Delivering the value of big data: EU policies for innovation and growth

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This paper aims to serve as a thought-starter on Big Data for EU policy-makers and stakeholders. It does not seek to define relevant notions or pre-define business models and technology developments. It is an effort to explain Big Data and its value with the view to exploring EU policies that enable or impact data-driven innovation and growth.

Introduction: more than hype

'Big Data' is a popular term used to describe the exponential growth, availability and use of information. The data deluge has started to transform business, government, science and everyday life and serves today as a basis for innovation and growth.

Etymologically 'data' means 'given' as in 'fact' in Latin. Its meaning was first recorded in 1946 as 'transmittable and storable computer information'. The new Big Data buzzword is 'datafication' describing a phenomenon whereby our entire world is transformed into oceans of data[1]. We have long tried to reap the benefits of the 'digitised' economy; if data is the new 'currency', then today we should be talking about the 'datafication' of our economy.

Big Data may seem like hype in policy discussions; but the reality is, we live in the Big Data era. Data and data-driven innovation has already begun to power our economy, but like the web, its effects are not immediately and easily measured because the return on investment is visible downstream and often not directly attributed to data use.[2]

A new era: what is 'Big Data'

The explosion of data is not new. It continues a trend that started in the 1970s. What has changed today is the speed of growth, the diversity of the data and the imperative to make better use of information. Gartner's IT Glossary defines Big Data as '**high-volume, high-velocity and high-variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision making'**.

- **Volume:** in terms of volume Big Data can be seen as a moving target. Many predict the number of data held in organisations across all sectors 'to double every six months going forward'. According to IDC's Digital Universe Study of May 2010, the size of data in 2020 (35.2 zettabytes) is expected to be 44 times the size in 2009 (0.8 zettabytes).

[1] The concept is analysed in *Big Data: A Revolution That Will Transform How We Live, Work and Think* by Viktor Mayer-Schönberger and Kenneth Cukier, 2013.
[2] 'Public Policy Considerations for Data-driven Innovation', J. Hemerly, Computer (IEEE Computer Society), Vol. 46:6, pp. 25-31, 2013.

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- **Velocity:** according to Gartner, velocity 'means both how fast data is being produced and how fast the data must be processed to meet demand'. To better understand data velocity, we can consider the following examples: radio frequency identification (RFID) systems generate up to 1,000 times the data of conventional bar code systems; 10,000 payment card transactions are made every second around the world; 100 hours of video are uploaded to YouTube every minute; 340 million tweets are sent per day, i.e. nearly 4,000 tweets per second; and more than 5 billion people are calling, texting, tweeting and browsing websites on mobile phones.

- **Variety:** refers to the different types of formats of data available today - from traditional databases, to text documents, email, meter-collected data, video, audio, and financial transactions. By some estimates, 80 percent of an organisation's data is not numeric.

What is referred to as the 'Big Data revolution' is more of an **evolution enabled by a number of technological advancements** such as cheap, abundant storage[3] and server processing capacity, the use of cloud computing technologies, faster processors, affordable large-memory capabilities, new storage and processing technologies designed specifically for large data volumes, high-performance analytics, data visualisation, parallel processing, virtualisation, large grid environments, high connectivity and other flexible resource allocation arrangements.

The value of Big Data: data analysis

Regardless of the format, Big Data simply is a lot of data unless it can be transformed into **meaningful and relevant information**. Big Data brings together an enormous pool of information. Larger data samples and a wider variety of data allow us to look at complex problems from new angles.

With this view, businesses today have started to foster a data-driven culture across sectors with the use of **analytics**. Organisations are rethinking their data management strategies and are increasingly deploying high-performance analytics and visual analytics in order to gain rapid insights from Big Data and obtain the ability to solve increasingly complex problems using more data. In a survey 39 percent of 586 global senior executives[4] believe that data has become an important tool that drives strategic decisions over the last five years. The International Data Corporation (IDC) surveyed 693 European

[3] For example, a disk drive that can store all of the world's music costs $600 according to *Big Data: The next frontier for innovation, competition and productivity*, McKinsey Global Institute, 2011.
[4] *Big Data: Harnessing a Game-Changing Asset,* Economist Intelligence Unit, 2011.

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organisations in February 2011 and 51 percent of respondents said that business intelligence and analytics are high-priority technologies.[5]

To help illustrate the value of Big Data and its analysis, it is important to look at the applications-level.

