria proposed by the providers. A restricted market, induced by data localisation measures, may lead to offers with suboptimal level of security.

In most cases, the level of security of data in electronic format does not depend on its storage location, but rather on **the security of the IT infrastructure,** the cybersecurity measures deployed in the IT systems and **the strength of the encryption techniques used**. The **WannaCry ransomware attack** of May 2017 is a recent example confirming this. This attack targeted computers running the Microsoft Windows operating system by encrypting data and demanding ransom payments in the Bitcoin electronic currency. The attack spread within a day to more than 230.000 computers in over 150 countries. However not every computer in those countries was affected, depending on whether users had upgraded their machine with the latest security patch. Therefore, the lack of trust still present in society is also an **awareness** problem.

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[85] ENISA, Report "Cloud Computing Risk Assessment", November 2009, available at https://www.enisa.europa.eu/activities/risk-management/files/deliverables/cloud-computing-risk-assessment

[86] LE Europe Study (SMART 2015/0016).

[87] Eurostat, "Factors limiting enterprises from using cloud computing services, by size class, EU-28", 2014 (% enterprises using the cloud); http://ec.europa.eu/eurostat/statistics-explained/index.php/Cloud_computing_-_statistics_on_the_use_by_enterprises

The NIS Directive 2016/1148 provides legal measures to boost the overall level of cybersecurity in the EU. Member States are required to be appropriately equipped, e.g. via a Computer Security Incident Response Team (CSIRT) and a competent national NIS authority. A cooperation group has been set up in order to support and facilitate strategic cooperation and the exchange of information among Member States. A CSIRT Network has also to be set up in order to promote swift and effective operational cooperation on specific cybersecurity incidents and sharing information about risks. Digital service providers, **including cloud computing services** and online marketplaces have also to comply with the security and notification requirements under the NIS Directive.

Also, accompanying the revision of the mandate of ENISA foreseen in September 2017, the European Commission may propose the establishment of a European Framework for ICT Security Certification and Labelling. Such a Framework would put in place the necessary conditions that allow the EU to further develop its capacities to conduct ICT security assessments across a wide area of ICT products, services and systems, including cloud services.

Trustworthiness of contracted or procured ICT systems is one of important features the buyers are considering. However, a simple claim that a data service is secure is often not enough to ensure user's trust in it. In a recent public consultation of the European Commission[88] almost 38% of respondents stated that the current ICT security certification schemes did not adequately support the needs of European industry (either suppliers or users of secured ICT solutions).

A number of **security certification schemes** for ICT products exist in the EU[89] but they are effective only in a few Member States and the use of existing schemes is not actively promoted. An ICT service provider might need to undergo several certification processes in order to provide reassurance on its service in different Member States. There is also a fundamental problem of comparability between the different existing cloud security labels in the market.[90] In addition, the number of cloud service providers adhering to one of these schemes remains very limited.[91]

While security evaluations are a very technical area, the ability to determine adequately and to attest independently whether a product, system or service meets specific security requirements lies at the heart of being able to trust the digital systems we rely on. Carrying out these evaluations in a harmonized way across the European single market would prevent innovation from being stifled or industry from being over-burdened, while providing recognizable trustworthy security marks for potential buyers and users.

[88] https://ec.europa.eu/digital-single-market/en/news/summary-report-public-consultation-contractual-ppp-cybersecurity-and-staff-working-document (2016)
[89] COM(2016)410, "Strengthening Europe's Cyber Resilience System and Fostering a Competitive and Innovative Cybersecurity Industry" and accompanying Staff Working Document, SWD(2016) 216.
[90] SMART 2015/0018, TimeLex, Spark, "Clarification of Applicable Legal Framework for Full, Co- or Self-Regulatory Actions in the Cloud Computing Sector" (Ongoing).
[91] Ibid.

Problem 4: Vendor lock-in

There is a clear tendency in the data storage / processing (cloud) market that once a business has chosen to contract with a cloud service provider, they stay with that provider. There are both technical and legal barriers to switch cloud services providers.

When asked in the public consultation[92] whether they had ever intended to switch cloud providers, nearly 72% of all respondents answered yes, and nearly half (45%) of these indicated to have experienced difficulties with doing so. This problem is larger for SMEs and start-ups: 56,8% of which have experienced such difficulties.

Driver 7: Technical issues: data formats, transfer modalities

The main concern for cloud services customers is how to move data to another cloud service provider or to their own premises at low cost, without risking lower service levels and with minimal disruption. Portability of data is of most concern for Software as a Service (SaaS)[93], Platforms as a Service (PaaS)[94] and certain Infrastructure as a Service (IaaS)[95] providers and customers. For these services the content, data schemas and storage format are under the control of the cloud service provider. For the other IaaS, the cloud service customer has greater control of the technical modalities, potentially reducing their problems with portability.

The lack of interoperability of **data formats** is an important barrier to data portability in the cloud context. This forces cloud users to re-process and reformat their data before moving it from one cloud service to another. In order to be able to successfully port data, cloud users need better knowledge of the formatting being applied to the data, as well as an understanding of how data are organized in the cloud service (i.e. data schema/model, semantics/meaning of the data, access of datasets to the underlying infrastructure, business logic between data, etc.). Without such knowledge it is very difficult to prepare for the migration of data sets. Many cloud services providers are not transparent about their set-up.

There is also an issue with the **transfer modalities** for data sets in the cloud. Many cloud users experience difficulties in terms of time allotted for the acquisition and transfer of data. The internet bandwidth needed to transfer large amounts of data is considerable, and networks have physical limitations in terms of the volume and speed of the traffic they can handle. Also, bandwidth costs money. There may also be differences between the cloud vendors in the data transfer connectivity speeds they use, and the network reliability itself could cause issues.

[92] [Reference to POC synopsis report here once published]
[93] Cloud service category in which the cloud service customer can use the **cloud service provider's** applications (ISO/IEC 17788). See also Annex 9 for common definitions and examples.
[94] Cloud service category in which the cloud service customer can deploy, manage and run customer-created or customer-acquired applications using one or more programming languages and one or more execution environments supported by the cloud service provider (ISO/IEC 17788). Also Annex 9.
[95] Cloud service category in which in which the cloud service customer can provision and use processing, storage or networking resources (ISO/IEC 17788). Also Annex 9.

Driver 8: Different concepts of portability, lack of clear contractual rules and practices, inefficient use of standards

Portability generally refers to the ability to move, copy or transfer electronic data. The legal and practical implementation of portability varies according to the objective for porting and what exactly is to be ported. Consumer and data protection laws are two relevant examples.

Article 20 of the **General Data Protection Regulation (GDPR)** gives data subjects a right to port their personal data. It allows them to receive the personal data that they have provided to a controller, in a structured, commonly used and machine-readable format, and to transmit those data to another data controller. The purpose of this new right is to **empower the data subject** and give him/her more control over the personal data concerning him or her. Since it allows the direct transmission of personal data from one data controller to another, the right to data portability is also an important tool that will support the **free flow of personal data** in the EU and foster competition between controllers.

Consumers also benefit from a certain level of protection through existing general consumer legislation, and the proposal for a Directive on the supply of digital content envisages a right for consumers to retrieve non-personal data from professional suppliers in certain circumstances.

With the possible exception of the additional rights to portability included in article 48 of the recently adopted French Digital Republic Bill ("Loi Lemaire")[96], **existing laws generally do not provide portability rights for legal persons**. For business users of cloud services, portability is regulated by the contract with their cloud service provider(s). This means that business users of cloud services are themselves responsible for ensuring their interest in data portability is sufficiently protected in the contract they agree with the cloud service provider (e.g. including what data can be ported, price, data formats and time limits).

Switching of cloud service providers for business users entails the ability of users to move from one provider to another or benefit from different cloud services without data or applications being locked-in during the contract term or when their contract expires or is terminated. The ability to move data and applications between different systems and/or service providers is a key enabling factor for the freedom to choose and engage with suppliers, and to leverage their respective cloud services. To avoid confusion with the principle of data portability as introduced in the GDPR (which is a right relating only to data subjects), **this IA also uses term "switching"**, although this should be understood to include porting of data back to a user's own in-house IT resources**.**

In their response to the public consultation[97] hardly any of the business respondents claiming to offer data portability to their customers gave examples of the conditions posed. One possible reason could be that **conditions are rarely stated in contracts** with the customers. Judging from the results of a study on Switching between Cloud Services Providers[98], as well

[96] Article 48 of the French Loi Lemaire (entitled "Récupération et portabilité des données") states that consumers shall have a right to portability of their data. For what concerns personal data, the right shall be equal to that in the GDPR Article 20. The question is how, and to what extent the right will apply to non-personal data. French law also does not differentiate between professional and private 'consumers', as opposed to EU law, and may therefore in theory also be invoked by legal entities (including business users of platforms).
[97] [Reference to POC synopsis report here once published]
[98] IDC and Athur's Legal Study (SMART 2016/0032) Switching Between Cloud Services Providers.

as from workshops[99] and meetings the Commission has had with stakeholders, there is a widespread **lack of exit strategies in the contracts** between businesses and their cloud service providers.

This seems to be the case in the assessment, negotiation and update/termination phases of the contracting. Exit strategies are also often missing from the Service Level Agreements or Service Level Objectives that accompany cloud service contracts. In order to enable switching, these documents should specify e.g. the electronic format(s) for data transfer, the interface to be used, APIs, transport protocols, minimum speed/bandwidth rates of transfer.

Including exit strategies in cloud contracts is not mandatory, and cloud service providers mostly offer 'take it or leave it' terms to customers. Many of the larger business customers do not have problems with adapting to this, e.g. by bearing the cost of managing a migration process themselves. However, SMEs and small start-ups often do not have the resources, nor do they have sufficient negotiating power to protect their interest.

Cloud services are developed using building blocks with standard interfaces. **Standards** are the cornerstone of interoperability and portability of these building blocks, defining how cloud components work and guaranteeing security and speed. Standards should define the functionality and in many cases also the Quality of Service (QoS). However, different cloud service providers' specifications are often incompatible, as **providers have little incentive to facilitate easy transfer of data of their customers to competitors**.

It should be borne in mind that the complexity of cloud standards depends on the type of service. IaaS and PaaS standards can be defined using simple interfaces. SaaS standards are often not possible or at least require more complex interfaces. Each application is different and although clusters of applications may be interoperable, usually industry sectors do not collaborate. This is not necessarily due to a deliberate intention to lock-in. Application variations might well be necessary to respond to different customer requirements.

Consequences

This section assesses the consequences of the problems identified and described in the preceding sections. The consequences shown already occur at present and will persist if no policy action would be undertaken.

Consequence 1: Loss of growth and innovation potential

There is an inextricable causality between the take-up of new digital technologies and growth of business. The European Commission's Digital Economy and Society Index of 2017 identifies digital transformation as a core strategy for European businesses to enhance their efficiency, reduce costs and better engage customers and business partners[100]. To enable growth, therefore, the development and uptake of new technologies needs to be stimulated.

Those new digital technologies are increasingly dependent on data flows, which form the fundament of the most prominent disrupting technological paradigms of today: the Internet of

[99] EC Workshop on Switching between Cloud Services Providers, Brussels, 18 May 2017.
[100] DESI, 2017.

Things, data analytics and artificial intelligence. That is why obstacles to data mobility within the EU would mean barriers to economic growth and innovation.

The public consultation highlighted that most respondents identified the impact of data localisation restrictions as 'high' in general, but predominantly on the categories 'launching a new product or service', 'entering a new market' and 'providing a service to private entities'. These categories are all synonymous to growth and characterise an innovative economy.

An especially harmful element of data localisation in this respect is that small companies, such as start-ups are disproportionately affected by them. Outcomes of the public consultation emphasized the detrimental effects of duplication costs that these companies are confronted with because they need to process data in different Member States when they want to operate in the single market but across borders. Costs for running servers in multiple locations, for example, are recurrent instead of one-off, state 95,6% of respondents to the relevant section of the public consultation. These costs are easier to bear for larger companies, but make it impossible for immature start-ups and small SMEs to compete with their larger competitors. As crucial innovations are often introduced in the economy by start-ups, the distortions stemming from data localisation restrictions mean a loss of innovation and growth potential.

Data localisation does not only impose innovation problems for the ICT-industry but for all sectors, as they cannot benefit from product and service innovation[101] and are unable to pass on savings to their users.

