



The Cost of Non-Europe in the Single Market

III - Digital Single Market

STUDY

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European Added Value Unit
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The Cost of Non-Europe in the Single Market (‘Cecchini Revisited’)

In May 2013 the European Parliament's Committee on Internal Market and Consumer Policy (IMCO) requested a Cost of Non-Europe Report in the field of the European Single Market. Cost of Non-Europe Reports are intended to evaluate the possibilities for economic or other gains and/or the realisation of a ‘public good’ through common action at EU level in specific policy areas and sectors.

In response to IMCO's request, the European Added Value Unit of the European Parliamentary Research Service (EPRS) has produced this Cost of Non-Europe Report, which seeks to analyse the costs for citizens, businesses and relevant stake-holders of remaining gaps and barriers in the Single Market, building on, and updating, the 1988 Cecchini Report which quantified its potential benefits.

In addition to a general paper bringing together the research findings as a whole, the exercise comprises five studies commissioned from outside experts on specific dimensions of the subject, which are published as separate documents:

I **Free Movement of Goods**

Study by RAND Europe

This study uses an econometric model to estimate the potential benefits of removing existing barriers to foreign direct investment and non-tariff trade barriers within the European Union. The removal of existing trade barriers could boost total intra-EU merchandise exports up to 7 per cent in the long-term. These effects will vary by Member State, and by sector of the internal market.

II **Single Market for Services**

Study by CEPS

This study attempts to take stock of the remaining gaps or deficits in intra-EU market access obligations in services, and the related deficits in the proper functioning of the internal market for services. It also tries to identify the quantitative and qualitative economic gains of overcoming the costs of non-Europe of the remaining fragmentation, insofar as the EU can address such deficits.

III **Digital Single Market**

Study by GHK

This study analyses the gaps in the European digital single market legislation which prevent attaining the benefits of a fully functioning e-commerce single

market. It provides a qualitative appreciation of the existing legislation, identifying gaps where further legislative action at European level could be beneficial and quantifying the direct costs of failure to legislate and the potential broader economic impact of closing the gaps.

IV **Public Procurement and Concessions**

Study by Europe Economics

One of the key benefits of the Single Market was expected to arise in the context of public procurement. This study updates the analysis presented in the Cecchini Report, estimates the value of savings to the public purse that have been achieved to date through European legislation on public procurement, and discusses the extent to which future savings might be achieved (in particular following approval of the proposals for new public procurement directives in January 2014).

V **Consumer 'Acquis**

Study by GHK

This study analyses the gaps in European consumer legislation. It provides a qualitative appreciation of the existing legislation, identifying areas where further EU legislative action could be beneficial, and provides tentative estimates of the costs of failure to legislate. It is not intended as comprehensive quantification, but rather as a 'snap shot' of some benefits which could be attained through completion of the consumer acquis.

The Cost of Non-Europe in the Single Market

- III -

Digital Single Market

**Study
by GHK**

Abstract

Cost of Non-Europe Reports identify the possibilities for economic or other gains and/or the realisation of a 'public good' through common action at EU level in specific policy areas and sectors. This Cost of Non-Europe Report seeks to analyse the costs for citizens, businesses and relevant stake-holders of remaining gaps and barriers in the European Single Market, building on and updating the 1988 Cecchini Report, which quantified its potential benefits.

This particular study - the third in a series - analyses the gaps in the European digital single market legislation which prevent attaining the benefits of a fully functioning e-commerce single market. It provides a qualitative appreciation of the existing legislation, identifying gaps where further legislative action at European level could be beneficial and quantifying the direct costs of failure to legislate and the potential broader economic impact of closing the gaps.

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List of abbreviations

ADR	Alternative Dispute Resolution
B2C	Business-to-consumer
B2B	Business-to-business
B2G	Business-to-government
C2C	Consumer-to-consumer
CESL	Common European Sales Law
CGE	Computable General Equilibrium
CISG	UN Convention on International Sales of Goods
CJEU	Court of Justice of the European Union
CRD	Consumer Rights Directive
CoNE	Cost of Non Europe
CPC	Consumer Protection Cooperation
DAE	Digital Agenda for Europe
DSM	Digital Single Market
EDI	Electronic Data Interchange
eID	Electronic Identification
eTS	Electronic Trust Services
EU	European Union
GDP	Gross domestic product
ICT	Information and Communications Technology
IMCO	Internal Market and Consumer Protection
IMI	Internal Market Information System
IPC	International Post Corporation
IT	Information Technology
JIT	Just-In-Time
Mbps	Megabits per second
MOSS	Mini One-Stop Shop
MS	Member State
NGA	Next generation access
NRA	National Regulatory Authorities
ODR	Online Dispute Resolution
OECD	Organisation for Economic Co-operation and Development

OJ	Official Journal
PIL	Private International Law
PSD	Postal Services Directive
PSD2	Payment Services Directive
PSI	Public Sector Information
R&D	Research and Development
SEPA	Single Euro Payments Area
SME	Small or medium enterprise
TEU	Treaty on European Union
TFEU	Treaty on the Functioning of the European Union
UK	United Kingdom
US	United States of America
USO	Universal Service Obligation
VAT	Value-added tax

Executive summary

The digital (or internet) economy accounts for a significant and growing proportion of EU economic activity. The functioning of the Digital Single Market (DSM) is increasingly important, supporting quality of life improvements for EU citizens and maintaining the EU's technological leadership and competitiveness in an increasingly globalised world.. The Digital Agenda for Europe (DAE) highlights the importance of completing of the DSM for EU policy makers, helping to foster innovation, growth and employment. The DAE is the first of seven flagships initiatives under Europe 2020, the EU's strategy to deliver smart, sustainable and inclusive growth.

The focus of this research paper is on the gaps in EU legislation which may constrain the functioning of the DSM and, to a certain extent on informational gaps and shortcomings in the implementation of existing EU-level legislation that can significantly hamper the functioning of the DSM.

This study considers legislation governing many aspects relevant for the DSM, including contract law, data protection and privacy, intellectual property and horizontal enablers of the DSM such as payment systems, e-Identification, postal and parcel delivery services.

The following gaps have been identified:

- In the area of cloud computing, the lack of liability of cloud computing service providers and the inconsistency of transnational laws and regulations.
- In the area of payments no major legislative gaps were identified. However, from the perspective of the functioning of the DSM the most important gaps are related to the substantial heterogeneity of commercial practices between Member States and the excessive costs of making cross-border payments.
- In the area of postal and parcel delivery, individual legislative gaps were not identified. However, considerable information gaps exist in relation to the availability of various delivery services and associated delivery options – both for consumers and e-retailers. It remains to be seen how much can be achieved by voluntary self-regulation of the sector and the adoption of best practices.

There are other gaps but estimates of the Costs of Non-Europe (CoNE) have not been made for three reasons:

- They are expected to lead to costs that are of an order of magnitude lower than those linked to the gaps identified above (e.g. the application of commercial guarantees to digital products, differences in standard contract terms and their presentation in Member States);
- The costs have already been quantified in other CoNE reports (e.g. conclusion of contracts through distance means by persons lacking full legal capacity); and
- The estimation of costs has not been attempted because of the particularly complex interactions in various aspects of the DSM (e.g. e-Identification and e-Authentication and consumer protection in the case of digital products).

The study follows a bottom-up approach to quantification of those gaps that have been explicitly identified and for which a quantification of direct costs was feasible. This contrasts with an approach typically adopted in other analyses trying to quantify the effects of completing the DSM that rely on top-down approaches where some general assumptions drive overall results.

The estimated direct CoNE associated with identified gaps ranged between € 36 billion to € 75 billion per annum. The mid-point of this range is around € 56 billion per annum (Table 1). These predominantly comprise of costs related to lower rates of adoption of cloud computing than would otherwise occur. The economic importance of IT systems and the reported scale of the benefits for users of cloud computing provide the basis for the high estimated costs.

Table 1 Estimated direct Cost of Non Europe (€ billion per annum)

Estimated direct CoNE	€ billion per annum		
	Lower bound	Mid-point	Upper bound
Cloud computing	31.5	47.3	63
Payments	2.2	4.4	6.6
Postal and parcel delivery	2.23	3.9	5.57
Total CoNE	35.9	55.6	75.2

The estimated CoNE reflects the foregone reduction in prices which would be achieved if the single market was complete. Building on these direct cost estimates, macroeconomic modelling was carried in order to assess the overall effect from closure of the identified DSM gaps. Macroeconomic modelling accounts for the wider indirect and induced impacts of these CoNE for the EU economy stemming from linkages between economic sectors, changes in productivity, the re-allocation of resources between sectors, and demand and supply responses. This modelling produced estimates of the likely scale of effects from the completion of the DSM at EU and Member State levels.

EU GDP is estimated to increase by around 0.4per cent in 2020 due to completion of the DSM. This is driven by a combination of the efficiency gains (modelled as lower prices) and additional investment. There are multipliers present within the EU; however there are also benefits for countries outside EU in terms of higher foreign trade including EU imports from this increase in GDP. Employment gains are estimated in the range of 0.1per cent which is equivalent to over 223,000 jobs created by 2020 due to the removal of identified gaps hindering the DSM. Average real wages also increase slightly, boosting household incomes.

There is no large variation in the magnitude of modelled effects between Member States, with GDP gains below 1 per cent in all countries.

1. Introduction

The “Cost of non-Europe Report on the Benefits of the Single Market (Cecchini Revisited): Research Paper on the Digital Single Market” is the result of an assignment undertaken by ICF on behalf of the European Parliament.

The Research Paper was commissioned in response to the report ‘*Better Governance of the Single Market*’ by Mr Andreas Schwab of the Internal Market and Consumer Protection (IMCO) Committee¹. The purpose of the Cost of Non-Europe (“CoNE”) reports is to evaluate the possibilities for gains and/or the realisation of a ‘public good’ through common action at EU level in specific policy areas and sectors.

The CoNE reports provide an appreciation of the accomplishments of existing legislation, identify ‘gaps’ where further legislative action at European level could be beneficial, and quantify the costs of failure to legislate in such cases. This paper focuses on the Digital Single Market (DSM) with a particular emphasis on e-commerce. The paper covers a broad area of policy and, should be read in conjunction with forthcoming CoNE reports relating to consumers, services, and public procurement in the single market. It also complements the 2013 study for the European Commission on ‘*The cost of non-Europe: the untapped potential of the European Single Market*’². Given the broad potential scope of DSM and its complex interactions with various spheres of the economy this report is not intended to be exhaustive but rather to provide concrete examples, from different areas, of the costs incurred by citizens and business and the wider economic effects due to shortcomings in the functioning of the internal market. This research paper fits within a much wider body of evidence on the gaps, inconsistencies and challenges of EU single market legislation which contribute to costs and uncertainty for EU business and citizens.

The paper is structured as follows:

- **Section 2** defines the scope of the study, introduces key definitions and provides a general overview of important aspects that are not covered;
- **Section 3** describes the methodological approach of this study;
- **Section 4** evaluates the current state of play regarding legislation governing the DSM;
- **Section 5** provides a quantification of the direct CoNE;
- **Section 6** presents the benefits from completion of the DSM in Europe and distribution of impacts across Member States; and
- **Section 7** provides concluding remarks.

¹ See also European Parliament resolution of 4 July 2013 on completing the digital single market (2013/2655(RSP)), <http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P7-TA-2013-0327&language=EN>.

² London Economics and PWC (2013), *Study on ‘The cost of non-Europe: the untapped potential of the European Single Market’* http://ec.europa.eu/bepa/pdf/publications_pdf/cone-report.pdf.

2. Scope of the research

2.1 Objectives of the research paper

The digital (or internet) economy accounts for a significant and growing proportion of EU economic activity. The significance of the digital economy was articulated in the Commission's Communication *'a coherent framework for building trust in the Digital Single Market for e-commerce and online services'*, which reported that in the G8 countries, South Korea and Sweden, the internet economy³ contributed around 21 per cent to GDP growth during 2006-2010⁴. Further, the digital economy generated 2.6 jobs for every job cut and at times accounted for 25 per cent of net employment creation⁵. The fulfilment of the potential of the DSM is also important for the achievement of the Digital Agenda for Europe⁶ (DAE) and the Europe 2020 Strategy *'A European strategy for smart, sustainable and inclusive growth'*⁷.