In the healthcare sector, it is estimated that if Big Data was used throughout the health care system – from clinical operations to payment and pricing of services and R&D – the total savings would be more than $300 billion for the US healthcare system by 2020.[6] This potential annual value to the US healthcare system equals to more than double the total annual healthcare spending in Spain. If these early successes were scaled up to create system-wide impact, it is estimated[7] that the pathways could account for $300-450 billion in reduced healthcare spending, or 12 to 17 percent of the $2.6 trillion baseline in US healthcare costs. For Europe the potential savings are an estimated 12 to 17 percent, approximately equal to the pharmaceutical budget for EU countries.

Today our healthcare systems produce vast amounts of datasets that remain untapped. The main reason is due to a differentiation between clinical data produced through robust clinical trials that lead to a publication, and the large datasets that are produced throughout healthcare systems. These include data collected by hospital tests, clinical reports, patient demographics or reimbursement of procedures. These rich datasets are still perceived as a by-product of healthcare delivery, rather than a central asset to improve its efficiency.

The potential of Big Data in the **public sector is also impressive**. To explore the benefits of Big Data in the public sector, the government must be considered as a generator, user and beneficiary of data.

- **Re-use of public sector information:** an important trend in the Big Data era is the re-use of public sector data. Open government data is a tremendous resource that has yet to be fully tapped. 'Just as oil was likened to black gold, data takes on a new importance and value in the digital age', said Neelie Kroes, Vice-President of the European Commission responsible for the Digital Agenda at the launch of the EU's Open Data Strategy in December 2012.

  A number of EU countries, including the UK, the Netherlands and France have already launched open data initiatives and more and more regions and cities, including Berlin, Amsterdam, London and Krakow,

[5] *Big Data Analytics: Future Architectures, Skills and Roadmaps for the CIO,* International Data Corporation (IDC), 2011.
[6] 'Exploring Data-Driven Innovation as a New Source of Growth: Mapping the Policy Issues Raised by "Big Data"', OECD, Digital Economy Papers, No. 222, 2013.
[7] *The big-data revolution in US health care: Accelerating value and innovation* by Basel Kayyali, David Knott, and Steve Van Kuiken, article published by McKinsey & Company, April 2013.

are opening up data for reuse to power local growth and innovation as well as to increase transparency and citizens engagement. At the same time, the European Commission has launched the European Data Portal pooling the data produced by European institutions. Furthermore, the European Commission intends to create a pan-European platform pooling data from Member States and European institutions. These open data initiatives have incredible potential for reuse. According to the European Commission, public sector information already generates some €32 billion of economic activity each year and the new package stands to more than double that to around €70 billion.[8]

- **Evidence-based policy-making:** Evidence-based policy-making has been defined as an approach that helps people make well-informed decisions about policies, programmes and projects by putting the best available evidence at the heart of policy development and implementation.[9] Evidence-based policy making is based on the premise that policy decisions can be better informed by available evidence and should be the outcome of rational analysis.

  An impressive example of how data analysis can empower evidence-based policy making is a recent United Nations Global Pulse project[10], which shows how the analysis of a powerful new Big Data source, i.e. global social media, can provide real-time feedback for policy-makers and invaluable information to mitigate negative effects of increased unemployment.

  Big Data can also help to complement the official statistics and provide richer, more informative and more up-to-date measurement of the size and impact of the digital economy. In a recent study by the UK National Institute of Economic and Social Research, researchers found that the UK digital economy is substantially larger – with 270,000 active companies/14.4 percent of all companies as of August 2012 – than conventional government estimates suggest – 167,000 companies/ 10 percent of all companies.[11]

- **Public sector efficiencies:** Up to 90 percent of the data generated by the public sector administration is created in digital form, partly as a result of e-government initiatives undertaken during the past 15

[8] *Big Data at your service,* European Commission article, 2012 available at: http://ec.europa.eu/information_society/newsroom/cf/dae/itemdetail.cfm?item_id=8337

[9] 'What is Evidence-Based Education?', Davies, P.T. 1999a, British Journal of Educational Studies, 47, 2, 108-121

[10] More information available here: http://www.unglobalpulse.org/projects/can-social-media-mining-add-depth-unemployment-statistics

[11] *Measuring the UK's Digital Economy With Big DataBig Data*, National Institute of Economic and Social Research, Growth Intelligence, July 2013.

years.[12] According to the OECD[13], Europe's public sector accounts for almost half of GDP, which shows the potential of Big Data efficiencies for governments.