The problem is also measurable, already today, in terms of cost of non-Europe, or foregone growth potential. Indeed, according to one study, "If existing data localising measures are removed, GDP gains are estimated to up to 8 billion euros per year (up to 0.06% of GDP), which is on par with the gains of recent free trade agreements (FTAs) concluded by the EU. These gains approximate the impact of a fully price-transparent "industrial" DSM".[102]

Innovative technologies affected

The majority of **big data analytics** platforms function through distributed architectures supporting applications for **machine learning and artificial intelligence** in all sectors. These technologies are migrating towards distributed models, with state-of-the-art database algorithms optimising[103] the distribution and use of data across servers in remote locations. In such applications, an imposed data location (not excluded in the current status quo by restrictions on tax data, for example), *de facto* **limits the participation** in the 'chain' for participants in specific locations.

[101] J. Force Hill finds data free flow policies as limiting data flows and competition between firms. Over time, these policies will raise costs, retard technological innovation and the internet's 'generativity'. The author examined data localization policies and found that these policies are distorting trade and undermining human rights. See Jonah Force Hill, "The Growth of Data localization Post-Snowden: Analysis and Recommendations for U.S. Policymakers and Industry Leaders", Lawfare Research Paper Series, 2014, available at: https://lawfare.s3-us-west-2.amazonaws.com/staging/Lawfare-Research-Paper-Series-Vol2No3.pdf

[102] European Commission, DESI, 2017

[103] E.g. The Spanner database architecture used by Google for its advertising applications brings a globally-distributed and fully synchronously replicated database, where data is automatically redistributed across servers and across data centres to balance load, to mitigate latency and availability of data and to prevent damage through a span of incidents, including natural disasters. Such technological solutions bring resilience in data storage and processing, by amortising risks over distributed machines and locations.

Applications relying on the **Internet of Things** could suffer from legal uncertainties or blockages brought by data localisation. With an explosion in the number of connected objects in a variety of application areas – connected cars, manufacturing, energy, oil extraction, etc. – data generated by the Internet of Things is geographically distributed by design.

Cloud computing services are also affected. As this particular problem poses particular spin-off problems to the rest of the economy, this will be discussed at more length in the next section.

Consequence 2: Loss of operational efficiency

Legal uncertainty and lack of trust caused by (perceived) data localisation restrictions, combined with vendor lock-in concerns, restrain cloud adoption. This leads to a loss of operational efficiency for the wider economy. A study estimated that all companies can cut their overall IT-expenditure with 20% to 50% by migrating services to the cloud.[104] However, only 29% of larger EU companies see themselves as ready for these technologies while more than 50% say they are not. For the SMEs the picture is worse, only 6% of SMEs have adopted big data technologies and only one out of every five enterprises in the EU use cloud services.

This means that there is still a large potential for gaining efficiency, as data storage and processing services such as cloud computing can support especially small businesses across sectors in reducing their infrastructure investment to virtually no initial cost and transform substantial fixed costs into affordable variable costs (i.e. subscriptions to data services). Moreover, such services allow them to be active on the global market through the internet. However, data localisation measures limit the access of businesses to global cloud services, driving up prices and curbing the quality of services offered on the single market.

As respondents mention in the public online consultation, data localisation restrictions inhibit international competition in cloud services, which in turn diminishes the impetus to lower prices and improve services. This raises costs and reduces opportunities for both small and large companies that rely on these services. A less competitive cloud market drives up costs for businesses even further when they have to invest in data storage in multiple countries. That inflates their own prices, stifles product innovation and makes it costlier to enter new markets. The overall effect is a less competitive and less innovative economy with inflated prices and diminished choices for consumers.

Cost

The cost of storing data varies between EU Member States. There is an average difference of 120% from the cheapest to the most expensive[105], which is more than doubling the cost. However, two thirds of the ICT-related demands are still sourced locally, also where prices are highest. These extra costs result comparatively bigger for SMEs, accounting for nearly 60% of European GDP and 65% of European employment. Therefore, increasing their efficiency would have a wide impact on the economy.

[104] Deloitte Study (SMART 2014/0031)
[105] ECIPE, Policy Brief "Unleashing Internal Data Flows in the EU: An Economic Assessment of Data Localisation Measures in the EU Member States", December 2016

Consequence 3: Inefficiencies in the data centres sector

Data localisation restrictions can lead to inefficiencies in the allocation of data centres, as cloud service providers would be inclined to deploy data centres in Member States with large markets where localisation restrictions are in place. Topographically, however, such larger markets are often suboptimal places to deploy data centres in terms of costs or environmental footprint.

As an example, private estimations[106] show that it can cost up to 120% more to build a data centre in some European locations compared to others because of higher land, labour and operating costs. Examples of the latter are higher energy prices, or increased energy consumption to maintain efficient operating temperatures when located in warmer European regions. In the most 'expensive' EU Member State the cost of operating a data centre is twice as high as in the 'cheapest' Member State.

In addition, the choice of location for a data centre depends on a variety of conditions, and risk-indexes used by industry include risk of natural disasters, cost of compliance with administrative requirements, energy costs, average temperature, proximity of skilled workforce, ease of doing business, political stability etc.[107] These criteria converge to a business decision on the placement of a data centre, and the current overemphasis on one of them – e.g. legal and administrative requirements for data localisation – can overthrow other criteria – e.g. energy costs or environmental considerations.

Consequence 4: Market distortions

An analysis of the data processing service market in Europe points to difficulties for European players to scale up and be competitive on the European market. More than 50% of revenues from public cloud services in Europe are collected by the largest seven cloud service providers, whilst smaller players offer customised services at national level[108]. A study shows that historically, public cloud services were introduced in Europe by the large international players, mostly with headquarters based in the US, occupying 17 of the top 25 positions on the EU market.[109]

This problem of market distortion is caused partly by the existing restrictions on data mobility over geographical borders (data localisation restrictions) and over IT-systems (vendor lock-in), generating market distortions that are reflected in a number of barriers to use, choose and provide data storage as well as processing services within the EU.

First, the lack of trust and legal uncertainty affect the perception of reliable available suppliers and distort the rational purchase decisions. These market distortions cause misallocation of resources in the economy and affect supply and demand in the concerned market. The distortion leads to a cost increase due to the higher level of inefficiency in the upstream market.

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[106] ECIPE, Policy Brief "Unleashing Internal Data Flows in the EU: An Economic Assessment of Data Localisation Measures in the EU Member States", December 2016.
[107] Time.lex, Spark and Tech4i, "Cross-border Data Flow in the Digital Single Market: Study on Data Location Restrictions", D5. Final Report (SMART 2015/0054).
[108] Deloitte Study (SMART 2014/0031).
[109] (IDC, 2014)

Second, the ability to port data for switching providers has been identified as an issue that leads to market distortion by the public consultation. 43% of respondents to the public consultation in Austria and 38% of those in Spain indicated that they would be more likely to adopt public cloud if they were guaranteed data portability for switching providers.

The size of the consequences in terms of market distortions is likely to be large. The data market in the EU27 is estimated in 46 billion[110] Euros[111]. 37% of the data storage and processing service providers responding to the public consultation had experienced demands by their customers for local data storage or processing, mostly due to an assumption or perception that they are required to do so.

The rough estimation would be that the size of the supply that is affected by market distortions resulting from legal uncertainty responds to a demand of 17 billion Euros (37% of 46 billion). This figure is large enough to condition the competing options of the whole market and to have wider implications in terms of a less efficient single market for data based services.

[110] The word billion is used referring to the short scale, i.e., 1 Billion = 1 000 000 000
[111] IDC Study (SMART 2013/0063), Table 29.

ANNEX 6: DATA LOCALISATION MEASURES AND OBLIGATIONS PER MEMBER STATE

Member State	Source	Source type	Data type	Localisation Restriction	Specific Storage Requirement	Prior Authorisation/ Notification Requirement	Availability Requirement	Other Requirements	Source
AT	Gesundheitstelematikgesetz (GTelG 2012), BGBl. I Nr. 111/2012 (Federal Act on Data Security Measures when using personal electronic Health Data or Health Telematics Act 2012), § 6, 14 and 20	Legislation	Health data	Yes	Yes	Yes	No	Yes	SMART 2015/0054;
AT	Bundesgesetz über die Beaufsichtigung von Wertpapierdienstleistungen, BGBl. I Nr. 60/2007; Latest amendment: BGBl. I Nr. 117/2015; (Federal Act on the Supervision of Securities), Art. 25, 26; Specified by the Austrian national regulation Auslagerungsverordnung, BGBl. II Nr. 215/2007, latest amendment: BGBl. II Nr. 272/2011	Legislation	Financial data	Yes	Yes	No	Yes	No	SMART 2015/0054;

AT	Bundesgesetz über allgemeine Bestimmungen und das Verfahren für die von den Abgabenbehörden des Bundes, der Länder und Gemeinden verwalteten Abgaben (Bundesabgabenordnung - BAO), original version: BGBl. Nr. 194/1961, latest amendment: BGBl. I Nr. 163/2015 (Federal Act on the General Principles and Procedures for the Regulation of Taxation as administrated by the Federal Government, the State Governments and the Municipalities (Regulation of Taxation Code, BAO). Bundesgesetz über besondere zivilrechtliche Vorschriften für Unternehmen (Unternehmensgesetzbuch - UGB), Austrian Commercial Code, original version: dRGBl. S 219/1897, latest amendment: BGBl. I Nr. 163/2015.	Legislation	Tax, accounting, company data	No	No	No	Yes	No	SMART 2015/0054;
AT	Bundesgesetz über die Bundesrechenzentrum GmbH (BRZ GmbH), Federal Act on the Federal Computing Centre (BRZ); Original version: BGBl. Nr. 757/1996, Latest amendment: BGBl. I Nr. 71/2003. Bundesgesetz, mit dem IKT-Lösungen und IT-Verfahren bundesweit konsolidiert werden (IKT-Konsolidierungsgesetz – IKTKonG), Federal Act on the Consolidation of ICT Solutions and IT Processes (ICT Consolidation Act), Original version: BGBl. I Nr. 35/2012.	Legislation	Public and government data	Yes	No	Yes	No	No	SMART 2015/0054;

BE	Article 315 of the Income Tax Code	Legislation	Tax, accounting, company data	Yes	No	No	Yes	No	SMART 2015/0054; Public Consultation;
BE	Article 60, § 3 of the VAT Code and ; Circulaire AGFisc N° 14/2014 (n° E.T. 120.000) dd. 04.04.2014	Legislation in conjunction with administrative guideline	Tax, accounting, company data	Yes	Yes	No	Yes	No	Public Consultation;
BE	Circular PPB 2004/5 on healthy management practices in outsourcing by credit institutions and investment companies) ; Issued by the Belgian Banking, Finance and Insurance Commission on 22 June 2004	Administrative guideline	Financial data	No	Yes	Yes	Yes	No	SMART 2015/0054;
BE	(Law of 8 August 1983 regulating a National Register of natural persons), Articles 4 ter, 5, 8 § 1 and § 2 and Article 14.	Legislation	Public and government data	No	No	No	No	Yes	SMART 2015/0054;
BG	Gambling Act, Promulgated, State Gazette, No. 26/30.03.2012, lastly amended and supplemented, SG; No. 1/3.01.2014, effective 1.01.2014, article 6(4).;	Legislation	Tax, accounting, company data	Yes	No	No	No	No	SMART 2015/0054;
BG	Accounting Act (promulgated on 08 December 2015, in force as of 01 January 2016) (article 12), Value Added Tax Act (promulgated on 04 August 2006, last amendments in force as of 01 January 2016) (Articles 121 and 122), Tax and Social Insurance Procedure Code (promulgated on 29 December 2005, last amendments in force as of 15 April 2016) (Article 73);	Legislation	Tax, accounting, company data	No	Yes	No	Yes	No	SMART 2015/0054;