That the digital economy provides new opportunities for commerce based on the new technologies and markets the digital sector creates (e.g. social media and mobile based services) in addition to the changes and innovation the digital economy facilitates in the traditional economy (e.g. more efficient payment systems, new channels for conducting commerce, and approaches to production). Where barriers to the digital economy are identified that are not sufficiently addressed at Member State level, then EU level legislative action is considered to support the DSM achieve its potential as a contributor to EU growth and jobs.

The focus of this research paper is on 'gaps' in EU legislation which may constrain the functioning of the DSM and, to a certain extent, on informational gaps or gaps in the implementation of existing EU legislation that may significantly hamper the functioning of the DSM.

This study considers legislation governing many aspects of the DSM, including contract law, data protection and privacy, intellectual property and horizontal enablers of the DSM such as payment systems, e-identification, postal and parcel delivery services. In each case, the study considers the implications for businesses, public authorities and consumers in the DSM. This CoNE report addresses, inter alia, the following questions as set out in the terms of reference:

³ All activities linked to the creation and use of internet access networks as well as the services offered on the internet (IP telecommunications, manufacture and maintenance of IT material intended for Web, Internet-based service activities, and all activities using the internet as a medium, from e-commerce to online advertising).

⁴ McKinsey Global Institute (2011): *'Internet matters, the net's sweeping impact on growth, jobs and prosperity'*, May.

⁵ McKinsey (2011): *'Impact d'Internet sur l'économie française'*, March.

⁶ COM(2010) 245 final - A Digital Agenda for Europe, available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0245:FIN:EN:PDF>

⁷ <http://ec.europa.eu/eu2020/pdf/COMPLET%20EN%20BARROSO%20%20%20007%20-%20Europe%202020%20-%20EN%20version.pdf>

- What is the current state of play of the European DSM, and what gaps can be identified (in other words, in which areas within the DSM is there still a need for European legislation)⁸?
- What are the economic costs incurred due to gaps in the European DSM legislation, for the EU economy, and for the different stakeholders: the EU citizens; employees; economic operators; SMEs; the EU Institutions; Member States authorities (and other stakeholders)?
- What benefits can be expected from the completion of the Single Market in the field of the digital market? In particular, what cost reductions for the citizens, employees and businesses (in particular the SMEs) could be expected?
- What benefits can be expected from the completion of the DSM for Member States?

The quantification of the CoNE in this study considers two distinct types of impacts, requiring different methods to estimate each. Firstly, the direct CoNE, (i.e. direct costs borne by various economic actors due to lack of certain legislative provisions at the European level (or their subpar implementation)), are estimated. This has been done mainly on the basis of secondary evidence obtained from the literature.

Secondly, account has been taken of the ‘public good’ associated with completing the relevant gaps in legislation, by estimating the wider indirect and induced impacts of a failure to legislate in terms of growth, employment, and prices for the entire EU economy. This has been done with the support of macroeconomic modelling and specifically the E3ME macro econometric model⁹. The direct costs due to the incomplete DSM have broader economic impacts as there are strong linkages between different sectors and economic actors involved. For instance, broader adoption of certain IT solutions that may be hampered by gaps in the DSM may negatively affect productivity of EU businesses with broader implications for employment, real wages, etc. Macroeconomic modelling is an appropriate choice of method to account for such effects that are likely to be significant given the wide recognition of enabling role of IT for economic performance (Jorgenson et al, 2012; McKinsey&Co, 2002; OECD 2010)¹⁰.

The following sections introduce the broader policy context, define key concepts, delineate the issues within and outside the scope of this study, and discuss its methods and approaches.

⁸ The Terms of Reference state this should include: Common European Sales Law; Data Protection; E-identification Authentication; Collective Rights Management; Orphan Works; Re-use of Public Sector Information; Alternative Dispute Resolution; and, Online Dispute Resolution, etc.

⁹ The E3ME model has been developed by Cambridge Econometrics. Model details are provided in Annex 2.

¹⁰ Jorgenson, Dale W, Mun Ho, Jon Samuels (2012), *Information Technology and U.S. Productivity Growth*, in: Matilde Mas and Robert Stehrer (eds.) (2012) *Industrial Productivity in Europe: Growth and Crisis*, Edward Elgar Publishing; McKinsey&Co (2002), *How IT Enable Productivity Growth*, McKinsey Global Institute; and OECD (2010), *OECD Information Technology Outlook 2010*, Paris.

2.2 Background to the DSM

Completion of the DSM has been high on the European policy agenda for a number of years. The Digital Agenda for Europe (DAE) was the first of seven flagship initiatives under Europe 2020, the EU's strategy to deliver smart sustainable and inclusive growth, includes a specific Digital Single Market priority area¹¹. This priority area was composed of twenty-one different actions, some of which were considered key and summarised in the Single Market Act I (2011) and Single Market Act II (2012)¹².

In January 2012, the Commission adopted the Communication on e-commerce and other online services in line with the 'Digital Agenda' and the 'Single Market Act I' documents¹³. It identified five priority actions for the future to resolve any gaps in the DSM:

- Develop legal rules to facilitate cross-border offers of online products and services;
- Improve operator information and consumer protection;
- Ensure reliable and efficient payment and delivery systems;
- Combat abuse and resolve disputes more effectively; and
- Deploy high-speed networks and advanced technological solutions.

The document's action plan consisted of 16 main actions. The progress against these actions is reported by the Commission on an annual basis, and the last review (April 2013) concluded that many of the action points had been completed or were underway, such that the remaining gaps would be resolved in the near future. However, it also noted that full success of the plan would '*depend on appropriate follow up and concrete initiatives undertaken in the year(s) ahead*'¹⁴. It is the intention of this study to contribute to this debate by identifying gaps where possible follow-up initiatives could be considered in the future.

¹¹ See Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions. *A Digital Agenda for Europe COM(2010) 245 final*, available at:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0245:FIN:EN:PDF> ;
<http://ec.europa.eu/eu2020/pdf/COMPLET%20EN%20BARROSO%20%20%20007%20-%20Europe%202020%20-%20EN%20version.pdf>

¹² Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions. *Single Market Act Twelve levers to boost growth and strengthen confidence "Working together to create new growth", COM/2011/0206 final*; Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions. *Single Market Act II. Together for new growth COM (2012) 573 final*.

¹³ Commission Communication to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions. *A coherent framework for building trust in the Digital Single Market for e-commerce and online services, COM (2011) 942*,
http://ec.europa.eu/prelex/detail_dossier_real.cfm?CL=en&DosId=201268 .

¹⁴ '*E-commerce Action plan 2012-2015: State of play 2013*, Commission staff working document - SWD(2013) 153 final

http://ec.europa.eu/internal_market/e-commerce/docs/communications/130423_report-ecommerce-action-plan_en.pdf

The DSM policy agenda has also been shaped by several resolutions of the European Parliament and in particular by the Resolution on Completing the Internal Market for e-Commerce from September 2010 and the Resolution on completing the Digital Single Market from December 2012¹⁵.

2.3 Key concepts and definitions

2.3.1 The scope of the digital economy

The digital economy is multi-faceted and plays an increasing role in many aspects of everyday life for EU citizens, businesses, and public authorities. Some examples of what might be considered as within the scope of the digital economy include:

- E-government and e-healthcare services delivered by public authorities by digital technologies and electronic networks;
- Goods and services purchased/sold through online sales channels (e.g. internet and mobile sales);
- New goods and services created by digital technology (e.g. mobile apps, navigation systems, consumer and business services); and
- New business models enabled by digital technology (e.g. click-and-collect, e-payment systems, JIT supply chain management, increased tailored production).

In some situations, the digital economy complements the traditional economy by improving efficiency, adding to an existing offer (e.g. complementary aftersales services) and attracting businesses/ consumers in a larger market than was previously possible (e.g. cross border internet sales). In other areas, the digital economy actively competes with the traditional economy. Examples include new business models and products made possible by the digital economy, such as online classified directory services, music and film downloads, e-books, mobile hotel and airline booking, hotel/hospitality business models where individuals rent out their homes or spare bedrooms, 'Big data' used by companies to better tailor products and marketing, etc.

When considering the scale of the CoNE, two components of the digital economy are relevant. Firstly, there are the 'platforms' on which many the products and services identified above are dependant. This includes the electronic networks which are used to communicate information, either through fixed line internet connection or mobile internet. For businesses, local networks linking different elements of the supply chain (warehouse/supplier to retail store) are also important. Electronic hardware, such as computers, tablets and mobile phones are part of these 'platforms'.

The second component is the services which are enabled by digital platforms, including the examples identified above. The platform component involves high fixed costs (to

¹⁵ European Parliament resolution of 21 September 2010 on completing the internal market for e-commerce (2010/2012(INI)); European Parliament resolution of 11 December 2012 on completing the Digital Single Market (2012/2030(INI)).

connect consumers, businesses and public authorities to electronic networks), It is likely that the service component has the greatest potential for growth and jobs, as new products and solutions are developed which bring benefits to the EU economy.

In practice it more difficult to separate the impacts of the two components. Furthermore differentiating between what belongs to the digital and what to the traditional economy is not easy as business models and services have intertwined.

To add confusion, the literature often uses the terms Internet Economy, New Economy, and Web Economy interchangeably to refer to the entirety or a fraction of the digital economy.

Summarising the literature in this respect, Barua et al (2000) defines the digital economy in four layers, in which each has a complementary relationship with every other layer, and each is to some degree dependant on every other layer. The first two layers relate to the infrastructure component of the digital economy which makes economic activity over the internet and other electronic networks technically feasible. Layers 3 and 4 relate to the economic activity which takes place and is enabled by the physical technology in layers 1 and 2. The layers are defined as follows:

- **Layer 1: Electronic Networks** includes high-speed IP-based networks and applications which deliver broadband services or mobile telephony networks (i.e. 3G and 4G) across Europe.
- **Layer 2: Applications** includes consulting, training, and integrations services, such as broadband communication providers, delivering the internet access to households and businesses.
- **Layer 3: Intermediaries** involve third parties to online transactions who provide market-maker services, domain expertise, and certification that enable buyers to choose sellers and products, and search, plus retrieval and aggregation services that lower online transaction costs. Examples are Google, Yahoo and eBay which provide the platforms for e-commerce services and transactions to take place.
- **Layer 4: Online transactions** refer to direct transactions between buyers and sellers online. This includes online retailing, media services and software provision.

Mesenbourg (2001)¹⁶ condenses the above layers in to three main components of the digital economy:

- **supporting infrastructure** – hardware, software, telecoms, networks, etc.;
- **e-business** (how business is conducted, any process that an organisation conducts over computer-mediated networks); and
- **e-commerce** (transfer of goods or services, for example when a book is sold online).

¹⁶ Mesenbourg, T.L. (2001) Measuring the Digital Economy, U.S. Bureau of the Census

Recent innovations such as social media, Web 2.0 services, and cloud computing have, however, blurred the lines between e-business and e-commerce adding further complexity to defining the relevant components of the digital economy.

2.3.2 Definition of E-commerce

The 2009 revised OECD definition refers to e-commerce transaction as:

“the sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing of orders. The goods or services are ordered by those methods, but the payment and the ultimate delivery of the goods or services do not have to be conducted online. An e-commerce transaction can be between enterprises, households, -individuals, governments, and other public or private organisations. To be included are orders made over the web, extranet or electronic data interchange. The type is defined by the method of placing the order. To be excluded are orders made by telephone calls, facsimile or manually typed e-mail.”¹⁷

Eurostat uses the following definition(s) of e-commerce:

Eurostat definition of e-commerce

E-commerce can be defined generally as the sale or purchase of goods or services, whether between businesses, households, individuals or private organizations, through electronic transactions conducted via the internet or other computer-mediated (online communication) networks.

The term covers the ordering of goods and services which are sent over computer networks, but the payment and the ultimate delivery of the goods or service may be conducted either on- or off-line.

For the Community survey on ICT usage in households and by individuals, e-commerce by individuals or households via the internet is defined more specifically as the placing of orders for goods or services via the internet. Also included in the definition are:

- buying financial investments - such as shares;
- confirming reservations for accommodation and travel;
- participating in lotteries and betting;
- paying for information services from the internet; and
- buying via online auctions.

Orders via manually typed e-mails, however, are excluded.