More specifically, McKinsey estimates that in Europe, government administrations could save more than €100 billion in operational efficiency improvements alone by using Big Data. McKinsey research further shows Europe's public sector could potentially reduce the costs of administrative activities by 15 to 20 percent, creating the equivalent of €150 billion to €300 billion - or even higher - in new value. This estimate includes both efficiency gains and a reduction in the gap between actual and potential collection of tax revenue. Similar studies in the UK[14] show that the public sector could save 2 billion GBP in fraud detection and generate 4 billion GBP through better performance management by using Big Data analytics.

Realising the potential of Big Data: sound EU data policies

The 2011 McKinsey report on Big Data concludes that the potential value of the use of Big Data will not be realised unless government and policy-makers understand and respond to a range of barriers and enablers.

In today's data-driven world, traditional regulatory notions are being challenged. More than ever before the evolution of technology outpaces the legislative process. We need global, forward-looking policies to enable data-driven innovation today and in the future. EU policy-makers and stakeholders need to debate how we can reshape the existing policy frameworks and introduce new elements to respond to the rapid pace of technological change whilst maintaining values and principles that are core to our society.

Data protection and the free flow of data

Not all data is personal data. Current data collection practices often generate large collections of data that are not directly linked to a specific person. Data that is not personally identifiable should be available for use and analysis. Data that is personally identifiable can be effectively de-identified and subsequently used in analysis, yielding valuable and otherwise unobtainable information that advances our growing body of knowledge and provides solutions to real-world problems. A misinformed understanding of Big Data may demonise the term and

[12] *Big Data: The next frontier for innovation, competition and productivity*, McKinsey Global Institute, 2011.
[13] 'Exploring Data-Driven Innovation as a New Source of Growth: Mapping the Policy Issues Raised by "Big Data"', OECD, Digital Economy Papers, No. 222, 2013.
[14] 'Exploring Data-Driven Innovation as a New Source of Growth: Mapping the Policy Issues Raised by "Big Data"', OECD, Digital Economy Papers, No. 222, 2013.

exaggerate risks creating unfounded fears that can pollute forward-looking policies.

A white paper on Big Data by the Networked European Software and Services Initiative (NESSI)[15] warns that without appropriate privacy there will be no benefits from using Big Data technology. Indeed today our society has come to recognise individuals' desire to control information about themselves while enjoying the life-changing benefits that data-driven innovation create. But commenting on the proposed EU Data Protection Regulation[16], NESSI believes that it represents a step backward for competitiveness in the EU at a time of economic crisis. It is indeed one of the biggest regulatory challenges in this context, both for policy-makers and businesses, to strike a reasonable balance between protecting individuals' privacy and leveraging data that could include information about individuals.

The OECD points[17] to a number of privacy concepts and rules that become problematic in the context of Big Data, i.e. the definition of personal data, the principles of purpose specification and use limitation, the requirement to provide individuals with comprehensive and comprehensible information about the collection and use of personal data and the definition of data controller. The Centre for Information Policy Leadership identifies[18] similar challenges including notice and consent as it explores modern policies for data governance.

The free flow of data across borders and at global level has become an economic and trade consideration given the role that data-driven goods and services play in today's economy. Facilitating the free flow of data has been the starting point for the OECD's Guidelines on the Protection of Privacy in 1980 as well as the legal basis for the EU data protection rules. In order to protect the fundamental right to privacy we need to continue to establish baseline protections that enable rather than restrict the flow of data.

[15] White Paper, *Big Data: A New World of Opportunities,* Networked European Software and Services Initiative (NESSI), 2012.
[16] Proposal for a Regulation on the protection of individuals with regard to the processing of personal data and on
the free movement of such data (General Data Protection Regulation) of 25 January 2012, COM(2012) 11 final.
[17] 'Exploring Data-Driven Innovation as a New Source of Growth: Mapping the Policy Issues Raised by "Big Data"', OECD, Digital Economy Papers, No. 222, 2013.
[18] 'Big Data and Analytics: Seeking Foundations for Effective Privacy Guidance', Discussion Document, Centre for Information Policy Leadership, Hunton & Williams LLP, 2013.