DE	(Muster-) Berufsordnung für die in Deutschland tätigen Ärztinnen und Ärzte (“MBO-Ä“); ((Model) Professional Code for doctors working in Germany.; Federal regulation in conjunction with recommendation of Kassenärztliche Bundesvereinigung (Federal Association of Physicians participating in the public health insurance system	Administrative guideline	Health data	No	Yes	No	Yes	Yes	SMART 2015/0054;
DE	Decision of the Federal CIO Council (No. 2015/5) (3a)	Administrative decision	Public and government data	Yes	Yes	Yes	No	No	Stakeholder Engagement;
DE	§ 146 and 147 II Tax Code (Abgabenordnung, AO).	Legislation	Tax, accounting, company data	Yes	No	Yes	Yes	No	SMART 2015/0054; SMART 2015/0016; Public Consultation;
DE	§ 14 b II Act on Value Added Tax (Umsatzsteuergesetz, UStG).	Legislation	Tax, accounting, company data	Yes	Yes	Yes	Yes	No	SMART 2015/0016; Public Consultation;
DE	§ 41 I Income Tax Act (Einkommensteuergesetz, EStG)	Legislation	Tax, accounting, company data	Yes	No	No	No	No	SMART 2015/0016; Public Consultation;
DE	§ 257 HGB (German commercial code)	Legislation	Tax, accounting, company data	Yes	Yes	No	Yes	No	SMART 2015/0054; SMART 2015/0016; Public Consultation;
DE	Article 7 AGPStG (Law on the implementation of the civil registry in Bavaria)	Legislation	Public and government data	Yes	No	No	No	No	SMART 2015/0016;

DE	§ 87 Subs 1 No. 6 BetrVG (Works Council Constitution Act)	Legislation	Tax, accounting, company data	No	No	No	No	Yes	SMART 2015/0016;
DE	sec. 80 SGB X (German Social Law Code Book 10)	Legislation	Public and government data	Yes	Yes	No	No	No	Stakeholder Engagement;
DE	sec. 35 German Banking Act	Legislation	Financial data	No	Yes	No	No	No	Stakeholder Engagement;
DE	§ 126 III Grundbuchordnung (real estate register)	Legislation	Public and government data	Yes	Yes	No	No	No	SMART 2015/0054;
DK	Audit Act (section 45)	Legislation	Public and government data	Yes	Yes	Yes	Yes	No	Stakeholder Engagement;
DK	Sammenskrevet udgave af persondataloven, Lov nr. 429 af 31. maj 2000 som ændret ved § 7 i lov nr. 280 af 25. april 2001, § 6 i lov nr. 552 af 24. juni 2005, § 2 i lov nr. 519 af 6. juni 2007, § 1 i lov nr. 188 af 18. marts 2009, § 2 i lov nr. 503 af 12. juni 2009, § 2 i lov nr. 422 af 10. maj 2011, § 1 i lov nr. 1245 af 18. december 2012 og § 1 i lov nr. 639 af 12. juni 2013; Act on Processing of Personal Data (law implementing the Data Protection Directive, section 41, nr 4).	Legislation	Public and government data	Yes	No	No	No	No	Danish Data Flow Report;
ES	Resolución 320/14546/13, de 23 de septiembre and implementing acts (Data held by contractors to the Ministry of Defence)	Legislation	Public and government data	No	Yes	No	No	Yes	SMART 2015/0016;

FR	Law n°80-538 dated 16 July 1980 ('French Blocking Statute') - Information which could adversely affect the sovereignty, security, public order or essential economic interests of France when used as evidence in foreign judicial or administrative proceedings or in relation thereto.	Legislation	Public and government data	Yes	No	No	No	No	SMART 2015/0016;
FR	Ministerial decree dated 30 November 2011 on the protection of the secrecy of national defense ('Defense Decree')	Legislation	Public and government data	No	No	No	No	Yes	SMART 2015/0016;
FR	Code du Patrimoine and Note d'information du 5 avril 2016 relative à l'informatique en nuage (cloud computing)	Legislation	Public and government data	Yes	Yes	No	No	No	SMART 2015/0016;
FR	Act number 2002-303 of 4th March 2002 ; and ; 1111-8 of the French Public Health Code	Legislation	Health data	No	No	Yes	No	No	SMART 2015/0016; Public Consultation;
FR	Secure Cloud certification/label ((Secure Cloud), defence data (Secure Cloud Plus))	Legislation	Public and government data	Yes	Yes	No	No	No	SMART 2015/0016;
HR	Law on the State Information Infrastructure, Official Gazette of Republic of Croatia no. 92/2014 passed on July 15, 2014 and Regulation on Organizational and Technical Standards for Connecting to the State Information Infrastructure, Official Gazette of Republic of Croatia no. 103/2015.;	Legislation	Public and government data	Yes	No	Yes	Yes	No	SMART 2015/0054;
HR	Croatian National Bank	Administrative decision	Financial data	Yes	No	No	No	No	Stakeholder Engagement;

HU	Act L of 2013 on Electronic Information Security of State and Municipal Bodies ("Information Security Act") adopted by the Hungarian Parliament with the effect of 25 April 2013. ; Act CLVII of 2010 on National Data Assets ("Data Assets Act"), adopted by the Hungarian Parliament with the effect of 22 December 2010;	Legislation	Public and government data	Yes	Yes	Yes	No	No	SMART 2015/0054;
IE	Notice from the Revenue Commissioners published in Iris Oifigiuil (Official Journal), 27 January 2012, drawn up in exercise of powers conferred on them by s.887 of the Taxes Consolidation Act 1997 (substituted by s.232 of the Finance Act 2001). (Regulatory Regulated Act);	Administrative guideline	Tax, accounting, company data	No	Yes	No	Yes	No	SMART 2015/0054;
LU	19 December 2002. - Law concerning the register of businesses and companies, and concerning accounting and annual accounts of companies, modifying certain other legal provisions; 23 January 2003. – Grand Ducal Regulation relating to the execution of the law of 19 December 2002 concerning the register of businesses and companies, and concerning accounting and annual accounts of companies	Legislation	Public and government data	Yes	Yes	No	No	No	SMART 2015/0054; SMART 2015/0016;

LU	Circular CSSF 12/552 on central administration, internal governance and risk management, as amended by Circulars CSSF 13/563 and CSSF 14/59, issued by the Luxembourg Supervisory Commission of the Financial Sector (Commission de Surveillance du Secteur Financier - CSSF), Section 5.2.3, Sub-section 7.4.2.1, Sub-section 7.4.2.3;	Administrative guideline	Financial data	No	Yes	Yes	No	No	SMART 2015/0054; SMART 2015/0016;
LU	Loi du 10 août 1915 concernant les sociétés commerciale Section IV, Paragraph 3, Art. 39; Section IV, Paragraph 6, Art. 73; Section XIV, Art. 267(1), ARt. 281 (1)b), 295(1), etc.	Legislation	Tax, accounting, company data	Yes	No	No	Yes	No	SMART 2015/0016;
NL	Ministerie van Binnenlandse Zaken en Koninkrijksrelaties - Kamerbrief over cloud computing; (Ministry of Internal Affairs and Kingdom Relationships – Chamber letter on cloud computing),; issued by the Minister of Internal Affairs and Kingdom Relationships, M. Donner, on 20 April 2011	Administrative guideline	Financial data	No	Yes	Yes	Yes	No	SMART 2015/0054;
NL	The Public Records Act 1995 (Archiefwet 1995), Public Records Decree 1995(Archiefbesluit 1995) and the Public Records Regulation 2009; (Archiefregeling 2009); Chamber letter on cloud computing, Issued by the Minister of Internal Affairs and Kingdom Relationships, M. Donner, on 20 April 2011	Legislation in conjunction with administrative guideline	Public and government data	Yes	Yes	Yes	No	No	SMART 2015/0054;
PT	(Article 4(1) of Decree-Law No 16/93) (as amended by Law No 14/94 of 11 May)	Legislation	Public and government data	No	Yes	Yes	No	No	SMART 2015/0054;

RO	Government Decision no. 111/2016 approving the Norms of application of 24 February 2016 on gambling, Articles 2, 127 and 136.;	Legislation	Tax, accounting, company data	Yes	Yes	Yes	Yes	No	SMART 2015/0054;
RO	Government Decision no. 585/2002 approving the national standards for the protection of classified information; Law no. 182/2002 on the protection of classified information; And Order issued by a public authority - the National Registry Office for Classified Information;	Legislation	Public and government data	No	Yes	Yes	No	No	SMART 2015/0054;
SI	1. Zakon o tajnih podatkih (Uradni list RS, št. 60/11) (IS); 2. Uredba o varovanju tajnih podatkov (Uradni list RS, št. 74/2005); 3. Uredba o varnostnem preverjanju in izdaji dovoljenj za dostop do tajnih podatkov (Uradni list RS, št. 71/06 in 138/06) ;	Legislation	Public and government data	Yes	Yes	Yes	No	No	SMART 2015/0054;
SI	Zakon o varstvu dokumentarnega in arhivskega gradiva ter arhivih (Uradni list RS, št. 30/2006) (IS);	Legislation	Public and government data	No	Yes	Yes	Yes	No	SMART 2015/0054;
UK	Regulator approach	Administrative practice	Health data	No	Yes	No	No	No	Public Consultation; Stakeholder Engagement;
UK	Companies Act 2006	Legislation	Tax, accounting, company data	Yes	No	No	Yes	No	SMART 2015/0016; Public Consultation; Stakeholder Engagement;

Annex 7: Applicability Assessment of Secondary EU Legislation

Relevant provisions	Uncertain applicability (out of 45 measures)	Potentially applicable (out of 45 measures)
Article 16 TFEU & Articles 1(1) and 1(3) of the GDPR "Free Movement of Personal Data"	7	0
Article 9(4) of the GDPR "Limitations to Free Movement of Personal Data"	3	0
Articles 1 and 2 of the E-Commerce Directive "Scope & Information Society Service"	25	8
Article 1(5) of the E-Commerce Directive "Exemptions"	5	8
Article 3 of the E-Commerce Directive Free Movement of Information Society Services	6	4
Article 3(3) and Annex of the E-Commerce Directive "Exempted fields"	0	0
Article 3(4) of the E-Commerce Directive "Conditions for justified restrictions"	4	4
Article 4 of the E-Commerce Directive "Principle excluding prior authorisation"	6	2
Articles 1 and 2 of the Services Directive "Scope"	5	28
Article 2(2) of the Services Directive "Exemptions"	21	9
Articles 16-18 of the Services Directive "Freedom to provide services"	7	3

Articles 9-13 of the Services Directive "Authorisation schemes"	3	2
Articles 14-15 of the Services Directive "Prohibited requirements"	6	0
Articles 19-21 of the Services Directive "Rights of recipients of services"	12	5
Article 1 of the Single Market Transparency Directive "Scope"	28	3
Article 1(2) and Annex of the Single Market Transparency Directive "Exemptions & Derogations"	12	0
Articles 4 and 5 of the Single Market Transparency Directive "Duty to Notify"	10	0
Public Procurement Directive "Principle of Non-Discrimination, Equal Treatment and Transparency"	14	0

ANNEX 8: EXISTING MECHANISMS FOR COOPERATION BETWEEN PUBLIC AUTHORITIES IN RELATION TO ACCESS TO DATA

1. Criminal Matters

For the purposes of examining cooperation in the area of criminal matters, extensive use has been made of the analyses developed by the Commission Services on cross-border access to electronic evidence for criminal investigations.[112] The overview of related measures developed by the research project the "Evidence Project"[113], funded by the European Commission, has also been consulted. This has been complemented by desk research on the Cyber Crime Convention, as well as on the European Investigation Order Directive.

Guidance from colleagues at DG Justice and DG Home has facilitated identification of mechanism in intelligence gathering, in the area of prevention of organized crime.

Mutual Assistance and the European Investigation Order Directive

The Directive regarding the European Investigation Order (EIO) in criminal matters, to have been transposed by 22 May 2017,[114] replaces the framework of cooperation for obtaining cross-border access to electronic evidence in the Convention on Mutual Assistance in Criminal Matters. The EIO Directive allows for the issuance of an EIO, *i.e.* "a judicial decision which has been issued or validated by a judicial authority of a Member State to have one or several specific investigative measure(s) carried out in another Member State to obtain evidence."[115] Member States have the obligation to "execute an EIO on the basis of the principle of mutual recognition".

To facilitate the cooperation among judicial authorities foreseen in the EIO Directive, certain practical improvements are being developed by the Commission. "Electronic user-friendly version of the form set out in Annex A of the EIO Directive to request the securing and obtaining of e-evidence" is being worked on by the Commission.[116] The Commission is also working on Council's request for "a secure platform for the online exchange of electronic evidence between EU judicial authorities".[117] It is expected that the platform should be functional towards summer of 2019.