For the Community survey on ICT usage and e-commerce in enterprises, e-commerce refers to the placement of orders (an order is a commitment to purchase goods or services) via computer networks. E-commerce may be effectively done via websites (which allow for online ordering or reservation or booking, e.g. shopping cart) or an exchange of electronic messages, EDI-type messages. EDI-type (Electronic Data Interchange) e-commerce refers to structured transmission of data or documents between enterprises by electronic means allowing automatic processing using for example EDI format or XML format.

Orders via manually typed e-mails, however, are excluded. Delivery or payment via electronic means is not a requirement for an e-commerce transaction.

Source: Eurostat glossary: E-commerce;

http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:E-commerce

¹⁷ OECD Guide to Measuring the Information Society 2011. Paris 2011.

<http://www.oecd.org/internet/ieconomy/oecdguidetomeasuringtheinformationsociety2011.htm>

A concise form of the OECD / Eurostat definitions is provided in the 2011 Commission Communication (COM (2011) 942) where e-commerce is understood as “the sales and purchases made via internet sites or electronic systems, excluding the sending of orders which have been typed manually”¹⁸.

Four main forms of e-commerce transaction are identified which can be conducted electronically over the Internet¹⁹. They are business-to-business transactions (B2B), business-to-consumer transactions (B2C), business-to-government (B2G), and consumer-to-consumer transactions (C2C). The B2G segment of e-commerce is considered outside the scope of analysis as public and E-procurement is covered in another forthcoming CoNE study.

Regarding B2C transactions, the literature suggests an on-going process of blurring borders between online and traditional (offline) transactions. Consumers buying in traditional shops often use on-line tools to make price comparisons, to check product reviews, etc. The blurring distinction between e-commerce and the traditional commerce can be illustrated by the following quote:

“According to the U.S. Census Bureau, which tracks economic data, only 5.2 per cent of U.S. retail purchases were made online in 2012 (13.1 per cent if you don't include gasoline, groceries, or automobiles). So in-person sales still dominate. But these figures underestimate the effect of the Internet. When stores like Best Buy survey their customers, they find that 80 per cent of them have already searched for price information online. A third of them do so on a phone while inside a store.”²⁰

2.3.3 The focus of this study

The approach taken in this study is to focus attention on the legislative gaps related to service layers on top of the basic infrastructure provided within the first layer (‘electronic networks’) by Barua et al (2000) or ‘supporting infrastructure’ in the terminology of Mesenbourg (2001). This approach is consistent with the one taken in Copenhagen Economics (2010) study²¹. Practical considerations in relation to the feasibility of the research has also driven the scope of the study, taking into account the complexity of legislation (or lack thereof) affecting the DSM. . The areas within the scope of the study are: several components of the European contract law; business to business on-line contracts; data protection and on-line privacy; intellectual property; and, areas enabling administrative simplification and more broadly acting as enablers of DSM such as e-Identification authentication, agency and legal capacity in on-line situations, payments, and postal and parcel delivery services.

¹⁸ Commission Communication to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions. *A coherent framework for building trust in the Digital Single Market for e-commerce and online services*, COM (2011) 942, http://ec.europa.eu/prelex/detail_dossier_real.cfm?CL=en&DosId=201268.

¹⁹ Cf. <http://www.oxforddictionaries.com/definition/english/e-commerce> .

²⁰ MIT Technology Review (November 2013), <http://www.technologyreview.com/news/520786/its-all-e-commerce-now/>

²¹ Copenhagen Economics (2010), *The Economic Impact of the European Single Digital Market*, http://www.epc.eu/dsm/2/Study_by_Copenhagen.pdf

The next sub-section provides a brief overview of issues related to telecommunication networks and other areas that are not considered in-depth to provide background to the current study.

2.3.4 Important issues not covered by this study

Two important issues not in the scope of the study are:

Telecommunication networks

Telecommunication networks and in particular those with wide bandwidth characteristics (broadband) are a key infrastructure element enabling electronic communication and the provision of on-line services. The key importance of improving quality of this infrastructure and widening access to it is reflected in the Communication from the Commission entitled *'The Digital Agenda for Europe – Driving European growth digitally'* that set ambitious targets to bring basic broadband to all Europeans by 2013, and to ensure that, by 2020, all Europeans have access to internet speeds of above 30 Mbps and at least half of subscribers have internet connections with speeds of above 100 Mbps.

Recent important legislative initiatives in this area include Directive (2014/61/EU) on measures to reduce the cost of deploying high-speed electronic communications networks adopted in May 2014 and the Draft Regulation laying down measures concerning the European single market for electronic communications and to achieve a Connected Continent ('Connected Continent')²².

Directive (2014/61/EU) aims to address one of the important obstacles to faster development of broadband namely relatively high costs of deploying high-speed electronic communications networks. In particular it addresses an important part of the costs that can be attributed to *"inefficiencies in the roll-out process related to the use of existing passive infrastructure (such as ducts, conduits, manholes, cabinets, poles, masts, antenna installations, towers and other supporting constructions), bottlenecks related to coordination of civil works, burdensome administrative permit granting procedures, and bottlenecks concerning in-building deployment of networks, which lead to high financial barriers, in particular in rural areas."*²³

The 'Connected Continent' proposal was adopted by the European Parliament in 1st reading in April 2014 and there is currently a political agreement on Council Position²⁴. In the Parliament's opinion, the key objectives of the Regulation should be to:

²² Directive 2014/61/EU of the European Parliament and of the Council of 15 May 2014 on measures to reduce the cost of deploying high-speed electronic communications networks. <http://www.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2013/0309%28COD%29&l=en>

²³ Directive 2014/61/EU of the European Parliament and of the Council of 15 May 2014 on measures to reduce the cost of deploying high-speed electronic communications networks.

²⁴ Detailed information on the legislative process can be found at: <http://www.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2013/0309%28COD%29&l=en>

- “facilitate the practical exercise of the right of providers of electronic communications services and networks to operate their networks and to provide services irrespective of where the provider is established or its customers are situated in the Union through a harmonised and simplified notification system based on a harmonised template;
- achieve a more coordinated Union framework for harmonised radio spectrum for wireless broadband communications services;
- address the phasing out of unjustified surcharges for roaming communications within the Union²⁵.”

As regards existing estimates of gains from achieving single market in telecommunication infrastructure, the MICUS (2009) study for the European Commission provides an analysis of the impact of broadband on productivity²⁶. It looks at some microeconomic evidence on productivity gains from broadband access and then constructs macroeconomic scenarios by multiplying the observed microeconomic impacts. Identified potential sector-specific productivity gains are then transposed into employment and value added effects. Broadband-related activities are found to contribute 0.7 per cent of the growth of the European GDP in the base year (i.e. 2006). Building on these results three scenarios are developed based on historically observed speed of adoption of on-line services in various EU countries (advanced ones, laggards and the European average).

The Copenhagen Economics (2010) study considers the difference between two trends of broadband adoption scenarios²⁷:

- “Base case”: The speed of adoption of online services continues at the speed during the period 2004-2006.
- “Best case”: The speed of adoption of online services increases to that of advanced knowledge societies (Belgium, Denmark, Finland, Luxembourg, Netherlands and Sweden). The adoption rate in these countries was on average 4.1 per cent during 2004-2006. The advanced knowledge societies are also better at taking advantage of online services. Therefore, the best case scenario has both a higher adoption rate and a greater effect on GDP.

These scenarios are simulated over a ten year horizon and the difference between cumulative GDP growth at the end of the period (i.e. by 2020) is taken to represent an impact of the DSM. This difference is in the order of 4 per cent of GDP, i.e. by 2020 a completion of the DSM is estimated to lead to 4 per cent higher GDP level than would be possible without additional efforts (i.e. continuation of trends assumed in the MICUS 2009 study). The specific effects of DSM, including consumer welfare gains are discussed qualitatively, but not quantified.

²⁵ European Parliament, Summary 2013/0309(COD) - 03/04/2014,

<http://www.europarl.europa.eu/oeil/popups/summary.do?id=1345346&t=e&l=en>

²⁶ MICUS (2009), *The Impact of Broadband on Growth and Productivity*.

http://breitbandinitiative.de/wp/wp-content/uploads/2009/04/2008_micus-studie-broadbandeu_long.pdf

²⁷ Copenhagen Economics (2010), *The Economic Impact of the European Single Digital Market*,

http://www.epc.eu/dsm/2/Study_by_Copenhagen.pdf .

The overview of existing studies on the benefits of wider broadband adoption can be found at the European Parliamentary Research Service²⁸.

The wide benefits from improved quality of telecommunication network, wider access to and lower cost of broadband Internet access are substantial. As discussed above their quantification is possible in some circumstances and has been attempted in several studies. Still, quantification remains a very challenging undertaking that does not necessarily promise to add value to qualitative assessment. For instance the European Commission's impact assessment accompanied the proposal for a Regulation on measures to reduce the cost of deploying high-speed electronic communications networks remained at the level of qualitative assessment and comparison of considered options²⁹. To enable meaningful interpretation of the CoNE analysis would require the precise attribution of costs to the lack of specific EU legislation (or implementation issues). This is something that is a complex undertaking and risks double counting when considering the implication of broadband adoption and supporting legislation for the DSM. For these reasons, the digital infrastructure in the form of telecommunication networks is considered outside the scope of this study.

Taxation

Taxation and VAT in particular is one important issue with implications for e-commerce. In the context of cross-border e-commerce the underlying issues are differences in VAT rates observable in three dimensions³⁰:

- VAT rates applied by Member States differ, in some cases quite substantially;
- VAT rates in some cases differ between physical and electronic version of the same product (e.g. printed book and e-book); and
- VAT treatment applicable to certain suppliers can provide them with an advantage relative to alternative suppliers in the distribution or facilitation of the e-commerce trade, e.g. universal post service providers may be able to apply VAT exemptions to transporting physical goods.

Also relevant are substantial cost of compliance with VAT rules. The estimate of total administrative costs imposed by the European VAT system is around € 80 billion, or roughly 10 per cent of total VAT revenues (as of 2009)³¹.

²⁸ <http://epthinktank.eu/2013/10/29/deploying-ultra-fast-broadband-2/>

²⁹ <http://ec.europa.eu/digital-agenda/en/news/impact-assessment-accompanying-document-proposal-regulation-european-parliament-and-council>

³⁰ *Simplifying and Modernising VAT in the Digital Single Market for e-Commerce*, Study for the European Parliament, IP/A/IMCO/ST/2012_03. PE 492.432. September 2012.

³¹ Capgemini, Deloitte and Rambøll (2010), *EU Project on Baseline Measurement and Reduction of Administrative Costs - Final Report - incorporating report on Module 5.2 - Development of Reduction Recommendations* (http://ec.europa.eu/smart-regulation/refit/admin_burden/docs/enterprise/documents/files/abs_development_reduction_recommendations_en.pdf). *Simplifying and Modernising VAT in the Digital Single Market for e-Commerce*, Study for the European Parliament, IP/A/IMCO/ST/2012_03. PE 492.432. September 2012. <http://www.retailresearch.org/eurovat.php>

Differences in VAT related administrative procedures between Member States are also a concern, highlighted in other studies. On average, a firm trading in two Member States would have to deal with 11 administrative differences, creating a cost burden for businesses which hampers the functioning of the internal market and discourages cross-border trade. One study estimated that a 10 per cent reduction in administrative differences in VAT procedures could boost intra-EU trade by up to 3.7 per cent and GDP by up to 0.4 per cent³².

No study could be found in the literature which estimates these administrative costs for e-commerce businesses and consumers. However, on the basis that there were 283 billion non-cash payments in 2013, of which 28.3 billion were e- or m-commerce payments³³, it is estimated that 10 per cent of the administrative cost can be attributed to electronic payments. This equates to around an €8 billion cost which could be reduced by taking action.

Stakeholders interviewed for a 2012 study for the European Parliament indicated that VAT registration is a major administrative barrier in the Member States, it is a prominent issue for many e-commerce distance sellers to specific markets (given that country of destination rule applies to VAT for suppliers' of goods whose annual sales exceed country-specific thresholds)³⁴. Another potential compliance problem stated in interviews is a change in place of taxation rules from 2015³⁵ which is expected to increase administrative costs for traders. In the case of B2C digital services sales, the place of taxation will change from the place of supplier to the place of customer. The administrative costs related to this may be related to the need for identifying the place of consumer and the need to comply with divergent administrative requirements in a Member State other than the traders own (e.g. the storage of information requirements). A mini one-stop shop (MOSS) scheme will be established for EU-based businesses in 2015 to reduce the cost burden associated with VAT registration costs across Member States. However, some business stakeholders are not convinced MOSS will actually ease the burden³⁶.