Data protection rules should continue to provide the necessary protections that enable the free flow of data. Policies need to strike a balance between protecting the individuals' right to privacy and responding to the evolution of technology in manner that is forward-looking, flexible, technology-neutral and coordinated at global level.

Flexible and harmonised security requirements

A closely related policy to data protection is data security. With any massive store of data, a large-scale data breach could expose personal information, confidential corporate information and even national security secrets.

However, Big Data itself is an important tool in protecting enormous datasets from cyber-attacks, e.g. through the use of predictive cyber-analytics. Organisations need to address cyber risk just as they address any other business risk. Process and methodology guidance can be helpful, as opposed to technology mandates and one-size-fits-all regulation, which only serves to constrain innovation by locking it into mandates based only on what exists today.

The OECD recognises[19] that as data usage today requires information systems and networks to be more open, organisations are obliged to adapt their security policy to the more open and dynamic environment in which data are widely exchanged and used. As the EU and other jurisdictions globally are debating cybersecurity laws, we need to avoid top-down requirements that can result in higher costs, delayed response to new cyber threats, and weakened security while undermining trust.

Policies governing security standards and enforcement need to be harmonised to adequately address the global nature of data security threats. At the same time, organisations must be given the flexibility to design and execute an effective security strategy.

Enabling the re-use of public sector information

In the Communication on Open Data[20], the European Commission recognises that public data exploitation holds enormous potential for the EU economy and consumer welfare. However, the Communication points out that existing regulatory tools and their implementation, the lack of awareness of administrations and businesses and the slow uptake of innovative technologies are holding back the development of a true

[19] 'Exploring Data-Driven Innovation as a New Source of Growth: Mapping the Policy Issues Raised by "Big Data"', OECD, Digital Economy Papers, No. 222, 2013.
[20] Communication on Open Data: An engine for innovation, growth and transparent governance of 12 December 2011, COM(2011) 882 final.

market for the re-use of public data. Yet, according to a survey on existing findings on the economic impact of public sector information conducted by the European Commission in 2011[21], the estimated annual total direct and indirect economic gains from public sector information applications and use across the EU27 economy amounts to € 140 billion.

The recent adoption of the new EU Open Data rules[22] in only a first step. The intention to mobilise financing instruments by prioritising open data in R&D and infrastructure programmes and further facilitate coordination and experience sharing across the EU Member States are key policy initiatives that need to continue and expand.

Enabling the re-use of public sector information can create an invaluable innovation resource that needs to be leveraged at EU and national levels. The EU institutions and governments should continue to effectively make available public sector data through policy initiatives.

Policy-making should be evidence-based

Evidence-based policy-making has been particularly supported in policies where scientific evidence inherently plays a key role such as policies related to medicines, healthcare, nutrition and the environment. However in today's data-driven economy, the vast amount of data available to governments and organisations can be used to inform any policy, from education to finance.

Indeed Big Data may provide solutions for some of the societal challenges we are currently facing. The US government has recently adopted a Big Data plan investing in Big Data solutions for departments and agencies in the federal administration. The European Commission should also be in the driving seat incentivising Big Data solutions for different sectors.

The EU institutions have been at the forefront of a shift toward evidence-based policy-making. Recently, the European Commission appointed its first chief scientific advisor, Professor Anne Glover, who is responsible for providing 'high-level and independent scientific advice throughout all stages of policy development and delivery' to the European Commission's president. The European Commission has been advocating for evidence-based policy-making at the EU level with its evidence-based

[21] *Review of recent studies on PSI re-use and related market developments,* Final Version, Graham Vickery, Information Economics, Paris, 2012.
[22] Revised Directive on the re-use of public sector information (2003/98/EC)

youth policy[23] and its efforts to integrate the results of EU funded research in EU policy-making.[24]

EU governments and EU institutions should capitalise on the vast amounts of data that exist to help shape policy-making. This will result in a more sound, forward looking and future-proof public policy-making.

Intellectual property

The unique nature of data raises a number of issues including, but not limited to, intellectual property.

Data can be easily copied, combined with other data and used simultaneously by a number of people. Questions relating to data ownership, use and the rights that come with a specific piece of data are increasingly being discussed.

Questions relating to data ownership, use and the rights that come with a specific piece of data are increasingly being discussed. In harnessing the potential of Big Data, EU policy-makers need to keep in mind both the importance of data analysis and intellectual property rights.