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[112] See: https://ec.europa.eu/home-affairs/what-we-do/policies/organized-crime-and-human-trafficking/e-evidence_en

[113] http://www.evidenceproject.eu/.

[114] Directive 2014/41/EU of the European Parliament and of the Council of 3 April 2014 regarding the European Investigation Order in criminal matters.

[115] EIO Directive, Article 1(1). Further, "EIO may also be issued for obtaining evidence that is already in the possession of the competent authorities of the executing State."

[116] Technical Document: Measures to improve cross-border access to electronic evidence for criminal investigations following the Conclusions of the Council of the European Union on Improving Criminal Justice in Cyberspace at p. 14, available at: https://ec.europa.eu/home-affairs/sites/homeaffairs/files/docs/pages/20170522_technical_document_electronic_evidence_en.pdf;

[117] Technical Document: Measures to improve cross-border access to electronic evidence for criminal investigations following the Conclusions of the Council of the European Union on Improving Criminal Justice in Cyberspace at p. 15.

Following the 9 June 2016 Council Conclusions on improving criminal justice in cyber-space[118], and the subsequent mandate given to the Commission by the Justice and Home Affairs Council on 8 June 2017[119], a legislative initiative on cross-border access to electronic evidence by law enforcement authorities for criminal investigations is now being considered and developed by the Commission Services[120] in two key respects: direct cooperation with Service Providers (creating a framework for production requests or production orders directed at Service Providers) and direct access to electronic evidence stored remotely. Further, practical measures could be implemented, such as streamlining of providers' procedures when responding to access requests.

The Fourth Anti-Money-Laundering Directive

The fourth Anti-Money Laundering Directive[121] provides for "exchange of information or the provision of assistance between EU Financial Intelligence Units (FIUs)."Pursuant to Article 53(1), "Member States shall ensure that FIUs exchange, spontaneously or upon request, any information that may be relevant for the processing or analysis of information by the FIU related to money laundering or terrorist financing and the natural or legal person involved, even if the type of predicate offences that may be involved is not identified at the time of the exchange." The use of such information thus obtained is limited to "the accomplishment of the FIU's tasks as laid down in this Directive." (Art. 54). Further, "when exchanging information and documents [pursuant to the Directive], the transmitting FIU may impose restrictions and conditions for the use of that information", with which the receiving FIU must comply.

2. Taxation

The following overview of Member States' cooperation in the area of VAT monitoring was produced jointly with colleagues from TAXUD.

Council Regulation (EU) 904/2010 of 7 October 2010,[122] allows cooperation and exchange of "any information that may help to effect a correct assessment of VAT, monitor the correct application of VAT, particularly on intra-Community transactions, and combat VAT fraud"[123]

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[118] https://ec.europa.eu/home-affairs/sites/homeaffairs/files/what-we-do/policies/organized-crime-and-human-trafficking/council_conclusions_on_improving_criminal_justice_in_cyberspace_en.pdf

[119] http://www.consilium.europa.eu/en/meetings/jha/2017/06/08-09/

[120] Technical Document: Measures to improve cross-border access to electronic evidence for criminal investigations following the Conclusions of the Council of the European Union on Improving Criminal Justice in Cyberspace : https://ec.europa.eu/home-affairs/sites/homeaffairs/files/docs/pages/20170522_technical_document_electronic_evidence_en.pdf; Non – paper; Non-paper from the Commission Services: https://ec.europa.eu/home-affairs/sites/homeaffairs/files/docs/pages/20170522_non-paper_electronic_evidence_en.pdf

[121] Directive (EU) 2015/849 of the European Parliament and of The Council of 20 May 2015 on The Prevention of The Use of The Financial System For The Purposes of Money Laundering or Terrorist Financing, Amending Regulation (EU) No 648/2012 Of The European Parliament and of the Council, and repealing Directive 2005/60/EC of the European Parliament and of the Council and Commission Directive 2006/70/EC http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32015L0849

[122] OJ L268 of 12/10/2010, p.1

[123] Council Regulation (EU) 904/2010 of 7 October 2010, OJ L268 of 12/10/2010, p.1 [hereinafter the "VAT Cooperation Regulation"] at Article 1; European Court of Auditors, Special Report No. 24 "Tackling intra-Community VAT fraud : More action needed", December 2015.

Such exchanges can take place on request,[124] where requests can be refused on specific grounds defined in the regulation,[125] are submitted in standard forms and information must be provided to the requesting Member State "as quickly as possible and no later than three months following data of receipt of the request."[126]

Automatic exchanges of information also take place pursuant to the VAT Cooperation Regulation, where the categories of information shared have been determined under Commission Implementing Regulation 79/2012.

Storage of certain VAT data by the Member States for exchange between Member States

The Regulation also imposes an obligation on Member States to store electronically specific categories of information (collected pursuant to the VAT Directive, *e.g.* cross-border transaction data (VAT ID-number and value of the transaction) declared in the recapitulative statement by the traders; data when the VAT ID-number becomes invalid)[127], without requiring storage of the invoices by the trader within the given Member State's territory. Each Member State must grant the competent authority of any other Member State access to this information[128]. Article 18 requires that the "information [be] made available for at least five years from the end of the first calendar year [in which] access is to be granted.", and that Member State adopt "the measures necessary to ensure that the data provided by taxable persons and non-taxable legal persons […] are, in their assessment, complete and accurate."

A VAT information exchange system (VIES) has been established for transferring data stored in the Member States databases between the competent authorities of the Member States.

The Regulation also provides for the possibility of competent authorities from one Member State to be present **in the offices of the administrative authorities**[129] of another Member State (or in "any other places where those authorities carry out their duties"), "by agreement", and "with a view to exchanging information" for VAT monitoring/application. Also "by agreement, one Member State's officials may be present "**during the administrative enquiries**" carried out in the territory of the requested Member State, and "Such administrative enquiries shall be carried out exclusively by the officials of the requested authority."[130] "The officials of the requesting authority shall not exercise the powers of inspection conferred on officials of the requested authority. They may, however, have access to the same premises and documents as the latter, through the intermediation of the officials of the requested authority and for the sole purpose of carrying out the administrative enquiry".

Member States may also agree to conduct **simultaneous controls**, "whenever they consider such controls to be more effective than controls carried out by only one Member State."[131] For that purpose an expert group – the MLC (multilateral controls) Platform - has been set

[124] VAT Cooperation Regulation at Article 7, where under Art. 7(2) " For the purpose of forwarding the information referred to in paragraph 1, the requested authority shall arrange for the conduct of any administrative enquiries necessary to obtain such information."
[125] VAT Cooperation Regulation at Article 7(4) and Article 54.
[126] VAT Cooperation Regulation at Article 10.
[127] VAT Cooperation Regulation at Article 17.
[128] VAT Cooperation Regulation at Article 21.
[129] VAT Cooperation Regulation, Article 28(1).
[130] VAT Cooperation Regulation, Article 28(2).
[131] VAT Cooperation Regulation, Article 29(1).

up. In practice, simultaneous controls are carried out in relation to cross border transactions, i.e. transactions between different traders located in different Member States (an example is the so-called VAT-carousel fraud).

Storage of invoices by the taxable person

This obligation is set out in the VAT Directive 2006/112/EC[132]. Invoices can be stored in a Member State other than where VAT is due provided the taxable person makes the invoices or information contained therein available to the competent authorities without undue delay whenever they so request (Article 245 of VAT Directive). Member States can forbid this if the country where invoices are stored is a third country with which no agreement on administrative cooperation exists.

Article 249 further specifies that in case there are electronic invoices, the competent authorities of both the Member State of establishment and the Member State where the VAT is due shall have the right to access, download and use those invoices.

Example: If a taxable person located in Member State A stores the data relevant to VAT compliance, in a data centre (own premises or third party premises) located in another Member State B, and must make this data available for control purposes in his Member State, several options are possible:

- First, the tax administration of Member State A can request the taxable person to make the data available in the premises located in Member State A or in the premises of the tax administration. [Note: Under Article 249 VAT Directive, in case taxable person stores invoices electronically, the competent authorities of both the Member State of establishment and the Member State where the VAT is due shall have the right to access, download and use those invoices.]

- Second, the tax administration of Member State A goes to the premises of the taxable person in the other Member State B (if the company agrees with this approach), but in this case they have to follow the rules on administrative cooperation (send out request for presence in the administrative enquiry, in order to inform the other tax administration).[133]

- Third, the tax administration authorities in Member State A can request, on the basis of the administrative cooperation rules, an administrative enquiry conducted by Member State B.

In the Report from the Commission to the Council and the European Parliament on the Application of Council Regulation (EU) no 904/2010 concerning administrative cooperation and combating fraud in the field of value added tax,[134] the Commission contemplated the mechanism of joint audits (where Germany and the Netherlands had launched a pilot bilateral project) and an assessment of such an option is underway.

The following overview of administrative cooperation in the area of direct taxation is the product of desk research and helpful exchanges with colleagues in DG TAXUD.

[132] Council Directive 2006/112/EC of 28 November 2006 on the common system of value added tax, OJ L 347, 11.12.2006, pp. 1–118.

[133] The proposed recast of the VAT Cooperation Regulation considers the option to allow authorities of Member State A to carry out controls without the presence of authorities from Member State B.

[134] COM/2014/071 final, available at: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2014:0071:FIN "The OECD describes a joint audit as two or more countries joining together to form a single audit team to examine an issue(s) / transaction(s) of one or more related taxable persons (both legal entities and individuals) with cross-border business activities, perhaps including cross-border transactions involving related affiliated companies organized in the participating countries, and in which the countries have a common or complementary interest; where the taxpayer jointly makes presentations and shares information with the countries, and the team includes Competent Authority representatives from each country[10]."

In the area of direct taxation, Council Directive 2011/16/EU has provided for three types of exchange of information between Member State tax administrations: exchange upon request; mandatory automatic exchange;[135] and spontaneous exchanges, whereby a Member State authority must communicate information in certain cases, where another Member State is concerned.[136] The automatic sharing of information (usually in electronic form[137]) applies to income data (including five non-financial categories of income and capital) and to "interest, dividends and similar type of income, gross proceeds from the sale of financial assets and other income, and account balances". Financial account information and cross-border tax rulings/advance pricing arrangements must now also be automatically exchanged between Member States.[138]

The Directive also envisages administrative cooperation in the form of presence of officials of the Member State which has made a request for information to be present in the offices of the tax authorities of the requested Member State, or to be present during administrative enquiries carried out by the requested Member State.[139]

Under the recent "country-by-country reporting" amendment,[140] Member States in which a large multi-national entity[141] is resident for tax purposes, must distribute a country-by-country report, concerning latter entity. Such report must include "information for every tax jurisdiction in which the MNE group does business on the amount of revenue, the profit (loss) before income tax, the income tax paid and accrued, the number of employees, the stated capital, the retained earnings and the tangible assets."

"Compulsory social security contributions payable to the Member State (…) or to social security institutions established under public law" are notably out of scope of the Council Directive 2011/16/EU on direct taxation (Article 2). Under social security coordination rules, however, an Electronic Exchange of Social Security Information system) (EESSI) will be made available in July 2017.[142] **The EESSI system** will enable "all communication between national institutions on cross-border social security files": "social security institutions will exchange structured electronic documents and follow commonly agreed procedures. These documents will be routed through EESSI to the correct destination in another Member State."

3. Financial Sector Mechanisms

The following information exchange provisions have been referred to in an overview of sectorial regulatory instruments provided by DG FISMA.