Ecommerce Europe, the association representing more than four thousand companies selling products and/or services online to consumers in Europe, states that the lack of a common European VAT system is the biggest barrier to online cross-border sales. It thus

³² *A retrospective evaluation of the elements of the VAT system*, Study for the European Commission, TAXUD (2011); Institute for Fiscal Studies (Project leader)
http://ec.europa.eu/taxation_customs/resources/documents/common/publications/studies/report_evaluation_vat.pdf

³³ Capgemini (2014): World Payments Report 2013, available at:

<http://www.capgemini.com/resources/world-payments-report-2013>

³⁴ *Simplifying and Modernising VAT in the Digital Single Market for e-Commerce*, Study for the European Parliament, IP/A/IMCO/ST/2012_03. PE 492.432. September 2012.

³⁵ In line with Council Regulation (EU) No 967/2012 <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:290:0001:0007:EN:PDF>

³⁶ PWC (2013), EU: *Mini one stop shop 2015 – the basics*. <http://ebiz.pwc.com/2013/03/eu-mini-one-stop-shop-2015-the-basics/>

supports the conclusions of the European Parliament report on the simplification and modernisation of the EU VAT system³⁷. However, other sources comparing the EU and US markets consider the US complex system of state and local taxes a more significant barrier than the lack of harmonisation of VAT rules in the EU³⁸.

There may well be scope for EU legislative action to harmonise VAT rates (at least between physical and digital products so that ebooks are treated equally to printed books), and to reduce the administrative costs of compliance with VAT rules, specifically those concerning cross-border e-commerce transactions.

Clearly, the VAT regime and the practical administration involved for businesses engaged in cross-border trade is a relevant obstacle, especially for SMEs. -The added costs of conducting trade cross border is a possible source of market distortion affecting competition and competitiveness in the internal market. However the complexity of European VAT systems which must be coherent, systematic, and efficient (for businesses, consumers, and public authorities) as well as evasion and fraud proof makes this a complex area for reform. Due to these competing objectives, these issues remain outside the scope of this study and are best addressed in a separate CoNE assessment to explore many of the legislative changes and initiatives which have already taken place³⁹.

2.3.5 Gaps

The notion of a 'gap' in EU legislation relevant to the DSM is of key importance for this study, hence the need to carefully describe what is understood by the term 'gaps'.

In a national domestic context, there are no 'gaps' in civil law as courts invariably find answers based on statutes, interpretation, or precedence. Within such judgments is a consideration of jurisdiction, whether the clauses of law are valid and the circumstances under which the plaintiff is or is not entitled to performance, payment or damages. Provided a judgement is reached, there is no gap.

As only a fraction of disputes or other such issues actually reach court, what becomes increasingly important is the 'shadow of the law'. The 'shadow of the law' is based on the potential and eventual decision of the courts (and their likelihood) which is used to govern all those other transactions, disputed or not, and which forms the background for the real life behaviour of commercial actors. For example, in anticipation of a judgment (based on written or case law) the shadow of the law determines the plea of the actors or deters what might be considered as infringing behaviour.

Thus, in civil law, as a matter of concept, there are no 'gaps'. Rather, Member State civil courts if called upon will invariably find an answer to any question posed.

³⁷ European Parliament (2012), *Simplifying and Modernising VAT in the Digital Single Market for e-Commerce*, IP/A/IMCO/ST/2012_03.

³⁸ <http://www.retailresearch.org/eurovat.php>

³⁹ One of the changes is the new VAT on e-services rules coming into effect on 01.01.2015 (Directive 2008/8/EC).

As an example, a trader in cloud computing may offer such services using standard terms by which, the consumer – by using these services – automatically agrees that the data may be stored outside of the EU, that the customer's data may be analysed "anonymously" for commercial purposes and that, the trader makes no warranty that the service will be uninterrupted, timely or error free, shall not be liable for any special, consequential, incidental or other indirect damages including, without limitation, lost profits or revenues, costs of replacement products or services, loss or damage to information or data arising out of the use or inability to use the service.

The trader can of course challenge these 'norms', however the court will always reach a judgement either in the trader's or customer's favour. Consequently and in theory at least there should be no gaps at domestic level.

If this example is brought to a Member State's courts by a consumer who has lost important data, the courts called upon would have to decide various questions as to its jurisdiction, and whether these clauses are valid, and if the consumer, under the circumstances of the case, can claim damages, or not. Without doubt, the court will find a judgment for, or against the consumer. There will be no "gap". The only question that may remain national is whether the court's solution is also in line with general public policy in similar areas.

Only a very small proportion of losses and damages are disputed and only a very small proportion of disputes are ever tried in court. Yet it is the potential and eventual decision of the courts (and their likelihood) which creates the 'shadow of the law' which will govern all those other transactions, disputed or not, and which forms the background for the real life behaviour of commercial actors.

European regulation of civil law is different to domestic arrangements. More specifically, while upholding Member State's law and procedures in general, European legislation of civil law may:

- Fully regulate a particular field leaving little room for Member State's variations;
- Harmonise the law in an area of law or even just on a particular issue to a stronger or lesser degree; or
- Just limit itself to delegating which court should have jurisdiction⁴⁰, and/or which Member State's laws should apply to the case (international private law)⁴¹.

A European legal regulation may take the form of regulating all types of civil legal transactions in any such area, (e.g., in order to provide level playing fields or a high standard of consumer protection), or may be limited to cross-border interactions and its consequences. Due to the principle of subsidiarity and its historic development,

⁴⁰ For the most part fully regulated by the "Brussels Regime".

⁴¹ For many areas of civil law regulated by the "Rome Regime".

European regulation of civil law is by nature piecemeal and sectoral. A formal 'gap' could then be present where, none of the above applies and where, in practice, Member States' courts are left without any form of harmonisation in an area which could be regulated on a European level.

In addition to formal gaps, there are 'qualitative' gaps. Independent of the formal definition, qualitative gaps occur where, the regulation of a specific area falls short in levels of protection of other, similar or related areas. Taking the example above, both types of gaps might be present. European law might not be sufficiently harmonised for a uniform solution to the legal questions to be found. Some Member States may treat data stored in a cloud simply as a service resulting in a low level of liability for data loss, while other Member States may define data as private property similar to tangible goods, with data loss akin to the destruction of an item and leading to high levels of protection and thus, liability. In the first group of Member States, the protection of consumer rights may therefore be weaker than for other similar types of goods or services. Approaches to legislating digital content are typically fragmented due to these qualitative gaps, limiting interoperability and increasing legal uncertainty for business and consumers acting cross border between Member States.

The principle of subsidiarity in civil law ensures that it is not the role of European law to fully regulate or harmonise all questions of law but only those that have a sufficient European or cross-border impact. Gaps may therefore exist in civil law where thresholds of cross-border effects are not clearly defined or measured leading to ambiguity in how law is applied between Member States.

Applying these principles to the DSM, a 'gap' in the European regulation of the DSM would occur either when the 'gap' originally concerns cross-border trade irrespective of the type of interaction but has more effect on the digital economy, or when the digital economy itself is not properly regulated and where such 'gap' then has particular effects on cross-border trade:

- Harmonisation does not exist for a legal question which is relevant for e-commerce or other aspects of the digital economy. As a result, different Member State laws apply. For business and consumers, this leads to compliance costs, adds legal uncertainty and creates practical and emotional barriers to trade.

The source of this 'gap' may be found either in historical practices or in new developments. In the former, it should be remembered that EU legislation has always been a sectoral, piecemeal and step-by-step approach, taking into account the legal basis established in each area and the principle of subsidiarity. Consequently, there are a number of issues which have intentionally not been regulated on an EU level or have deliberately been postponed. In the latter situation, technological or commercial advancement may lead to gaps which are not yet covered by EU law.

A similar effect may occur to a lesser degree in areas where harmonisation does occur in minimum standards with diverging implementation of EU law among the Member States.

- Harmonisation does exist, but leads to inadequate solutions. Technological or commercial advancement may lead to situations where, a particular practice is theoretically properly covered by harmonised law but where the effects are undesirable, contradicting the aims of the treaty, or regulatory purposes (often stated in the preambles), or EU policies.
- Harmonisation does exist but implementation, supervision and enforcement by Member States is poor.
- Harmonisation does exist but, it is met by very different real life commercial practices among the Member States. The same legal rule can thus have quite diverse effects in different Member States.
- Harmonisation does exist, but there is lack of knowledge of the law and thus its provisions and advantages are not properly used in practice.

Yet another form of a gap relates to enforcement of rules where, in law, no gap should exist. In e-commerce, traditional modes of enforcement of law are particularly ill-equipped and designed. Most individual transactions are of low value making (both national and even more so cross-border) *individual legal redress* far too complex and costly for individual consumers to pursue. On the other hand, *collective forms of redress*, as well as administrative or private pursuit of consumer protection (e.g. through the Consumer Protection Cooperation Regulation (CPC)) and intervention is often not well equipped or too slow to follow up on fast moving and developing trends in the digital market.

By the time an illegal on-line trading practice comes to the attention of law enforcement agencies (in the case of outright criminal activities) or to the attention of ombudsmen, authorities or consumer associations (in the case of plain rogue trading) such activities may already have ceased, moved or modified operations, leaving a trail of damage behind. Left alone, state authorities as well as consumer associations often lack the technical capacity to continually supervise or understand such activities, and to take action.

When breaches of the law are not brought to court, there is also a deficit in the shadow of the law which is the background for all other transactions, and it creates legal uncertainty due to the lack of knowledge on the law that should apply, if disputes were ever decided by a court.

Sometimes, there is no real formal or quality 'gap', nor is there any real lack of knowledge by the actors concerned (at least of the general principles). The law may be fully and perfectly harmonised and designed for its purpose. Yet there may be legislative need where the solution is impractical and/or leads to unintentional effects.

While such effects are not in the true essence the target of a study that deals with 'gaps', it is necessary to identify such shortcomings.

As many of the scenarios highlighted above co-exist, drawing boundaries between each to define the most relevant gap is not always straightforward. The primary focus of this paper is on cases where there is no harmonisation and introducing it could improve functioning of the DSM. Whenever this is feasible, this paper also looks at cases where harmonisation exists but it does not enable the smooth functioning of the single market because of the issues identified above and where further EU legislative action could alleviate the identified gaps.

2.3.6 Cost of non-Europe

The CoNE refers to the economic and social costs presently borne by EU citizens, economic operators and governments, directly and indirectly due to gaps in EU legislation. By completing or improving the EU legislation relevant for the DSM it might be possible to partly or fully eliminate these costs. The estimates of costs are hence upper limits of the benefits forgone by incomplete e-commerce legislation. At the same time, there is a distinction between direct costs, e.g. higher prices of certain goods and services and indirect costs that can be calculated when taking into account interactions between various economic sectors and market players. This distinction is explicitly handled in the next section.

3. Method of approach

This study had a methodological approach comprising of four tasks:

- Task 1: Evaluates the current state of play of legislation in the DSM
- Task 2: Quantifies the Cost of Non-Europe
- Task 3: Estimates the benefits of completing the DSM; and,
- Task 4: Estimates the benefits of a complete DSM for selected Member States.

Each task is elaborated below.

3.1 Task 1 Current State of Play in the European Digital Single Market – identification of gaps in E-commerce-related legislative gaps

This task was based on the review of up-to-date information on existing DSM and e-commerce related legislation and, to a certain extent, its implementation. It identified gaps above, that is:

- Cases where there is no harmonisation and introducing harmonisation could improve the functioning of the e-commerce market;
- Cases where harmonisation exists but it does not enable smooth functioning of the single market and further legislative action at the EU level could alleviate some of the ensuing CoNE; and/or
- Cases where gaps are related to lack of information or other implementation issues.