Invest in jobs, skills and education

In March 2013, the Eurozone unemployment rate rose to a record 12.1 percent, the highest since the days before the euro. Yet Europe is facing a huge skills challenge. According to the European Commission, by 2020 the number of jobs for highly-qualified people will rise by 16 million, while the number of jobs held by low-skilled workers will decline by around 12 million. Fifty percent of jobs today require technology skills, and 77 percent of all jobs will require these skills within the next decade. The number of digital jobs in Europe has been growing by 3 percent per year during the period of the economic crisis but the number of new ICT graduates and other skilled ICT has been shrinking.

A recent global survey on Big Data[25] indicates that new roles such as data scientists and data stewards are necessary for gaining insight from data however, workers with domain expertise who are skilled in these areas are in short supply. According to the OECD Skills Strategy 2012, demand for highly specialised skills is expected to intensify as data analytics proliferate, and a shortage of data scientists is likely in the near

[23] http://ec.europa.eu/youth/policy/evidence-based_en.htm
[24] *Communicating research for evidence-based policymaking A practical guide for researchers in socio-economic sciences and humanities,* European Commission, 2010.
[25] *Big Data: Lessons from the Leaders,* Report by The Economist Intelligence Unit, 2012.

future. At the same time, industry analyst International Data Corporation (IDC) expects the Big Data technology and services market to grow from $3.2 billion in 2010 to $16.9 billion in 2015. This represents a compound annual growth rate of 40 percent. Europe must capture this opportunity. However, Big Data creates other skills challenges that education systems will need to meet: the availability of open data will drive demand for additional coding and development skills, to enable new entrepreneurs to harness available data to create new apps or services that drive new economic value. The need for digitally literate citizens able to express their individuality and be creative, as human a counterpoint to computer-driven analysis, will become more apparent.

To maximise the potential of Big Data and data analytics in Europe, we will need to nurture a new skills pool not only by training more people in sciences, engineering and data science, but also by training data scientists and professionals who will have a new set of skills that combines expertise in software and in different branches of engineering. To facilitate this, Europe needs a cross border framework including greater mobility of skilled labour.

EU Member States must bolster their educational systems to respond to the need for scientists, graduates skilled in information and communications technology, and a more digitally literate general population. This requires educational systems being better aligned with industry to improve the supply and demand of talent.

Complete the digital single market

When it comes to investments in communication technologies several years ago, Europe was leading the way. While US companies were investing in several competing mobile technologies, companies in Europe were investing in a single technology. European companies are still investing today, but not at the same levels of companies on the other side of the Atlantic. Over the past five years, US investments in telecoms have been incredible with operators taking huge capital risks, a fact that is often overlooked. Indeed operators invest in markets where they can see returns.

To tap the potential of the digital economy, we need to get the relationship between innovation and regulation right. Delivering new communications capabilities requires enormous private-sector capital. Hence the need for a policy framework that makes investments in innovation possible, and rewards and protects them.

European communication markets remain highly fragmented because of the wide variation in European laws governing digital services. Remaining obstacles to the completion of a full digital single market

need to be removed to create a more consistent regulatory environment. This could spur further innovation, encourage investment and create greater digital opportunities that could ultimately revitalise the European economy.

Spectrum management should be seen as a priority because of the growth explosion in mobile broadband traffic. More spectrum availability would offer the possibility to generate greater capacity and foster innovation. The allocation of radio spectrum and its harmonisation at the EU level are therefore essential. Operators cannot plan massive investments if they do not have the certainty to get spectrum access rights for a very long term. Moreover, sufficient spectrum availability is essential to support the rapid adoption of the latest technologies and capabilities. Fostering the mobile ecosystem through this use of the spectrum will in further create downstream economic multipliers.

To build out these kinds of networks, you have to attract high levels of investments. It is a bit circular, but the scale of capital required to build out networks requires the right spectrum policies. It also requires the right tax policies that tax capital at very low levels, thus attracting investors. Last but not least, it requires a predictable regulatory structure in sync with the long-term nature of network investments.

European communication markets remain highly fragmented. Remaining obstacles to the completion of a Digital Single Market need to be removed to create a more consistent regulatory environment. This requires a predictable regulatory structure which is essential for effective spectrum management and long-term networks investments.