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[135] "Automatic exchange consists of the automatic provision of information by one country to another on income of residents of the second country," pursuant to specified timelines.
[136] The Council Directive 2011/16/EU at Article 9.
[137] http://ec.europa.eu/taxation_customs/business/tax-cooperation-control/administrative-cooperation/enhanced-administrative-cooperation-field-direct-taxation_en
[138] Council Directive (EU) 2015/2376 of 8 December 2015 amending Directive 2011/16/EU as regards mandatory automatic exchange of information in the field of taxation, http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2015.332.01.0001.01.ENG&toc=OJ:L:2015:332:FULL
[139] Council Directive 2011/16/EU, Chapter III, Articles 11 – 12; "Also provided for are simultaneous controls (audits), notifications to taxpayers of requests received from another MS, and sharing of best practices".
[140] Council Directive (EU) 2016/881 of 25 May 2016 amending Directive 2011/16/EU as regards mandatory automatic exchange of information in the field of taxation.
[141] This applies to MNEs with total consolidated revenue equal or higher than € 750.000.000.
[142] http://ec.europa.eu/social/main.jsp?catId=869&langId=en

Banking

The fourth Capital Requirements Directive or "CRD IV" (Directive 2013/36/EU)[143] provides for close collaboration between competent authorities of Member States, for supervision of institutions operating "in particular through a branch, in one or more Member States other than that in which their head offices are situated."[144] "Member States shall supply one another with all information concerning the management and ownership of such institutions that is likely to facilitate their supervision and the examination of the conditions for their authorization, and all information likely to facilitate the monitoring of institutions, in particular with regard to liquidity, solvency, deposit guarantee, the limiting of large exposures, other factors that may influence the systemic risk posed by the institution, administrative and accounting procedures and internal control mechanisms." Certain information on liquidity must be provided "immediately" by Member States.[145]

In addition, Article 117(1) stipulates an obligation of close cooperation: "The competent authorities shall cooperate closely with each other. They shall provide one another with any information which is essential or relevant for the exercise of the other authorities' supervisory tasks under this Directive and Regulation (EU) No 575/2013. In that regard, the competent authorities shall communicate on request all relevant information and shall communicate on their own initiative all essential information." Essential information includes "identification of the group's legal structure and the governance structure including organisational structure, covering all regulated entities, non-regulated entities, non-regulated subsidiaries and significant branches".

"Where a request for collaboration, in particular to exchange information, has been rejected or has not been acted upon within a reasonable time", the competent authorities may refer the case to the EBA.[146] Further, pursuant to Article 50(6), the "EBA shall develop draft regulatory technical standards to specify the information referred to in this Article.", and "Power is delegated to the Commission to adopt the regulatory technical standards referred to in the first subparagraph in accordance with Articles 10 to 14 of Regulation (EU) No 1093/2010."

With respect to the **permitted recipients of information** – the "competent authorities" - the CRD IV allows that the information so exchanged be shared between the competent authorities and a defined list of specified bodies, mostly, with a supervisory mandate in the financial sector.[147]

As for the free exchange of information within a group of companies, Article 124 requires Member States to "ensure that there are no legal impediments preventing the exchange, as between undertakings included within the scope of supervision on a consolidated basis, mixed-activity holding companies and their subsidiaries, or subsidiaries as referred to in Article 119(3), of any information which would be relevant for the purposes of supervision in accordance with Article 110 and Chapter 3."

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[143] Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC ("**CRD IV**").
[144] CRD IV at Article 50.
[145] CRD IV at Articles 50(2) and 50(3).
[146] CRD IV at Articles 50(5).
[147] CRD IV at Article 56.

Outsourcing requirements are not specifically addressed in CRD IV, although outsourcing is considered subject to prudent management and internal governance requirements (*e.g.* Article 74 CRD IV). Regulators' guidelines address this issue more specifically: the CEBS Outsourcing Guidelines from 2006 (para. 8) recommend a right for a supervisor to conduct on-site inspections at the premises of the service provider. Referring to this provision, the EBA's Draft Recommendations on Outsourcing to Cloud Service Providers[148] (currently under a consultation process) state that the outsourcing agreement should provide for supervisory authorities' right of access (to the cloud service provider's premises, "including in the full range of devices, systems, networks and data used for providing the services to the outsourcing institution") and right of audit ("unrestricted rights of inspection and auditing of the outsourcing institution's data") (para. 10).

Further, if a bank stores its data in another entity belong to the same banking group (subsidiary or branch), or even using the storage services of another licenced bank, in another Member State, the access for the home/host supervisors should be either automatic in accordance with their regulatory rights, or obtained via the cooperation obligations under Article 56 of CRD IV. [149]

In the example the data of the bank (subject to a supervisory authority in Member State A), is stored in another private entity outside the banking group (service provider not subject to CRD IV/banking regulation), in Member State B (*e.g.* under an outsourcing agreement). The service provider, not being a licensed entity, is not subject to CRD IV and Member State B banking supervisory authorities do not have any authority over this service provider (*at least not under the EU Directive CRD IV; they could have authority on another legal basis*). The information-sharing provisions in CRD IV only apply between competent authorities, not *governments*, and in this case, under CRD IV only, there is no competent authority in Member State B to cooperate with the banking supervisor in Member State A.

In latter scenario, pursuant to the CEBS Guidelines, access for supervisor should be ensured under outsourcing agreement concluded between bank and the service provider. Not enabling access for the supervisor would be a violation of CRD IV by the outsourcing bank.

Asset Management

Various fund frameworks contain rules for exchange of information between supervisors. This information is subject to confidentiality and professional secrecy obligations.

[148] EBA, Consultation Paper on the Draft Recommendations on Outsourcing to Cloud Service Providers under Article 16 of Regulation (EU) No 1093/2010, EBA/CP/2017/06, 17 May 2017, available at: https://www.eba.europa.eu/documents/10180/1848359/Draft+Recommendation+on+outsourcing+to+Cloud+Service++%28EBA-CP-2017-06%29.pdf

[149] Article 56 CRD IV: "Article 53(1) and Article 54 shall not preclude the exchange of information between competent authorities within a Member State, between competent authorities in different Member States or between competent authorities and the following, in the discharge of their supervisory functions: (a) authorities entrusted with the public duty of supervising other financial sector entities and the authorities responsible for the supervision of financial markets; (b) authorities or bodies charged with responsibility for maintaining the stability of the financial system in Member States through the use of macroprudential rules; (c) reorganisation bodies or authorities aiming at protecting the stability of the financial system […].

For example, the **UCITS** Directive[150] in its Article 101(1) provides that "The competent authorities of the Member States shall cooperate with each other whenever necessary for the purpose of carrying out their duties under this Directive or of exercising their powers under this Directive or under national law." In addition, "competent authorities shall use their powers for the purpose of cooperation, even in cases where the conduct under investigation does not constitute an infringement of any regulation in force in their Member State."

Article 101(6) allows for investigation on the territory of a Member State, requested by the authorities of another Member State: "The competent authorities of one Member State may request the cooperation of the competent authorities of another Member State in a supervisory activity or for an on-the-spot verification or in an investigation on the territory of the latter within the framework of their powers pursuant to this Directive." In that case, the receiving authority shall: "(a) carry out the verification or investigation itself; (b) allow the requesting authority to carry out the verification or investigation; or (c) allow auditors or experts to carry out the verification or investigation."[151]

The latter type of cooperation may be refused "only where (a) such an investigation, on-the-spot verification or exchange of information might adversely affect the sovereignty, security or public policy of that Member State; (b) judicial proceedings have already been initiated in respect of the same persons and the same actions before the authorities of that Member State;

(c) final judgment in respect of the same persons and the same actions has already been delivered in that Member State.[152]

The Directive on Alternative Investment Fund Managers (the AIFM Directive) provides for the same type of cooperation by supervisory authorities and the same grounds for refusal.[153]

Capital Markets

The Market Abuse Regulation 596/2014 provides for an obligation on national competent authorities to cooperate with each other and with ESMA "where necessary for the purposes of the Regulation".[154] Also, they "shall render assistance to competent authorities of other Member States and ESMA. In particular, they shall exchange information without undue delay and cooperate in investigation, supervision and enforcement activities."[155]

[150] Directive 2009/65/EC of the European Parliament and of the Council of 13 July 2009 on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS Directive), http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:02009L0065-20140917&from=EN .
[151] In the first scenario (a), "the competent authority of the Member State which has requested cooperation may request that its own officials accompany the officials carrying out the verification or investigation" (Article 101(5) UCITS Directive).
[152] UCITS Directive, Article 101(6).
[153] Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers and amending Directives 2003/41/EC and 2009/65/EC and Regulations (EC) No 1060/2009 and (EU) No 1095/2010, http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32011L0061 at Article 54.
[154] Market Abuse Regulation at Article 25.
[155] Market Abuse Regulation at Article 25.

On-site investigations or inspections, "with a cross-border effect" are foreseen in the Market Abuse Regulation, Article 25(6). In such cases, "ESMA shall, if requested to do so by one of the competent authorities, coordinate the investigation or inspection." The authority recipient of such a request from the authority of another Member State, may choose either of the following:

"(a) carry out the on-site inspection or investigation itself;

(b) allow the competent authority which submitted the request to participate in an on-site inspection or investigation;

(c) allow the competent authority which submitted the request to carry out the on-site inspection or investigation itself;

(d) appoint auditors or experts to carry out the on-site inspection or investigation;

(e) share specific tasks related to supervisory activities with the other competent authorities."

Further, Directive 2014/57/EU, OJ L 173 of 12.6.2014, which should be transposed by Member States by July 2016, establishes "minimum rules for criminal sanctions for insider dealing, for unlawful disclosure of inside information and for market manipulation"[156]

On jurisdiction, the Directive requires that Member States establish jurisdiction, where the offenses have been committed in whole or in part in their territory or have been committed by one of their nationals (at least where the act is an offense where it was committed). [157]

Member States must notify the Commission if they establish jurisdiction over offenses committed outside of their territory, "where the offender is a habitual resident in its territory" or "the offence is committed for the benefit of a legal person established in its territory". [158]

Insurance

Under the Solvency II Directive,[159] Article 68, certain information can be exchanged between supervisory authorities in the same Member State. Article 68 goes on to say that subject to obligations of professional secrecy, "exchanges of information [in 68(1)(b) and (c)] may also take place between different Member States." Information is not defined in Solvency II, however, Recitals (26), (36), (38) indicate this would be information required for the public authorities' supervision under the Directive, serving the two main objectives of policyholder protection and preservation of financial stability.

As under the CRD IV, national supervisors could cooperate and exchange information pursuant to Article 68 above, when the data concerns regulated entities/groups with presence in the given Member States. However, when such cooperation would involve a request for data held by a non-regulated entity, e.g. a service provider providing data processing services

[156] Directive 2014/57/EU of the European Parliament and of the Council of 16 April 2014 on criminal sanctions for market abuse (market abuse directive) at Article 1.
[157] Market Abuse Directive at Article 10.
[158] Market Abuse Directive at Article 10.
[159] Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II), available at : http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02009L0138-20140523

to a regulated entity, the national supervisor could not seek the assistance of its counterpart in the Member State where the service provider provides the data service (e.g. stores the data). The responsibility is on this national regulator and on the regulated entity to enable such data availability.

It has also been suggested that "access" per se is not really a concern for national supervisors but rather, integrity (and confidentiality) of the data, and that the national supervisor will rarely seek the assistance of a private outsourcing company, as it can rely on the obligations of the regulated insurance company.

4. Competition Law Mechanisms for National Regulators

The proposed Directive "to empower the competition authorities of the Member States to be more effective enforcers and to ensure the proper functioning of the internal market"[160] contains provisions on mutual assistance. In particular, a national competition authority (NCA) would be able to request another NCA to carry out investigative measures on its behalf to gather evidence located in another jurisdiction, and officials from the requesting NCA would have the right to attend and actively assist in that inspection.

5. Obtaining data as evidence in civil or commercial matters

The Regulation 1206/2001 on cooperation between the courts of EU countries in the taking of evidence in civil or commercial matters has created "a European system of direct and rapid transmission and execution of requests". The Regulation is applicable in all EU Member States except Denmark. With respect to Denmark, the Hague Convention on the taking of evidence abroad in civil or commercial matters is applicable. However, not all EU countries have acceded to this Convention.

The Regulation is based on the principle of direct transmission between the courts, according to which the requests for taking evidence are transferred directly from the 'requesting court' to the 'requested court'.

As explained in the European Commission's Practical Guide on the Regulation, four elements need to be present for the Regulation to apply[161]: [1] "requests for the taking of evidence [2] evidence intended for us in judicial proceedings, commenced or contemplated, [3] in civil and commercial matters [4] by the court of a Member State".