Gaps affecting e-commerce can have various causes:

- **Weaker legal protection or legal certainty in e-commerce in general as compared to 'traditional' transactions.** While provisions exist for traditional B2C or B2B transactions, gaps in legislations may exist which mean provisions do not apply, or there is uncertainty as to whether they apply, to online transactions. This could include rights to withdraw from contracts involving digital content or transactions undertaken on Web 2.0 services, or involving liability. Substantive gaps and legal uncertainty prevent consumers gaining confidence in the single market and trading cross-border. Legal uncertainty leads to a reluctance to trade cross border and can result in businesses paying for legal advice. Choice would consequently be limited to on-line buyers and prices may be higher than they might otherwise be as higher costs on business are passed on.
- **Overlaps between legislation governing e-commerce transactions.** Legislative provisions can overlap as legislation is created or updated at different times, generating uncertainty for businesses and consumers alike, with similar outcomes to the previous bullet point..

- **Absence of legal protection or legal certainty due to technological advances or business models.** Technological advances create new products, models of contract and opportunities to trade, in which gaps in the existing legislation can emerge as these innovations were not foreseen when legislation was originally written. In such cases, a legislative gap may have emerged which is costly to both sides of a transaction, requiring both parties to negotiate their own terms and conditions, seek legal advice or may simply decide not to trade cross-border damaging the prospects of the DSM. In some cases businesses may have developed new practices circumventing prior existing legal mechanisms.
- **Approaches taken to legislate in the area of e-commerce.** Many EU directives contain flexible (typically minimum harmonised) provisions to allow Member States to go beyond minimum provisions or implement EU legislation to best align with national legislation. Sometimes such harmonisation is not sufficient and differences can emerge which undermine consumer and business confidence in the internal market, by creating legal uncertainty.

Clearly, the above categorisation may be overly simplistic in some specific cases. Legislative instruments on their own are unlikely to resolve cross border differences and remove the CoNE. For example, consumers must have knowledge of rights conferred upon and businesses must have sufficient understanding of their obligations for the legislation to be effective and efficient. While awareness raising and information sharing is an important EU competency; education, enforcement and legal procedures are competencies which lie with the Member States.

Many of the points raised above are highlighted in the Commission's communication:

"A coherent framework for building trust in the Digital Single Market for e-commerce and online services"⁴², which states: "'Internet Europe' is still a patchwork of different laws, rules, standards and practices, often with little or no interoperability. This hinders the development of online services and undermines the confidence of existing or future users on both the supply and the demand side. Lack of knowledge of the rights conferred, the applicable rules and the opportunities that the digital economy offers reinforces their reluctance".

3.2 Task 2: Quantifying the Costs of Non Europe

Following identification of relevant legislative gaps, further analysis was undertaken to operationalise and quantify the CoNE of each. This was primarily done on the basis of existing literature combined with other data sources. Quantification focussed on the direct costs incurred by stakeholders due to the absence of EU level legislative action and or implementation / limited information issues.

The specific approach differs between individual gaps reflecting the various mechanisms at play. In broad terms the identified costs can be classified as falling into one or more of the following categories:

⁴²COM(2011) 942 final - Coherent framework for building trust in the Digital Single Market for e-commerce and online services, available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0942:FIN:EN:PDF>

- **Costs of resolving uncertainty.** Often with no previous experience of selling or purchasing from a Member State other than their own, businesses and consumers may wish to check the conditions under which they intend to enter a contract, including whether the obligations and protection offered by regulation are the same as in their own national market.
- **Costs of cross-border trade.** There are various costs associated with existing formal barriers, features of national borders (e.g. language differences) and other transaction costs. Differences in languages and culture may require changes to packaging and labelling increasing the costs to business which are ultimately passed on to consumers. Many of these costs are deeply rooted in the cultural and linguistic diversity of the EU and cannot be addressed by legislation. However, some barriers may be potentially addressed by legislative actions. For example, attractiveness of e-commerce relies on safe, easy to use and low-cost modes of payment on the one side, and safe, easy to use and low cost modes of shipping and transportation of goods that are purchased online on the other side. Having fast, efficient and competitively priced postal services for cross-border deliveries can therefore be an important factor in deciding whether to sell or purchase cross border.
- **Costs of seeking redress or justice.** Should a trade go wrong for either the buyer or seller, then it should be possible that the relevant party can seek redress for a faulty good or service, and if necessary seek justice where injury or compensation is sought. Cross border and domestic cases should be broadly equivalent if businesses and consumers are confident to trade in single market, although the language difference will always remain a barrier increasing the cost of cross-border cases. However, at the more basic level not knowing which authority to contact and the procedures to follow can already be costly and have a negative impact on stakeholder willingness to trade cross border. Another source of uncertainty is enforcement, when the consumer or business may feel the law is not consistently applied or that judgments and sanctions are not comparable cross border. In such case this implies an uneven playing field exists cross border which deters trade.
- **Costs of limited competition in a given market.** Certain features of a market may limit competition and hence make it easier for certain market players to use their market power to raise prices above levels that are attainable in a scenario with stronger competition. Legislative gaps may help them do that.

There is little recent literature on the above costs since the mid-1990s when micro- and macroeconomic studies formed the basis for the development of the first Brussels Regulation.⁴³ Since then it has been recognised that an imperfect single market does

⁴³ *Cost of Judicial Barriers for Consumers in the Single Market* (1995), a report for the European Commission - www.freyvial.de/Publications/egi-2.pdf; and *Cost of Legal Obstacles to the Disadvantage of Consumers in the Single Market* (1998) - http://ec.europa.eu/dgs/health_consumer/library/pub/pub03.pdf

generate legal and transaction costs. Businesses and consumers realise these costs in terms of higher prices for goods and services, digital and non-digital.

3.3 Task 3: The benefits from completion of the DSM in Europe

Following on from the previous task, this element of the study considers what would be the benefit to Europe if the identified legislative gaps in the DSM are closed such that the DSM market is complete for e-commerce transactions. This exercise attempts not only to quantify the direct CoNE facing individual stakeholder groups, but to quantify the collective (including externality) impact of removing all gaps. To do this, the direct CoNE estimated in the previous task were used as assumptions in the Cambridge Econometrics E3ME model of the EU economy to quantify the net impact of closing all gaps in the EU economy. This accounts for all multiplier effects in the economy from the savings in the CoNE and the broader effects caused by linkages between economic sectors and between key economic variables. More detail on the E3ME model and how the results are obtained is provided in Section 5 and Annex 2. A brief summary is provided in the Box below.

Introduction to E3ME

E3ME is a computer-based model of Europe's economies. It is often used to assess the economic and labour market impacts of new policy.

The economic structure of E3ME is based on the system of national accounts. The model has a high level of sectoral detail, with 69 sectors defined in its structure. Short-term multiplier effects occur through the various interdependencies between different parts of the economy, including consumption, investment and trade. The model is post-Keynesian in approach meaning that, unlike many other economic models, it does not make assumptions about rational behaviour and expectations.

The model includes 33 sets of econometrically estimated equations, including the components of GDP (consumption, investment, and international trade), the labour market, prices, energy demand and materials demand. Each equation set is disaggregated by European Member State and by sector. Outputs from the model include GDP, sectoral output, employment and unemployment, trade and investment.

The E3ME model is maintained and operated by Cambridge Econometrics. Further information is available at the model website, www.e3me.com

3.4 Task 4: The benefits of the DSM for selected Member States

To illustrate the differences in impacts between Member States reflecting differences in the economic importance of the digital economy at present and use of the future e-commerce services, figures per Member State are calculated and presented using the E3ME Cambridge model.

4. The Digital Single Market: current EU legislation and legislative gaps

This section provides a review of several broad legislative fields that are relevant for the functioning of the DSM with a view of identifying existing gaps by focusing, firstly, on areas where there is still a need for European legislation and the EU has powers to legislate (legislative gaps), and secondly, on areas where the legislative framework is in place but considerable implementation and/or information gaps have been identified.

An effort has been made to ensure that the analysis is up-to-date. This is a challenging task given the active legislative work undertaken in some areas. In several areas new acts are either at proposal stage or at the advanced stages of the legislative process having been adopted and awaiting implementation by the Member States. Identification of gaps was not possible in such cases.

This Section covers the following areas:

- European contract law specifically focussed on the consumer acquis, consumer enforcement legislation, Brussels regime and Rome I and II;
- Business-to-business online legislation with a focus on cloud computing;
- Data protection and privacy legislation;
- Intellectual property legislation, including geographical restrictions, collective rights management, orphan works, and the re-use of public sector information; and
- Administrative simplification and horizontal enablers including E-identification authentication, agency and legal capacity, payments, postal and delivery services.

4.1 European Contract Law

European Contract Law is largely dominated by the consumer acquis, even if some of the legal instruments are in theory all-encompassing as they are meant to cover B2B transactions as well as B2C.

The consumer acquis is relevant to the digital economy as it concerns the equal treatment of consumers trading cross border in the single market and conducting transactions online. To avoid duplication with the forthcoming study on the CoNE in the consumer acquis, only elements which relate to e-commerce are discussed. The legislation reviewed includes:

- Council Directive on Unfair Terms in Consumer Contracts;
- Sale of Consumer Goods and Associated Guarantees Directive;
- Consumer Rights Directive (CRD);
- Common European Sales Law (CESL);
- E-commerce Directive;
- Consumer Protection Cooperation Regulation;
- Brussels Regime (Brussels Convention of 1968);
- Alternative and Online dispute resolution (ADR/ODR); and
- Regulations Rome I and II.

Rome I and II Regulations, the E-commerce Directive, the ADR Directive and the ODR Regulation are prime examples of legal instruments that have strong consumer rights aspects (designed with consumer protection in mind), but include provisions that also cover B2B situations⁴⁴ to go beyond consumer protection objectives. As an example, the E-commerce Directive has various provisions directed at consumers (such as informational requirements and contract law) while certain aspects governing infrastructure have no direct connection to consumer interests.

4.1.1 Consumer *acquis* and the digital economy

Unfair Terms Directive

Directive 93/13/EEC⁴⁵ regulates that certain unfair contractual terms which have not been individually negotiated and used by sellers or suppliers (standard terms), shall not be binding upon consumers. In addition, certain bodies shall have the right to proceed for the prohibition of further use of such terms. The Unfair Terms Directive contains minimum harmonisation in its true sense as it is left entirely to the Member States to:

- define more stringent rules defining more types of standard contractual terms as being unfair than those covered and mentioned by the Directive;
- extend the application to include certain individually negotiated contractual terms as being unfair; and
- extend the application to include the control of C2C, C2B and B2B transactions.

In the current state of play, it may happen that in parallel cases (i.e. an infringement of the directive occurs in multiple Member States), different judgements are reached as standard contract terms and their presentation differs between Member State. The practical relevance of such cases is uncertain as the number of parallel infringements and costs are unknown.

Consumer Sales Directive

Directive 99/44/EC on Consumer Sales⁴⁶ was adopted with a view of ensuring minimum harmonised standards of the provisions relating to the sale of consumer goods and associated guarantees (Recital 24 and Article 1). The Directive aimed at warranting a minimum level of consumer protection across the EU, in the context of the internal market.

Article 8 states that Member States are free to adopt or maintain in force more stringent provisions than those provided for by the Directive in order to ensure a higher level of consumer protection.

⁴⁴ Typically, provisions are designed to ensure fair competition and the free movement of goods and services between Member States.

⁴⁵ Council Directive 93/13/EEC of 5 April 1993 on unfair terms in consumer contracts, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31993L0013:en:HTML>

⁴⁶ Directive 1999/44/EC of the European Parliament and of the Council of 25 May 1999 on certain aspects of the sale of consumer goods and associated guarantees (OJ L 171, 7.7.1999, p. 12), <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1999L0044:20111212:EN:PDF>

The scope of the Directive covers: “any *tangible movable* item, with the exception of goods sold by way of execution or otherwise by authority of law, water and gas where they are not put up for sale in a limited volume or set quantity and electricity” (Article 1.2.b).

This definition of goods does not apply to a number of elements of the Digital Economy, such as software and downloaded audio visual content which are intangible. Furthermore, legal and commercial guarantees for digital products do not fall under the scope of the Consumer Sales Directive. Remedies in relation to software/spare parts and after-sales service, damages and cross border enforcement in relation to these types of products are also not covered by this Directive. For intangible goods, including those purchased online such as downloaded content, a gap in consumer protection potentially exists as a result.