Promote innovation

Today it is widely accepted that Europe failed to exploit the full potential of the first wave of the internet revolution. As Máire Geoghegan-Quinn, European Commissioner for Research, Innovation and Science, noted in a recent opinion piece, 'It is true that Europe has been missing out on some cutting-edge technologies which is why the EU has fewer fast-growing innovative enterprises than the US. It is also true that this situation is in danger of deteriorating […]. We nevertheless still have the power to prevent this decline and the key is investing in our own potential.'[26]

Europe realises that with an ageing population and strong competitive pressures from globalisation, the future economic growth and jobs will

[26] *"Europe's potential for innovation is our strongest asset in a competitive world"*, Opinion Piece by Maire Geoghegan-Quinn, EU Commissioner for Research, Innovation and Science, Europe's World, Spring Edition, 2013.

increasingly have to come from innovation in products, services and business models. Therefore innovation has been placed at the heart of the Europe 2020 Strategy for Growth and Jobs. The action points towards the Innovation Union[27] such as promoting excellence in education and skills development, enhancing access to finance for innovative companies, creating a single innovation market, reforming research and innovation systems are key to delivering an innovative and competitive European data ecosystem.

Distributed internet computing platforms allow organisations to store and analyse massive data sets without requiring the investment in infrastructure. However, data protection regulation, especially that which attempts to enforce jurisdictional requirements, limits the ability of these platforms to blossom, thus limiting access to computational resources that are otherwise nearly democratised. Recovery and resilience are core benefits of remote storage and processing, as the system can compensate for loss of data or power in one location by ramping up another. Regulation must allow free cross-border data flow in order for the system to work because with such massive amounts of data, it is impossible—and prohibitively expensive—to make specific rules for certain types or classes of data in transit.

EU policy-makers should support the Innovation Union action points: promote excellence in education and skills development; enhance access to finance for innovative companies; create a single innovation market and reform research and innovation systems. The EU innovation ecosystem must embrace Big Data, data flows, and data-driven innovation as a cross-sectoral priority to ensure future economic growth and jobs.

Coordinate all policies affecting data

Because data is increasingly understood as 'the lifeblood of the knowledge economy'[28], as has been shown in this paper, the sectoral or horizontal policies that affect Big Data span across government departments and services –from SMEs policy to education, healthcare, privacy and copyright.

It is often the case that while, on the one hand, a particular government or the European Commission may be supporting Big Data in their digital or innovation policy agendas, at the same time they are considering policies that will indirectly have a negative impact on data-driven innovation, e.g. by restricting data analysis. While respecting the protection of citizen's

[27] Communication on Europe 2020 Flagship Initiative: Innovation Union, 6 October 2010, COM(2010) 546 final.
[28] *Digital Britain,* Final Report, June 2009.

rights and preserving the values of our society, we need more horizontal, cross-policy coordination as the only means to truly harness the potential of Big Data.

Harnessing the potential power of Big Data needs to be a horizontal priority at EU and national level. Policies that affect data and its innovation capacity must be coordinated to ensure that the overall goal of leveraging the 'innovation currency' for the benefit of businesses, consumers, government and the society is always kept in sight.

Cross-border coordination

Much has been written about the global nature of data – data generated in one country may be processed in another and stored in a third or even multiple countries. Data do not have boundaries. With this view we have already addressed in this paper the need to ensure free flows of data across borders.

But all policies that impact Big Data and its growth potential must be coordinated at global level in order for our societies to benefit from data driven-innovation. Privacy, security, intellectual property, skills, infrastructure cannot only be regulated from a national or regional perspective. No one country will succeed alone; acting in a joint fashion will have three related advantages:

- First, it will ensure the necessary degree of harmonisation of the relevant legal and institutional frameworks, for example on cybersecurity and privacy, and of communication networks.

- Second, this will in turn maximise the economies of scale that have been at the core of European economic and financial integration from the very beginning.

- Third, it will help reduce growth and macroeconomic imbalances across European countries - imbalances that have played an important role in the recent economic crisis.

Global coordination is needed for all policies enabling or impacting data-driven innovation and growth. For data to deliver the true potential economic and societal benefits, outward-looking policies and transparent dialogue among countries and regions is critical.

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AmCham EU speaks for American companies committed to Europe on trade, investment and competitiveness issues. It aims to ensure a growth-orientated business and investment climate in Europe. AmCham EU facilitates the resolution of transatlantic issues that impact business and plays a role in creating better understanding of EU and US positions on business matters. Aggregate US investment in Europe totalled €1.9 trillion in 2012 and directly supports more than 4.2 million jobs in Europe.

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