"Civil and commercial matters" is an "autonomous concept" of EU law, interpreted by the CJEU on multiple occasions. [162] In their Practical Guide, the Commission and the EJN explain that "The Regulation applies to all civil and commercial proceedings whatever the nature of the court or tribunal in which they are taking place. It will for instance apply to litigation based on civil and commercial law, consumer law, employment law and even competition law as far as private proceedings are concerned."
In one of its more recent interpretations of the Brussels I Regulation, (applicable to " civil and commercial matters whatever the nature of the court or tribunal"), the CJEU reminds that

[160] Proposal from 22 March 2017 available at: http://ec.europa.eu/competition/antitrust/nca.html
[161] European Commission and European Judicial Network for Civil and Commercial Matters, "Practical Guide for the application of the Regulation on taking of evidence", available at: http://ec.europa.eu/justice/civil/files/guide_taking_of_evidences_en.pdf
[162] Ibid, citing cases interpreting the same term in the Brussels I Regulation..

" [33] …'civil and commercial matters' should not be interpreted as a mere reference to the internal law of one or other of the States concerned. That concept must be regarded as an autonomous concept to be interpreted by reference, first, to the objectives and scheme of that regulation and, second, to the general principles which stem from the corpus of the national legal systems. [34] **In order to determine whether a matter falls within the scope of Regulation No 1215/2012, it is necessary to identify the legal relationship between the parties to the dispute and to examine the basis and the detailed rules governing the bringing of the action**"[163]. In that case, CJEU concluded that ""enforcement **proceedings brought by a company owned by a local authority** against a natural person domiciled in another Member State, for the purposes of recovering an unpaid debt for parking in a public car park, the operation of which has been delegated to that company by that authority, **which are not in any way punitive but merely constitute consideration for a service provided**, fall within the scope of [the Brussels I] regulation."

"There is no definition of the concept of "court" in Regulation [1206/2001]. It should, however, be given a broad interpretation, thus including **all authorities in the Member States with jurisdiction** in the matters falling within the scope of the Regulation."[164]

The Regulation also requires Member States to designate a "central body" (Article 3) which would be responsible for "(a) supplying information to the courts; (b) seeking solutions to any difficulties which may arise in respect of a request; (c) forwarding, in exceptional cases, at the request of a requesting court, a request to the competent court."

Two means of taking evidence in another EU country are foreseen: the court before which a case is heard in one EU country can request the competent court of another EU country to take the necessary evidence; or it can instead take evidence directly in another EU country.[165] A delay of 90 days from receipt is set for execution of requests (Article 10(1)), and for the direct taking of evidence, the competent authority of the requested Member State must inform within 30 days if the request accepted and under what conditions per its national laws (Article 17(4). Article 17(2) mandates that "**Direct taking of evidence** may only take place if it can be performed on a voluntary basis **without the need for coercive measures**." Further, "The applicable law to coercive measures for executing a request is determined in accordance with the law of the Member State of the requested court to the extent that it provides for the execution of a request made for the same purpose by the national authorities of that Member State or one of the parties concerned (Article 13)."[166]

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[163] CJEU C-551/15, *Pula Parking d.o.o. v Sven Klaus Tederahn* 9 March 2017 at para 34. In para. 34, the CJEU refers to the case Sunico and others, C-49/12, where it decided that "The concept of 'civil and commercial matters' within the meaning of Article 1(1) of Council Regulation (EC) No 44/2001 of 22 December 2000 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters must be interpreted as meaning that it covers an action **whereby a public authority of one Member State claims, as against natural and legal persons resident in another Member State, damages for loss caused by a tortious conspiracy to commit value added tax fraud in the first Member State**."

[164] European Commission, "Practical Guide for the application of the Regulation on taking of evidence", available at: http://ec.europa.eu/justice/civil/files/guide_taking_of_evidences_en.pdf

[165] Recital 15 of Regulation 1206/2001 reads: "'In order to facilitate the taking of evidence it should be possible for a court in a Member State, in accordance with the law of its Member State, to take evidence directly in another Member State, if accepted by the latter, and under the conditions determined by the central body or competent authority of the requested Member State.'"

[166] Ibid.

Direct taking of evidence can be refused by the central body or the competent authority on the grounds specified in Article 17(5): "(a) the request does not fall within the scope of this Regulation as set out in Article 1; (b) the request does not contain all of the necessary information pursuant to Article 4; or (c) the direct taking of evidence requested is contrary to fundamental principles of law in its Member State."

The CJEU has endorsed the interpretation whereby the Regulation 1206/2001 "**does not restrict the options to take evidence situated in other Member States, but aims to increase those** options by encouraging cooperation between the courts in this area" and that "a national court **wishing to order an expert investigation which must be carried out in another member State is not necessarily required to have recourse to the method** of taking evidence in Articles (1)(1)(b) and 17 of Regulation 1206/2001".[167]

Civil cooperation is facilitated by **the European Judicial Network ("EJN")** "by interaction between national EJN contact points and [the EJN] is the most important tool available in this area. The EJN is particularly important for solving practical difficulties in concrete cases involving cross-border judicial proceedings."[168]

As for its membership, the Commission's Guide for legal practitioners explains that the EJN "consists of one or more contact points designated by each of the Member States involved together with the various bodies and central authorities specified in the EU Civil Justice instruments and in international conventions and other instruments to which Member States are also party. The contact points play a key role in the Network. They are available to other contact points and to local judicial authorities in their Member State to assist them to resolve cross-border issues with which they are confronted and to provide them with any information to facilitate the application of the law of the other Member States applicable under Union or international instruments. They are also at the disposal of authorities provided for in Community or international instruments relating to judicial cooperation in civil and commercial matters. The contact points assist these authorities in all practicable ways. In addition, they communicate regularly with the contact points of other Member States."

6. Obtaining data for the effective supervision of service providers

The 2006 Directive on services in the internal market (the Services Directive) provides for an elaborate administrative cooperation mechanism.[169] The Member States are obliged to cooperate with each other and give mutual assistance in the supervision of service providers. In particular, authorities from different EU Member States have to exchange information with each other and carry out checks, inspections and investigations upon request. They also have to send an alert to another EU Member State in cases where a service activity could cause serious damage to the health or safety of persons or the environment. To facilitate the cooperation, the Commission has established an electronic system for the exchange of information (IMI).

[167] C-332/11, *ProRail BV v Xpedys and others*, 21 February 2013 at para. 44 and para. 49.
[168] European Commission, "A guide for legal practitioners – Judicial cooperation in civil matters in the European Union", available at: http://ec.europa.eu/justice/civil/files/civil_justice_guide_en.pdf
[169] Directive 2006/123/EC Of The European Parliament And Of The Council Of 12 December 2006 on services in the internal market, available at : http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32006L0123

In particular, Article 29(1) of the Services Directive foresees an obligation on the Member State of establishment (of the service provider) to "supply information on providers established in its territory when requested to do so by another Member State, in particular, confirmation that a provider is established in its territory and, to its knowledge, is not exercising his activities in an unlawful manner."

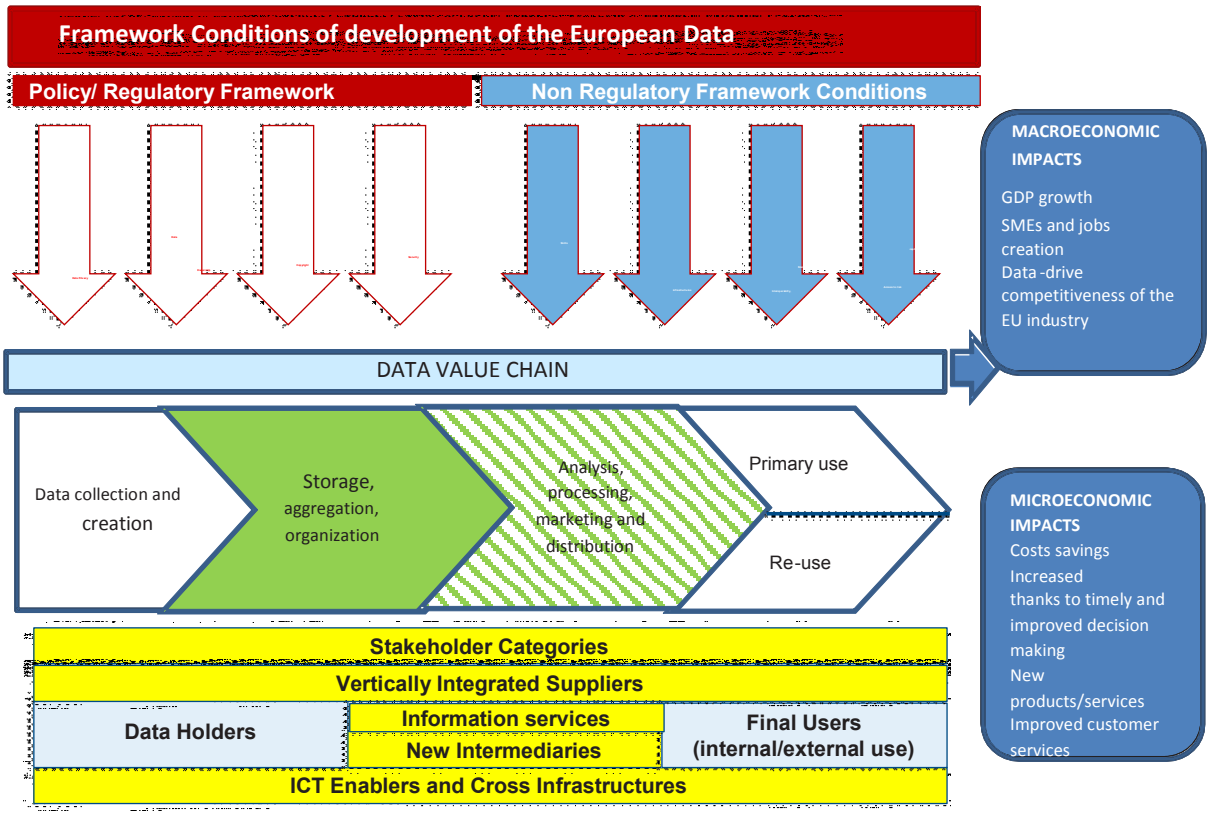
Further, under Article 29(2), the "Member State **of establishment shall undertake the checks, inspections and investigations requested by another Member State** and shall inform the latter of the results." These requested checks/investigations are subject to the scope of the powers "vested in them in their Member State." And the competent authorities decide on "the most appropriate measures to be taken in each individual case in order to meet the request".

ANNEX 9: EUROPEAN DATA ECONOMY, CLOUD SERVICES AND MARKETS

This Annex provides the reader with general but relevant background information on cloud computing in Europe. It starts with determining the place of cloud computing in the broader context of the data value chain that characterises the data economy. After this, the importance of cross-border data flows for the data economy is shown. After giving a number of definitions aimed to make the reader understand cloud computing better, the Annex concludes by giving an overview of dynamics in the European cloud market.