Consumer Rights Directive

The Consumer Rights Directive (CRD)⁴⁷, in addition to slightly amending Directive 99/44/EC consolidates and redefines provisions previously covered by the Long Distance Selling Directive⁴⁸ and the Doorstep-Selling Directive⁴⁹. The legislation also introduces additional informational requirements. A number of detailed provisions introduce a general delivery period for goods and prohibits certain pricing policies. The key provisions of the CRD are provided in the Box below.

Key provisions of the Consumer Rights Directive (2011/83/EC) amending Directive 99/44

Article 1 states that the aim the Directive is to approximate national laws governing contracts between consumers and traders in order to achieve a high level of consumer protection across the EU

Article 2 includes the definition of “digital content” which shall fall within the scope of the Consumer Rights Directive

Article 6 stipulates that consumers shall be informed about the total costs of the goods or services they are paying for. This total cost includes taxes and additional fees such as shipping fees. Consumers will not be bound by the contract insofar as this information was not provided. Article 6 also establishes that clear information shall be provided with regard to digital content, including compatibility issues and the right of making copies of the product.

Article 9 fully harmonises the right of withdrawal: consumers are now allowed to withdraw from a sales contract for 14 days after entering into it. The right of withdrawal begins upon receiving

⁴⁷ Directive 2011/83/EU of the European Parliament and of the Council of 25 October 2011 on consumer rights, amending Council Directive 93/13/EEC and Directive 1999/44/EC of the European Parliament and of the Council and repealing Council Directive 85/577/EEC and Directive 97/7/EC of the European Parliament and of the Council, (OJ L 304 , 22/11/2011 P. 0064 – 0088), <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:304:0064:01:EN:HTML>

⁴⁸ Directive 97/7/EC of the European Parliament and of the Council of 20 May 1997 on the protection of consumers in respect of distance contracts, <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:31997L0007>

⁴⁹ Council Directive 85/577/EEC of 20 December 1985 to protect the consumer in respect of contracts negotiated away from business premises, <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1399459231831&uri=CELEX:31985L0577>

the goods, unlike upon the conclusion of the contract as it was the case under Directive 99/44. Furthermore, the right of withdrawal also extends to online auctions. The consumer can also withdraw from contracts concluded during the course of a solicited visit. Under the previous regime, only unsolicited visits were covered.

Article 10 fully harmonises the withdrawal period to be twelve months for those cases where the consumer was not properly informed about his or her withdrawal rights

Article 11 allows consumers to use a European common form for withdrawal, which is included in an Annex to the Directive. Using this model is facultative for consumers, since they can also opt for “making any other unequivocal statement setting out his decision to withdraw from the contract” (Article 11.1.b). However, simply returning the goods is not sufficient in the future.

Article 13 fully harmonises the rules applicable for better return rights: once the right of withdrawal is exercised, the trader should refund the price of the goods to the consumers within fourteen days if the withdrawal, including costs of delivery, unless otherwise specified. In case of damages, the trader will bear the costs until the goods are in the possession of the consumer. Furthermore according to **Articles 13 and 14** the trader may now provide that the consumer shall bear the cost of return and lays down better information provisions on the bearer of the returning costs: if the trader does want the consumer to bear the cost of return after changing his mind, he should clearly inform him beforehand.

Article 14 lays down a right of withdrawal for the purchases of digital content until the moment the download begins

Article 19 is intended to eliminate additional costs related to the use of means of payments and hotlines: traders cannot charge consumers fees greater to the ones they bear for the use of certain means of payment.

Article 20 reinforces consumer protection by prohibiting the seller to charge consumers fees for the use of means of payments, other than the fees in which the seller incurs himself for the use of such means

Article 21 stipulates that traders using hotlines for dealing with consumer claims cannot be charge calls at rates higher than those of a normal phone call

Article 22 forbids traders to charge additional costs on consumers through the so-called “pre-ticked” boxes: traders are bound to seek the consumer’s express consent for any sort of additional payment. Consumers need to understand what they are paying for, as “cost traps” should be forbidden.

The CRD provides comprehensive legal coverage of consumer rights as it is applicable to “any contract concluded between a trader and a consumer” (Article 3), including contracts for the supply of digital content (Recital 19). Once the Directive is fully implemented⁵⁰, most of the key elements of consumer law will be harmonised. Certain gaps in the field of the Digital Economy have, however, been identified:

- In the field of guarantees, digital products are not fully covered. There is uncertainty when it comes to the application of commercial guarantees to digital products. The scope excludes contracts concluded between consumers,. C2C transactions are common in the digital economy. In particular, online auctions are an important element of the market. eBay alone has roughly 120 million customers worldwide⁵¹, a proportion of which trade cross border C2C and not

⁵⁰ The deadline for transposition was set on December 13th, 2013, although, to date, not all Member States have adopted implementing legislation (see <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:72011L0083:EN:NOT>)

⁵¹ Interview with Jacob Aqraou, President of eBay for Europe, El Pais, 17th November 2013, http://economia.elpais.com/economia/2013/11/15/actualidad/1384538774_539807.html

only with professional sellers which are covered by the CRD. However, in order to assess the practical relevance of this gap the size of C2C intra-EU cross-border sales would need to be estimated. No data has been identified that would provide estimates for such flows. Indirect evidence suggests that the size of such trade is very small. Neither the E-Commerce Directive nor the CRD regulate aspects related to consumer protection in the fields of cloud computing and Web 2.0. Thus there is uncertainty for the increasing number of consumers making use of these means to transact.

- Finally, there are still some gaps remaining with regards to the supply of digital content, especially in relation to the legislation governing consumer sales as there are difficulties in seeking redress when the quality of digital content is deemed inadequate by the consumer. As the performance of the content depends equally on the device, user and communication network, liability can be difficult to determine, when compared to non-digital and more tangible goods.

In addition to the above mentioned gaps, the CRD excludes from its scope a number of areas such as financial services, passenger contracts and gambling. However, transport tickets purchased online are covered. Before the adoption of the CRD, some gaps remained with regards to the specificities of online ticket purchases. However, the CRD has reinforced passenger's rights in this area: Article 22 of the Directive specifically precludes the use of "default options". Overall, consumer rights, consumer sales and unfair terms legislation provide for minimum standards and even fully harmonise some rules on many aspects of contracting. This removes many of the gaps which might previously have been present in the consumer acquis.

Common European Sales Law (CESL)

Recognising that despite harmonising provisions in the CRD and CSD many uncertainties remain for businesses and consumers, the proposed Common European Sales Law (CESL)⁵² attempts to reduce some of these uncertainties and transaction costs. Businesses may choose to incorporate its provisions into their contracts on a voluntary basis. The proposal intends to introduce a common European set of contract rules which traders can choose to govern their transactions when trading domestically or cross-border. This voluntary common regime would coexist with national provisions and set aside the Private International Rules applicable to contractual obligations ("Rome I")⁵³. The CESL would only be applicable in B2C transactions (and in B2B provided that at least one of the traders is an SME). The proposal has recently passed parliamentary vote on first reading and is currently awaiting adoption by the Council.⁵⁴ The key concepts

⁵² Proposal for a Regulation of the European Parliament and of the Council on a Common European Sales Law, COM (2011) 635 final,

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0635:FIN:en:PDF>

⁵³ Regulation (EC) No 593/2008 of the European Parliament and of the Council of 17 June 2008 on the law applicable to contractual obligations (Rome I),

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:177:0006:0006:en:PDF>

⁵⁴ http://europa.eu/rapid/press-release_MEMO-14-137_en.htm?locale=en

contained within the CESL proposal as they relate to digital contracts are provided in the Box below.

Key Concepts of the Common European Sales Law

Article 1. The objective and subject matter of the Regulation. Recognises the “*increasing importance of the digital economy*” (Recital 17), and is aimed, inter alia, at filling the gaps in consumer sales of digital products. The scope of the proposal includes “the supply of digital content and (...) related services”.

Article 2. List of terms and definitions. Defines digital content as “*data which are provided and supplied in digital form whether or not according to the buyer’s specifications, including video, audio, picture or written digital content, digital games, software and digital content which makes it possible to personalise existing hardware or software*”. Certain electronic services, such as online banking, e-healthcare, online legal services and gambling are excluded from scope.

Article 3. Explains the optional nature of the contract law rules.

Article 4. Territorial scope. Limits provisions to cross-border contracts.

Article 5. Material scope. States that it covers contracts for sale of goods and supply of digital content and related services, such as installation and repair.

Article 8. Choice of CESL. Requires agreement of all the parties to use CESL. In contracts between a business and a consumer, the choice of the Common European Sales Law requires the consumer’s consent to be explicitly provided to be valid.

Article 13. Expanded scope. Presents the possibility for Member States to enact legislation which makes the CESL available to parties for use in an entirely domestic setting and for contracts between traders, neither of which is an SME.

Annex 1. The actual common European rules under the CESL. Covers all aspects typically related to contract law such as pre-contractual information, conclusion of the contract, unfair contract terms, termination of the contract, damages and remedies. The supply of digital content is subjected to the entire set of rules. Additionally, Part IV of the Annex is devoted to the “*Obligations and remedies of the parties to a sales contract or a contract for the supply of digital content*”.

The CESL is a kind of model law and in the past, similar model laws failed because they were not accepted in practice, with or without good reason. The Hague Sales of Goods Convention, predecessor of the CISG Convention, was usually deliberately excluded from application in most standard contracts at the time, irrespective of its content and whether or not its application would have been beneficial to either of the parties. While many stakeholders expect CESL to have a positive impact, others are less convinced⁵⁵. There is also a risk that by providing a third parallel contract law (in addition to that of the Member State of the trader and consumer) may add confusion for consumers and increase legal uncertainty.

⁵⁵ See for example <http://www.euractiv.com/sections/innovation-enterprise/common-european-sales-law-faces-rocky-reception-301090>

This uncertainty and the fact that uptake of the CESL by businesses and consumers is itself uncertain, prevents a clear conclusion as to whether gaps in the contract law will be resolved by CESL in cross-border trade. The use of CESL is anyhow optional; hence it is unclear if any gaps will be removed by the legislation.

Rome I and Rome II do not have harmonised solutions for all issues, even within their general scope, but still contain a number of gaps where it is not clear which Member State's law eventually applies. In the context of the DSM, legal capacity of natural persons and its effects are still unregulated, as are the laws of agency and representation, violations of privacy and rights relating to personality, including defamation ⁵⁶. The CESL does not attempt to close these 'gaps'.

Outside the scope of CESL, online banking, e-healthcare, online legal services and gambling are covered by separate sector specific legislation and remain sources of possible legislative gaps.

In addition, the CESL itself contains a number of significant gaps that are similar to the most important gaps in Rome I: i.e. issues regarding legal capacity, agency and property rights. These issues are further discussed below in the sub-section covering Rome I and II.

E-commerce Directive

The E-Commerce Directive 2000/31/EC has done much to establish an internal market for online services, by removing obstacles to cross border trade and creating legal certainty. For businesses and consumers alike, the Directive establishes harmonised rules for transparency and information requirements for online service providers, commercial communications, electronic contracts and limitations of liability of intermediary service providers, thus removing much of legal uncertainty which previously existed.

Under the Directive, information society services are, in principle, subject to the law of the Member State in which the service provider is established (the internal market clause). In turn, the Member State in which the information society service is received cannot restrict incoming services. The key provisions are outlined in the Box below.

Key provisions of the E-commerce Directive (2000/31/EC)

Article 1 – Objective. Definitions to contribute to the proper functioning of the internal market by ensuring , the free movement of information society services between the Member States

Article 2 – Scope. Covers all information society services, including those which are free to use and allow online transactions. It does not apply to the field taxation, data protection and gambling activities.

⁵⁶ The perspective of having a European Code on Private International Law, A research paper by Nick Bozeat for the European Commission (2013)

Article 3(1) – Originating country rule or “Internal Market clause”. Providers of information society services (i.e. Internet site operators) are subject to the legislation of the Member State in which they are established.

Article 3(3) – Exceptions and freedoms. This includes among others exception relating to intellectual property rights, the emission of electronic money, the formal validity of contracts concerning real estate and unsolicited commercial communication by email. It also states the freedom of the parties to choose the law applicable to their contract.

Services covered by the E-commerce Directive are online information services (such as online newspapers), online selling of products and services (books, financial services and travel services), online advertising, professional services (lawyers, doctors, estate agents), entertainment services and basic intermediary services (access to the Internet and transmission and hosting of information)⁵⁷.