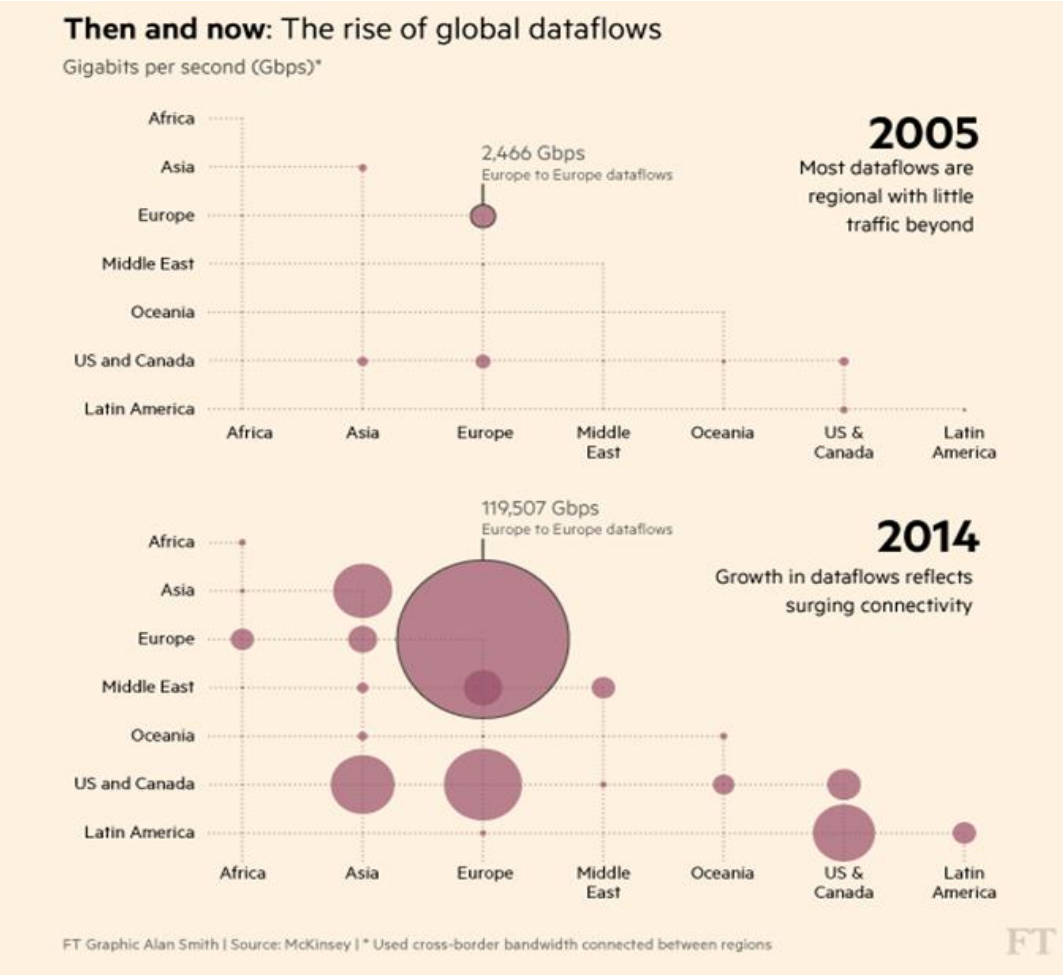
Data value chain: the "engine" of the data economy

A data lifecycle consists of four main stages: (i) data collection and creation; (ii) storage, aggregation, organisation; (iii) analysis, processing, marketing and distribution and (iv) use of data. As data moves through these stages, significant value can be added to it. The ability to use services from the entire internal market of the EU in the various processes is of importance to the data sector, in terms of the amount of services provided and also the quality and price of these services. This is one of the reasons why a free flow of data is important for a healthy and thriving European data economy. As illustrated in the figure below with a green marking, this initiative applies to the 'storage, aggregation and organisation' phase primarily, because it is in this stage where the 'data storage and processing' takes place, whether in the cloud or on in-house IT systems. Ensuring a free flow of data (across borders and IT systems) for this essential part of the data value chain is important to the existence of the entire data lifecycle.



Growing data flows, big part of data flows intra-EU

It is estimated that in 2014 alone, cross-border data flows contributed to $2.8 trillion in economic value globally, more than global trade in goods[170]. IMF data from 2008 to 2012 present cross-border information flows as the fastest growing component of US as well as EU trade[171]. A study by Mandel[172] found these flows to have increased by 49% while trade in goods and services simultaneously grew by only 2.4%.[173]



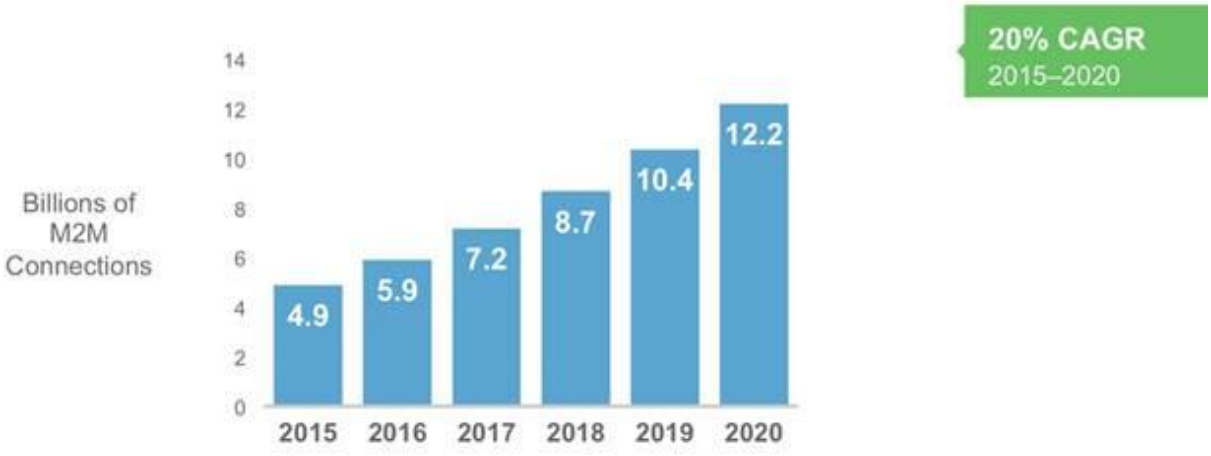
[170] McKinsey & Company, Digital globalization: The new era of global flows (2016)
[171] Aaronson, Susan Ariel (2015) Why Trade Agreements are not Setting Information Free: The Lost History and Reinvigorated Debate over Cross-Border Data Flows, Human Rights and National Security.
[172] Mandel, Michael (2013) Data, Trade, and Growth

[173] It is important to take into account that these figures, although consistent over time, are still estimates and are affected by the difficulty to measure cross border data flows owing to their lack of monetary footprints. The problem with measuring the financial benefits of cross border data flows is also related to its effect on the value added in terms of knowledge economy, whereby data changes hands but no money is transferred, (e.g. when downloading reports). This makes the internet a 'statistical problem' in trade. Trade statistics generally underestimate or completely ignore cross border data flows.

The figure above shows that intra-EU data flows are growing at the fastest pace globally, representing more than four times the volume of data flows between Asia and the North-America. A logical reason for this is the European internal market, which already provides for many fundamental cross-border freedoms and harmonisation. Still, barriers to data mobility could negatively effect further growth, as shown in section 6.2 of the Impact Assessment and in the problems section of Annex 5.

The largest component of future growth is expected to be non-personal machine-generated data, driven by e.g. IoT, digitising industry, satellite technology and financial transaction data, as shown by the figure below. This implies that an effective regime safeguarding the free flow and cross-server portability of non-personal data is an important element to put in place, in order to facilitate growth.

Growth in M2M (non-personal) data flows



Source: Cisco 2017

Cloud adoption or in-house data processing and storage

Organisations can choose whether they build their data infrastructure in-house or outsource storing and processing resources. With a rapid decrease of **costs for data storage** and processing services[174], cloud adoption can offer substantial opportunities facilitating economies of scale and allowing for innovative businesses and business models to emerge.

A survey of around 500 cloud-using companies[175] illustrates the cost reduction privileged by the uptake of cloud solutions: 81% of the companies admitted that their IT expenditure decreased by 10-20% with the use of the cloud, and 12% of companies saved 30% or more. An independent survey (EY, 2013) points to a significant 22% of companies surveyed, all sectors combined, using outsourced services for IT infrastructure and data centre service, with rampant outsourcing practices for cloud services and big data analytics.

[174] Understood as a "paradigm for enabling network access to a scalable and elastic pool of shareable physical or virtual resources with self-service provisioning and administration on-demand" [reference]
[175] (IDC, 2014)

In 2014, 7% of SMEs and 17% of large enterprises used private cloud[176] services[177] destined for a single enterprise, either maintained in-house or supplied by a third-party. 12% of European SMEs and 24% of large enterprises use public clouds[178] offered by third-party cloud service providers (CSP) [179]. Moreover, a sector-specific analysis[180] shows that cloud computing services cover a substantial part of the market in those data-intensive sectors such as telecom/media (80% of organisations using Public cloud and 45% Private cloud), finance (76% Public cloud and 44% Private cloud), and distribution (74% Public cloud and 45% Private cloud). All the studies consulted[181] note a steady increase both in demand and offer of cloud services, with projections expecting for the EU cloud market to more than double its value by 2020[182].

Types of Cloud Services

Type	Definition	Example
Infrastructure as a Service (IaaS)	A service allowing the consumer to provision processing, storage, networks, and other fundamental computing resources, where the consumer is able to deploy and run arbitrary software, which can include operating systems and applications. The consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage, and deployed applications; and possibly limited control of select networking components (e.g. firewalls).	Gives software developers direct control over the computing and storage resources being provided by a cloud. This provides greater flexibility, at the cost of greater complexity to take advantage of all of the cloud's services. Examples include Amazon Elastic Compute Cloud, OVH vCenter, VMWare vCloud Express, etc…
Platform as a Service (PaaS)	A service allowing the consumer to deploy onto the cloud infrastructure consumer-created or acquired applications created using programming languages and tools supported by the provider. The consumer does not manage or control the underlying cloud infrastructure including network, servers,	Enables software developers to build custom applications on clouds, taking advantage of the cloud ability to automatically provide additional computing and storage resources when

[176] Private cloud is one of the deployment model of cloud computing. In this model, the cloud service is offered for a single client organisation and with the data being stored and processed in a private data centre. This service can be offered by a third party or in-house. Deloitte Study (SMART 2014/0031).

[177] Eurostat, "Factors limiting enterprises from using cloud computing services, by size class, EU-28", 2014 (% enterprises using the cloud); http://ec.europa.eu/eurostat/statistics-explained/index.php/Cloud_computing_-_statistics_on_the_use_by_enterprises

[178] Public cloud services are offered by a provider to multiple organisations on a shared infrastructure (one or multiple data centres), Deloitte Study (SMART 2014/0031).Other models of cloud services exist, including hybrid (public/private) clouds.

[179] Estimates based on ESTAT survey (2014), covering the entire EU. NB: excludes sectors such as finance and public sector organisations. Eurostat, "Factors limiting enterprises from using cloud computing services, by size class, EU-28", 2014 (% enterprises using the cloud); http://ec.europa.eu/eurostat/statistics-explained/index.php/Cloud_computing_-_statistics_on_the_use_by_enterprises.

[180] (IDC, 2014)

[181] The high discrepancy between the two sources presented here is analysed in Deloitte Study (SMART 2014/0031) to show methodological divergences, including geographical and sector inconsistencies. This is complemented by a series of independent and industry studies, all pointing to a variation of market shares, but showing a steady increase in demand and offer.

[182] With estimates ranging from €28.4 billion - pessimistic scenario - to €59.6 billion - optimistic scenario (IDC, 2014).

	operating systems, or storage, but has control over the deployed applications and possibly application hosting environment configurations.	required. Examples include IBM Websphere, Google App Engine, Microsoft Windows Azure, Amazon Elastic Beanstalk, etc…
Software as a Service (SaaS)	A service allowing the consumer to use the provider's applications running on a cloud infrastructure. The applications are accessible from various client devices through an interface such as a web browser (e.g., web-based email). The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, storage, or even individual application capabilities, with the possible exception of limited user-specific application configuration settings.	Remote software environments for example for email, word processing, customer relationship management, and many other types of applications. Examples include Google Docs, Calendar and Gmail, Spotify, Salesforce.com, Microsoft Office 365, SAP Business by Design, etc…

Cloud markets and market players

The European market for cloud computing services is a fast emerging market, as European adoption numbers are increasing sharply.[183] Despite the fact that US based providers are dominating the European market, there are patterns suggesting that there are numerous promising EU Public Cloud vendors that are working their way up in their home market.