The Commission’s communication on building trust in the DSM notes that legal certainty and confidence for both consumers and businesses is vital, concluding that while the Directive is sound, better implementation , specifically through improved administrative cooperation is needed for the Directive to achieve its full potential. An in-depth evaluation is currently planned to further these aims. At present, while certain areas are excluded from the Directive’s scope (gambling, taxation and data protection), no specific ‘gaps’ in the E-commerce Directive have been identified.

Alternative Dispute Resolution (ADR)

Beyond the aspects of law mentioned above which govern contracts, all Member States have developed individual and complex rules as to how contracts are concluded and on the unfairness of contracts. It is possible that certain provisions may not be enforced on the grounds of equity or public policy. All Member States have (in detail) organised different means of protection and legal redress. These rules and practices are adapted to the society and to the legal environment of each Member State. Not interfering with these rules is thus fully in line with the general principle of European civil law which does not make an attempt to fully harmonise all areas of law, but to limit harmonisation to certain aspects. There exists neither a European Civil Code nor a European common law.

Frequently, even the same wording of the law of two Member States may have entirely different implications. For example, the possibility of legal redress in court may be influenced by: the cost of such proceedings; the percentage of consumers having legal insurance; by the duration of the proceeding; practical aspects of evidentiary rules in court; the availability and popularity of out-of-court resolution mechanisms (including ADR and ODR); and, the risk (or risk averseness) culture of each Member State.

The Commission’s Communication ‘A coherent framework for building trust in the Digital Single Market for e-commerce and online services’ identifies as one of the main obstacles to DSM the fact that *“there are too many cases of abuse and disputes that are*

⁵⁷ http://ec.europa.eu/internal_market/e-commerce/directive/index_en.htm

difficult to settle". This obstacle also features in the 'E-commerce Action plan 2012-2015: State of play 2013'⁵⁸ as a priority for resolution. Ecommerce Europe also stresses the need for promoting self-regulation and the building of transnational on-line dispute resolution systems for the full realisation of the DSM⁵⁹.

To date, approaches for reducing cost and judicial barriers (particularly to consumers) in the Single Market usually had a holistic aim: the Brussels Regime (Brussels I⁶⁰) harmonised jurisdictional issues and made recognition and enforcement easier on a broad scale, and the Consumer Protection Cooperation Regulation enhanced administrative cooperation in protecting the collective interests of consumers on a similarly broad scale. Only recently has it been realised that despite these significant improvements, the barriers for cross-border legal redress are still far too costly (in terms of financial costs and time) for most consumers and that cross-border administrative and collective consumer interest representation still remains too weak to stop trader behaviour that adversely harms consumers. Increasingly, the approach has been to adopt sectoral solutions to combat sectoral problems which allow the use of multiple legal mechanisms to seek redress. As an example, for a local dispute between a consumer and a car-dealer, local ADR is appropriate provided that, certain minimum standards are met as defined by the ADR Directive. Cross-border small claims should better be solved by a tailor-made proceeding, for which the European Small-Claims Regulation provides the framework.⁶¹

The Directive on ADR for consumer disputes (2013/11/EU) establishes a legal framework that will allow consumers to use ADRs in a more transparent and efficient manner for all their purchases, regardless of whether they have been made online or offline. The ADR Health and higher education disputes are excluded from the scope of the ADR Directive. ADR will also enhance consumer protection with regards to parcel delivery, since Article 19 of the Postal Directive⁶² urges Member States to boost the development of ADR for postal issues. The deadline for implementation of the ADR Directive is set for July 2015 by the Member States.

The extent to which ADRs will be used will very much depend on a number of factors which cannot be addressed through legislation only. These factors are much more dependent on the trust and knowledge consumers have of ADRs, on the national availability of these mechanisms and even on the legal and judicial tradition of each Member State.

⁵⁸ Commission staff working document - SWD(2013) 153 final
http://ec.europa.eu/internal_market/e-commerce/docs/communications/130423_report-e-commerce-action-plan_en.pdf

⁵⁹ <http://www.ecommerce-europe.eu/stream/\-paper-e-regulations>

⁶⁰ Regulation (EC) No 44/2001 and Regulation (EU) No 1215/2012 (recast) on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters.

⁶¹ Regulation (EC) No 861/2007

⁶² Directive 2008/6/EC of the European Parliament and of the Council, amending Directive 97/67/EC with regard to the full accomplishment of the internal market of Community postal services, available at:

http://ec.europa.eu/internal_market/post/doc/legislation/2008-06_en.pdf

Key provisions of the alternative dispute resolution Directive (2013/11/EU)

Article 5 - Member States need to ensure that ADR provided by a certified ADR body is available for any dispute concerning contractual obligations between a consumer and a business. Governments need to ensure ADR is available if both parties agree to use it.

Article 6 – minimum requirements for ADR entities: maintenance of up-to-date websites, provision of information, acceptance of both domestic and cross-border disputes, etc.

Article 7 – defining minimum rules for transparency of ADR entities

Article 8 - defining minimum rules for effectiveness of ADR entities

Article 9 - defining minimum rules for fairness of ADR entities

Article 16 - Member States shall ensure that ADR entities cooperate in the resolution of cross-border disputes and conduct regular exchanges of best practices as regards the settlement of both cross-border and domestic

It remains to be seen if the gaps remaining in this area with regards to the Digital Economy have been sufficiently resolved by the ADR Directive once it is fully implemented. At present no gaps can be identified in the legislation.

Online Dispute Resolution (ODR)

The ODR Regulation (524/2013) aims to enable EU consumers and traders to submit disputes arising from online purchases to ADR online, thanks to the EU-wide dispute resolution platform ('ODR platform'). The ODR platform - to be operational from January 2016 - will link all the national ADR institutions. The platform will provide inter alia, national contact points, complaint forms and the information needed to resolve the dispute. The platform will also offer the tools to follow up the development of the procedure. ODR may be particularly relevant for e-commerce disputes: when the parties interact on-line, it is natural that the dispute resolution should also take place on-line.

Key provisions of the online dispute resolution Regulation (No. 524/2013 EU)

Article 5 – An EU-wide online platform to be set up for disputes that arise from online transactions. The platform will link all the national alternative dispute resolution entities and will operate in all official EU languages.

Article 7 – ODR contact points to be established in all Member States.

Article 9 – rules for processing and transmitting of a complaint: possibility to choose language, time limits for procedural steps.

As is the case with ADRs, the extent to which ODR platform will be used will be determined by multiplicity of factors going beyond legislative provisions. While ODRs may bring some gains they are unlikely to be panacea for all issues as ODR is just another 'option' for dealing with disputes, facilitated by development in technology

(Batancourt and Zlatranska, 2013) ⁶³. Online arbitration is likely to be particularly appropriate with respect to simple fact patterns and small claims. However, in more complex cross-border contexts or where large amounts of money are involved, users may be more reluctant to use such systems. At present no gaps can be identified in the legislation and it is too early to determine whether gaps exist with respect to its implementation.

4.1.2 Consumer Protection Cooperation Regulation (CPC)

The CPC Regulation (2006/2004/EC) establishes the procedures and tools for mutual assistance cooperation in the enforcement of cross-border consumer legislation. CPC is thus part of the consumer acquis, but it is not directly related to the contractual issues discussed above. Rather, the CPC is aimed at administrative cooperation between the Member States to enforce many provisions of the consumer acquis (provided in Annex 1 of the Regulation) where it is necessary to enforce EU law in a Member State other than where consumer is located. It also provides a mechanism for broader enforcement coordination where Member States face shared enforcement challenges. The Commission's role is limited in the CPC to an administrative and technical role operating the CPC System, a secure IT communication network linking national competent authorities.

A review of the CPC Regulation is currently underway that is expected to conclude in late 2014 according to the Commission's CPC Work plan⁶⁴. Proposals for revision of the CPC Regulation are anticipated in 2015, therefore remaining gaps, if any, should be resolved through this process. The quantification of these potential gaps (likely to be addressed in near future) is not attempted in this study as a much more comprehensive work is currently being done on precisely this topic. A summary of the key enforcement activities undertaken through the CPC Regulation are provided in the Box below.

Consumer Protection Cooperation (CPC) Regulation in the DSM

The CPC Regulation⁶⁵ established a framework for the cooperation between the different national authorities responsible for the enforcement of consumer rights. The Regulation establishes the specific areas to which this framework is applicable, including distance contracts, electronic commerce and passenger rights.

⁶³ Batancourt, Julio César and Zlatanska, Elina (2013), Online Dispute Resolution (ODR): What is it, and is it the Way Forward? 79 International Journal of Arbitration, Mediation and Dispute Management, Issue 3, 201

⁶⁴ http://ec.europa.eu/smart-regulation/impact/planned_ia/docs/2014_sanco_001_consumer_protection_cooperation_review_en.pdf

⁶⁵ Regulation (EC) No 2006/2004 of the European Parliament and of the Council of 27 October 2004 on cooperation between national authorities responsible for the enforcement of consumer protection laws (the Regulation on consumer protection cooperation), OJ L 364, 9.12.2004, p. 1-11, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:364:0001:0011:EN:PDF>

The Regulation also provides for enforcement actions aimed at investigating breaches of consumer law across the EU (the so-called “SWEEPS”⁶⁶). These “SWEEPS” are carried out in different sectors such as airline and online tickets sales, electronic goods or digital content. A “SWEEP” allows consumer authorities to work together to check websites offering certain services in search of potential violations of consumer law; subsequently, the authorities get in contact with those providers who have been found in breach of the legislation to ask for a clarification or a correction of their sites.

The CPC Regulation has proven efficient at solving cross-border enforcement issues. However, the lack of a provision establishing which applicable substantive law applies in mutual assistance requests may hinder the effectiveness of the CPC Regulation in certain cases.⁶⁷ Conflicting provisions with regards to procedural law can also hinder cross-border cooperation.

4.1.3 Court dispute resolution and the “Brussels Regime”

When legal relations, including E-commerce relations, fail, when traders do not comply with all the rules set out in the legislation of the consumer acquis described in the previous sub-sections and when governance by authorities and consumer associations fails or does not apply, the parties may have to seek legal redress either in or out of court. For example, although administrative enforcement might be tried through the CPC mutual assistance mechanism, there may be instances where this is not possible (i.e. it is out of scope) or where CPC fails and is not appropriate (i.e. handling of short-lived infringements).

For in court cross-border dispute resolution the EU has developed a strong set of instruments beginning with the Brussels Convention of 1968, hence the “Brussels Regime”. Its most important parts for the purpose of this study are:

- Regulation (EC) No 44/2001 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters, and Regulation (EU) No 1215/2012 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters (recast) (“Brussels I”);
- Council Directive 2002/8/EC of 27 January 2003 to improve access to justice in cross-border disputes by establishing minimum common rules relating to legal aid for such disputes;
- Regulation (EC) No 861/2007 of the European Parliament and of the Council of 11 July 2007 establishing a European Small Claims Procedure;
- Regulation 1896/2006 of the European Parliament and of the Council of 12 December 2006 creating a European order for payment procedure;
- Regulation (EC) No 805/2004 of the European Parliament and of the Council creating a European Enforcement Order for uncontested claims; and
- Council regulation (EC) No 1346/2000 of 29 May 2000 on insolvency proceedings.

⁶⁶ See http://ec.europa.eu/consumers/enforcement/sweep/index_en.htm

⁶⁷ (External) evaluation of the Consumer Protection Cooperation Regulation, Consumer Policy Evaluation Consortium, December 2012, http://ec.europa.eu/consumers/enforcement/docs/cpc_regulation_inception_report_revised290212_en.pdf , p.10

The Brussels Regime establishes a general rule that individuals and businesses are to be sued in their state of domicile and then proceeds with a list of exceptions. A number of provisions are specifically designed for the protection of consumers and are part of the consumer *acquis* and are designed to promote access to court for consumers and citizens. The instruments further provide for the recognition of judgements made in other countries.