The recent Cloud Uptake Study provides figures on the key Cloud providers in Europe.[184] Of the top 25 Public Cloud vendors in the EU, 17 are headquartered in the US, seven are based in the EU and one (Visma) is based in Norway. The US companies have on average twice the revenue of the EU based providers, which are all applications vendors. The top five European-based public cloud service providers by European market share are:

- SAP (Germany): SAP's main cloud focus is on offering SaaS applications for CRM and ERM. Even though the company made a relatively early start in the SaaS market, it initially had disappointing results. However, since then the company has made acquisitions and improved its Public Cloud offerings, and is now experiencing impressive growth, which is explained in further detail below and illustrated in figure 6. SAP is not only the leading European-based Public Cloud provider on the EU market, but also the world's largest vendor of business management software, including enterprise resource management, customer relationship management, and supply chain management;

- T-Systems (Germany): In terms of its Cloud services, T-Systems' main focus is on providing Private Cloud services. Nevertheless, it also offers a virtual Private Cloud (services based on a shared environment but with enhanced security and control compared to "standard" Public Cloud offerings), which is Public Cloud services according to IDC. T-Systems is a subsidiary of Deutsche Telekom, which has a long standing involvement in the European IT market;

- SmartFocus (France/UK): Smartfocus is a provider of SaaS services for email, social and mobile marketing. Founded in Paris in 1999 as Emailvision, the company acquired UK-based

[183] The demand of Cloud computing in Europe: drivers, barriers, market estimates. Research in Future Cloud computing workshop (IDC 2012)

[184] SMART 2013/43, "Uptake of Cloud in Europe - Follow-up of IDC Study on Quantitative estimates of the demand for Cloud computing in Europe and the likely barriers to take-up", 2014, see: http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=9742

Smartfocus in 2013 and subsequently took the SmartFocus name for the combined company and moved its group headquarters to London;

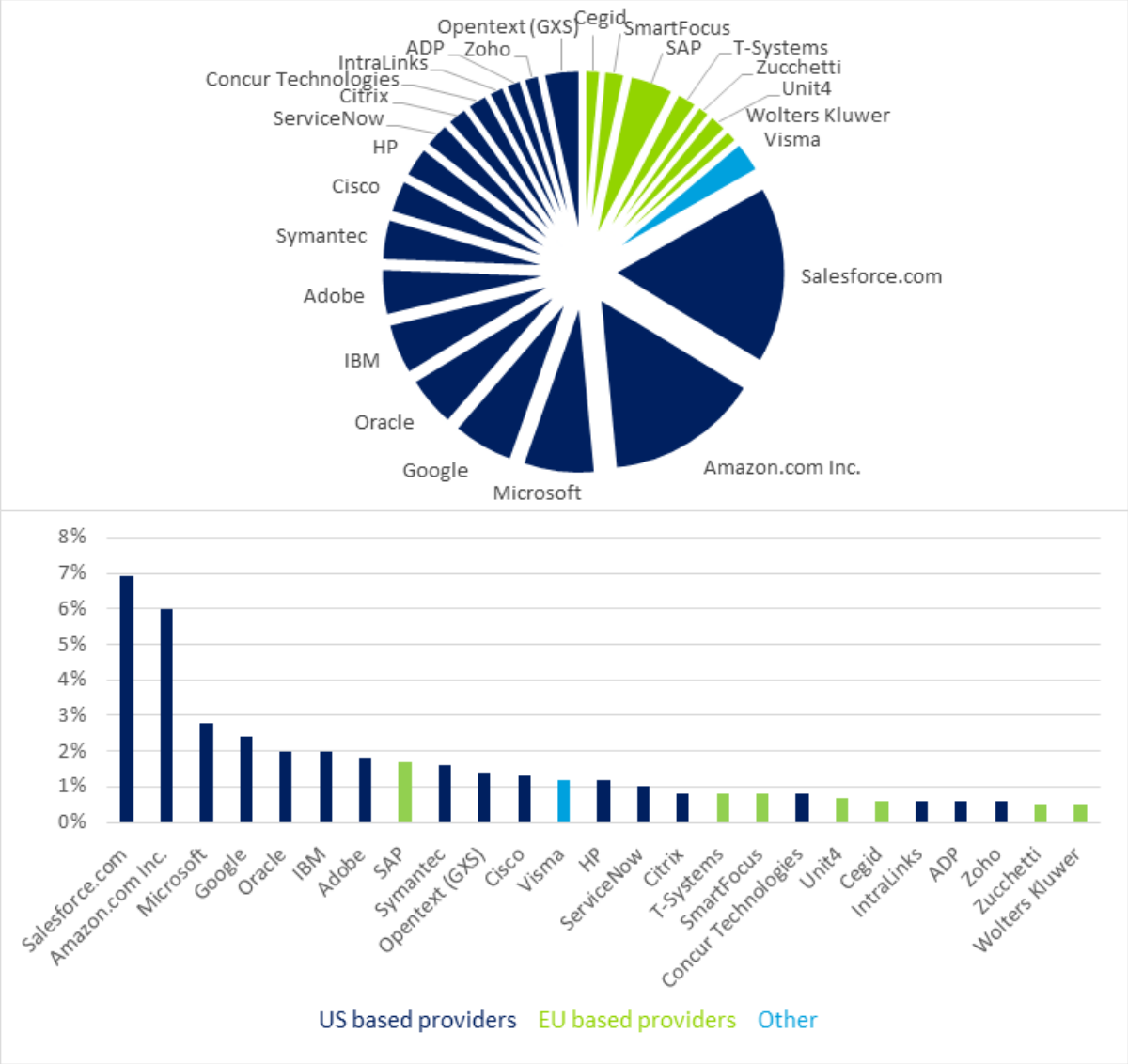
- Unit 4 (Netherlands): Unit 4 is a business applications vendor based in the Netherlands. It offers its applications as multi-tenant applications but with isolated tenant databases. Coda, its leading financial management software suite, has a range of different solutions that can be hosted on its cloud infrastructure, and it has a number of data centers for cloud hosting in different European locations;

- Cegid (France): Cegid is a long-standing French vendor of business applications that also offers SaaS applications. It says it has 24,000 small companies using its SaaS accounting services, and over 650 mid-sized and large customers for its SaaS services.

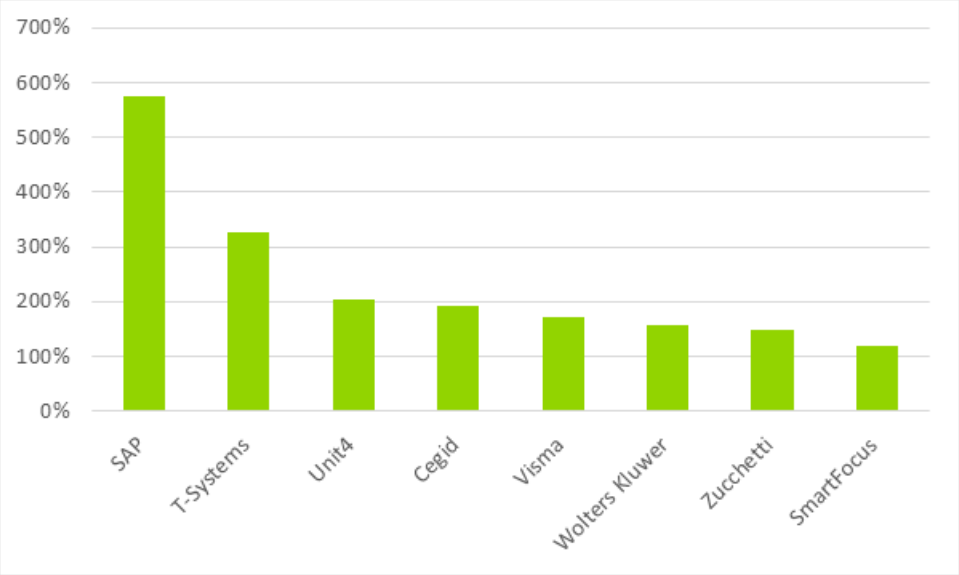
In terms of market comparison of the top 25 Public Cloud vendors by origin, the 17 US headquartered providers collectively generate 83% of the total revenue of the top 25 Public Cloud vendors, while the seven EU based providers generate only 14% as can be seen on the Figure here-under. This is equivalent to a 2% share on average per EU based provider, whereas the US providers have a share of 4.9% per provider on average.

It is also worth noting that GXS (bought by Opentext) recently relocated its headquarters to the US. This highlights another ongoing issue that faces EU based IT companies. They are often the target for acquisition by US based companies or investors, resulting in an inevitable ‘westwards shift’ in ownership.

The NASDAQ stock market is also seen by many European IT business owners as being a more attractive option when looking to take their company public, again leading to EU businesses becoming foreign owned. Unfortunately, there is very little acquisition activity in reverse by EU based businesses taking over US owned companies.



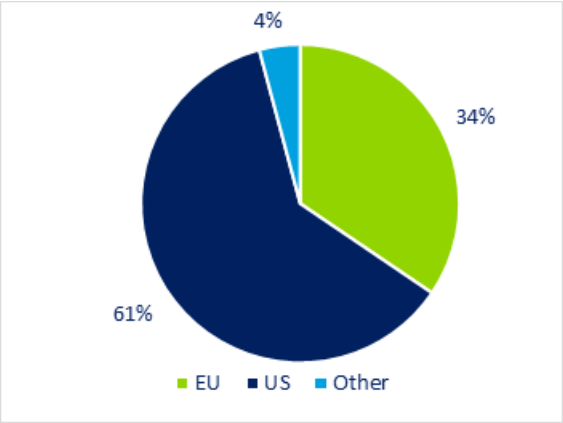
There was great disparity between the top 25 Public Cloud vendors' growth rates in EU in 2012-2013. The average growth rate was 192%, while the range was from 18% at Cisco to impressive 576% at SAP. The disparity in growth rates is mostly driven by the differences between the providers' Cloud strategies. The growth rates of the seven EU based providers are illustrated in the figure below.



Growth 2012-2013 of top 8 European Public Cloud Services Providers in EU market

Clearly, SAP (Germany) stands out from the group with almost five times higher growth than SmartFocus which experience a growth rate of 119%. According to the recent study on cloud uptake, SAP's rapid growth is associated with a change in strategy from trying to get its customers to adopt a radical vision of cloud, centred on new and untried cloud offerings, to a more pragmatic approach centred on maximising growth from its existing cloud offerings.

Expanding the focus to the top 100 Public Cloud vendors in the EU, the numbers change and we can form a slightly different picture of the EU market. The top 100 providers collectively generate 56.6% of the total revenue of all Cloud service providers in the EU. Looking more specifically at top 26-100 providers, 49 of these are US-based and 23 are EU-based. US-headquartered companies still dominate the market with a 60.7% share of the total revenue of the top 26-100 Public Cloud vendors, while European companies generate a 34.1% share of this. This is equivalent to a 1.48% share on average per EU based provider, whereas the US providers have a share of 1.24% per provider on average.



Total Share of Revenue of Top 26-100 Public Cloud Vendors

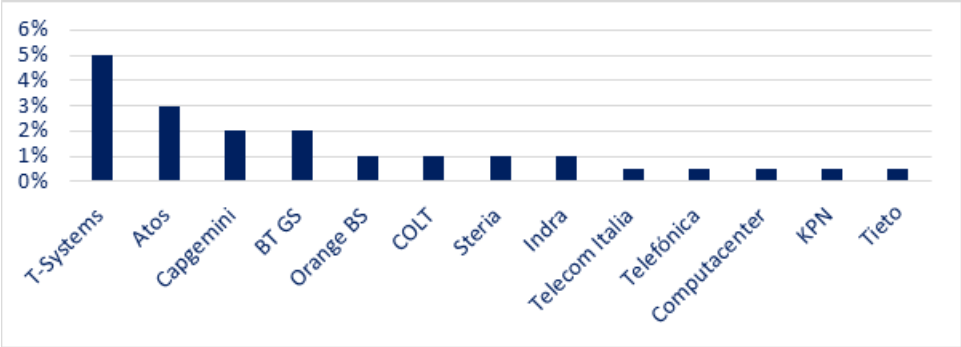
The leading EU based private cloud services providers by European market share are T-Systems (Germany), Atos (France), Capgemini, BT GS, and Orange BS. European vendors are the largest group amongst the vendors, and account for slightly under 50% of the overall revenue.[185]

European suppliers therefore have a strong presence in the private cloud market. The figure below shows the EU market share of the leading EU based private cloud service providers. It is worth nothing that even if we were to include non-EU headquartered suppliers, T-Systems would still be the largest single provider of private cloud services in the EU.

Nevertheless, according to an article by Forrester [186], IBM was the top private cloud service provider in 2013, but it was overtaken in 2014, where VMware managed to become the leading private cloud vendor in Europe. The statistics from both sources should be interpreted with caution since vendors are reluctant to separate results for their traditional hosting business and their private cloud businesses, so the estimates of revenues for these are not robust.

Moreover, the figures showing that T-Systems is the largest single provider of private cloud services in the EU is based on a separate analysis as private cloud services are not included in IDC's tracker programme[187].

EU Market Share of the leading European Private Cloud Services Providers



[185] SMART 2013/43, IDC, "Uptake of Cloud in Europe. Follow-up of IDC Study on Quantitative estimates of the demand for Cloud computing in Europe and the likely barriers to take-up ", 2014, available at: http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=9742
[186] Forrester, Adoption Profile: Private Cloud In Europe, Q3 2014, March 2015.
[187] *Ibid.*