There are few legal 'gaps' within the Brussels Regime since its instruments have a long history of development by the EU legislator and the courts. New challenges for the Brussels regime in connection with the DSM are practical aspects, such as the following examples:

- Despite all efforts to remove unnecessary procedural burdens and thus lower costs and reduce the duration of cross-border legal proceedings (including specifically the efforts made by the Regulation on the European Small Claims Procedure) such court proceedings still tend to result in costs and durations which are disproportionate in relation to the value of products and services which are typical of e-commerce. This "gap" is independent of the digital economy, and is true of all small claims, but is worse for cross-border legal disputes as small value transactions are more frequent in e-commerce and thus is a particular problem for the DSM.
- Court procedures by their nature have various formalities, including rules of evidence and burden of proof which are particularly 'heavy' for the digital economy. For example, it is particularly difficult for the contract partner of an e-commerce trader to prove in court that certain information has or has not been provided, when such party has not made a screen-shot, and even then there is no certainty that such screen-shot has not been altered. Online and e-mail communication can easily be forged. And to prove the loss of data stored in a "cloud" is close to impossible once such data is lost.
- Rules on jurisdiction based on domicile and rules on service of process are not very helpful when a party to a contract cannot be located due to the anonymity of the internet.

However, the Brussels Regime itself would currently be the wrong place for adjustments to be made. Improvements could be made with regard to:

- Stronger enforcement of information requirements (under the E-Commerce Directive and the CPC-Regulation), the increased use of electronic signatures (as provided for by the Electronic Signature Directive), eIDs, and generally more secure modes of communication. These would bring more certainty to the identity and domicile of the parties and at the same time would create evidence which may be later used in court.
- Alternative dispute resolution mechanisms (ADR and ODR) which may be better suited for disputes arising out of e-commerce transactions in the first place. .

4.1.4 Regulations Rome I and II

While the Brussels Regime establishes rules for resolving disputes, all Member States have developed individual and complex rules on governing contracts. This includes how contracts are concluded and on the unfairness of contracts and concerns Rome I and II. It is possible that certain provisions may not be enforced on the grounds of equity or public policy. All Member States have (in detail) organised different means of protection and legal redress. These rules and practices are adapted to the society and to the legal environment of each Member State. Not interfering with these rules is thus fully in line with the general principle of European civil law which does not make an attempt to fully harmonise all areas of law, but to be limited to certain aspects. There exists neither a European Civil Code nor a European common law.

Frequently, even the same wording of the law of two Member States may have entirely different implications. By example, the possibility of legal redress in court may be influenced by the cost of such proceedings, the percentage of consumers having legal insurance, by the duration of the proceeding and by practical aspects of evidentiary rules in court, by the availability and popularity of out-of-court resolution mechanisms (including ADR and ODR) and by the risk (or risk averseness) culture of each Member State.

The Rome Regulations (Regulation (EC) 593/2008 and No 864/2007) contain rules of International Private Law, also known as conflicts of law or 'choice of law'. International Private Law, contrary to what the term may suggest, does not actually contain legal provisions governing transactions and solving disputes, rather they only regulate as to which country's laws should apply to a given international setting. These rules apply prior to national laws, and only select or choose them, hence the term choice of law. In practice, International Private Law removes the uncertainty as to which country's laws should apply, and creates a new practical uncertainty (mostly felt by the parties and their legal advisors) as to the actual content of a foreign law which will apply for 50% of the parties concerned.

Normally, unless harmonised, Private International Law is even more complex than contract law to handle since each country has its own set of rules which may lead to conflicting and different results, depending on the perspective and on the court to which the dispute is eventually brought to. In order to reduce the resulting potential legal conceptual chaos in cross-border situations, Regulation Rome I at least provides for harmonised rules as to which Member State's law should apply to (most) contractual situations (without deciding the issues as such). The key provisions of the Rome I Regulation are provided in the Box below.

Key Provisions of Rome I Regulation on the law applicable to contractual obligations (Regulation (EC) 593/2008).

Article 3.1 - Freedom of choice ensures that the parties to a contract are able to choose the governing law and may be applied to the whole or to part of the contract. Provided all parties agree, the applicable law can be changed at any time.

Article 4.1 (a) and (b) – Applicable law in the absence of choice. Where the parties have not chosen the applicable law for contracts for the sale of goods, provision of services, franchises or distribution (Article 3) the law will be determined based on the country of residence of the principal actor carrying out the contract.

Article 6 - Consumer contracts. In the absence of applicable law choice for consumer contracts between consumer and professionals the applicable law is that of the country of residence of the consumer, provided that this is also the country where the professional carries out his/her activities or to which his/her activities are directed. The parties may also, based on freedom of choice, apply another law, as long as it provides the same level of protection to the consumer as that of his/her country of residence.

Article 7 – Insurance contracts. If the applicable law has not been chosen by the parties, the applicable law will be that of the country of residence of the insurer. However, if the contract is more closely related to another country, that country's law will apply.

Accordingly, since typically traders set up contracts referring to their own law under Article 3 of Rome I, and depending on the type of trade, in many cross-border consumer contracts the “burden of knowledge” is on the consumer, who has to live with some uncertainty as to the law of the trader agreed to. At the extreme this may stop the consumer from conducting cross-border purchase altogether. On the other hand, consumer protection rules under Article 6 may lead to uncertainty and additional transaction costs on the part of the traders.

Under Rome II, in turn, in most cases the law of the country applies in which the party resides which has become the victim of product liability, as tort or other type of non-contractual damage.

Thus, under Rome I and II, there are various situations where the law of the other party may apply. In B2C E-commerce situations, the law at the place of residence of the consumer applies. While in principle the contract may provide otherwise, binding consumer protection may not be reduced so in effect traders are quite limited in their options.

The Rome Regime is not directed at consumers alone and hence in B2B E-commerce it is not stipulated which Member State's law applies in cross-border trade. Thus, currently, businesses conducting commerce in more than one Member State may be required to obtain knowledge of the laws of several (or all 28) Member States.

4.2 European legislation governing B2B online contracts

The previous sub-section primarily concerned legislation covering B2C contracts in the DSM. Of equal importance are B2B transactions in the Single Market. Businesses benefit by seeking out lower prices, realising greater selling opportunities and benefiting from the increased competition and innovation due to greater choice of suppliers and easier means of communication. The following focusses on two aspects: Single European contract law, and cloud computing contracts.

Rome I and II Regulations, discussed above, cover both consumers and businesses, with its consumer protection provisions, clearly, not being applicable to businesses. Apart

from those special provisions, Rome Regulations as applying to non-consumers largely share the same aims and strengths, and have the same weaknesses and thus, generally the same gaps.

While proposals for Single European contract law are currently restricted to consumer and SME businesses under the CESL, this should, however, be without prejudice to the possibility for Member States to enact legislation which makes the Common European Sales Law available for contracts between non-SME traders. In any case, in business-to-business transactions, traders enjoy full freedom of contract and may therefore draw inspiration from the Common European Sales Law in the drafting of their contractual terms⁶⁸.

For businesses in 24 out of 28 Member States (i.e. apart from Ireland, Malta, Portugal, and the United Kingdom) the UN Convention on International Sales of Goods (CISG) applies as their model harmonised law when it comes to the sale of goods. Other than the CESL, the CISG applies unless specifically agreed otherwise contractually (opt-out). For businesses in the four Member States which have not ratified the CISG, there remains the option of specifically incorporating the CISG into their contracts, thereby opting-in. However, in commercial practice, the CISG is routinely opted-out, often with little thought and even less reason⁶⁹. Most importantly, the CISG only applies to the sales of goods (on-line or otherwise), but not on services or any other type of contracts. As a result, for many commercial transactions no legislative act exists to provide equivalent provisions for businesses which suffer legal uncertainty and legal costs when trading cross border. It is estimated that "*traders who are dissuaded from cross-border transactions due to contract law obstacles forgo at least €26 billion in intra-EU trade every year*"⁷⁰. Further, for businesses wishing to carry out cross-border transactions with other businesses may have to adapt to up to 27 different national contract laws, translate them (when needed) and hire lawyers. On average the Commission puts the costs at €10,000 per export market, plus addition costs to modify websites⁷¹.

⁶⁸ Recitals 21 of the CESL proposal. It remains to be seen how national courts will decide when businesses, applying their full freedom of contract, agree to apply the CESL in a business contract by incorporation.

⁶⁹ J. Meyer, UN-Kaufrecht in der deutschen Anwaltspraxis, *Rabels Zeitschrift*, 2005, 457 ff.. See also: Offermann et.al, EP Directory Science: http://bookshop.europa.eu/de/untersuchung-der-privatrechtsordnungen-der-eu-im-hinblick-auf-diskriminierungen-und-die-schaffung-eines-europaeischen-zivilgesetzbuches-pbQAJURI103/downloads/QA-JU-RI-103-DE-N/QAJURI103DEN_002.pdf;pgid=y8dIS7GUWMdSR0EAIMEUUsWb0000VxNZcA3d;sid=HQeM8BiTVBWM6Eh0cGISV3q2GtSKIx9AG9Q=?FileName=QAJURI103DEN_002.pdf&SKU=QAJURI103DEN_PDF&CatalogueNumber=QA-JU-RI-103-DE-N

⁷⁰ SEC (2011)1165 final – Commission Staff working paper - Impact Assessment Accompanying the document - Proposal for a Regulation of the European Parliament and of the Council on a Common European Sales Law
http://www.europarl.europa.eu/meetdocs/2009_2014/documents/imco/dv/com_sec%282011%291165_/com_sec%282011%291165_en.pdf

⁷¹ SEC (2011)1165 final – Commission staff working paper: *Proposal for a Regulation of the European Parliament and of the Council on a Common European Sales Law*, available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SEC:2011:1165:FIN:EN:PDF>

Consumers and SMEs enter contracts infrequently and often with minimal experience, and are therefore deserving of protection under the law. If free to contract, consumers and SMEs may end up with sub-optimal outcomes (i.e. accepting a disproportionate amount of risk compared to the business in the transaction). In contrast, businesses which enter a contract with another business are free to do so provided the terms of the contract are agreed by both parties to it. The 'Freedom to contract' is protected by Article 16 of the EU Charter of Fundamental Rights ('freedom to conduct business'). However, it could be considered a 'gap' in legislation if freedom to contract resulted in sub-optimal outcomes which would require legislative action. The Commission's proposal for CESL asserts in relation to B2B contracts (where parties are not SMEs) that *"there is no demonstrable need for action for these types of cross-border contracts"*⁷². This is supported by commentary on the CESL proposals which suggests that *"B2B transactions tend to self-regulate optimally based on freedom of contract"*⁷³.

There is strong agreement that the EU lacks legal basis for applying instruments similar to CESL to businesses other than SMEs. Also, for larger businesses trading among each other, any market distortion due to legal issues are of lesser importance and the transaction costs for contract development are of a lower magnitude⁷⁴. Therefore, while there are gaps in this area similar to those found in the area of consumer law, they are omitted from further discussion in this study.

In specific sectors of concern, the Commission has, however, taken several initiatives to support business where the lack of EU rules distorts the internal market. This includes insurance contract law and the strengthening of cloud computing contracts, discussed further in the following sections.

4.2.1 Cloud computing contracts

Cloud computing refers in simplified terms to the storing, processing and use of data located on connected servers in remote locations rather than on local computing devices (e.g. computers). The advantage is that rather than carrying data, storage space, and computing power around with user, data is accessible from anywhere with an internet connection. This means that users can command practically unlimited computing power on demand, businesses do not have to make major capital investments to fulfil their needs and that access to data is much improved.

⁷² COM/2011/0636 final, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. *A Common European Sales Law to Facilitate Cross-Border Transactions in the Single Market*

⁷³ E. G. Ilieva (2013): The Proposal for a Common European Sales Law: Does the European Union Need This Optional "Common" Code?, Pace Law School Institute of International Commercial Law, <http://www.cisg.law.pace.edu/cisg/biblio/ilieva.html#1>

⁷⁴ In fact, large enterprises tend to "internalize" their cross-border legal problem by creating subsidiaries in relevant countries which then operate on the basis of "local" laws. The actual "cross-border" legal interaction then takes place in-house between different subsidiaries of the same enterprise. And when it comes to contracts between two larger enterprises, such contracts are often developed in detail and would gain little from a model or harmonized law.

Cloud computing has the potential to slash users' IT expenditure and optimise online communication and collaboration. In September 2012, the European Commission adopted a Communication on "*Unleashing the potential of cloud computing in Europe*"⁷⁵. The strategy comprises three key actions. Key action 2 concerns the identification of safe and fair contract terms and conditions for cloud computing contracts, a legislative gap which was identified in the previous discussion in relation to the E-Commerce and Consumer Right Directives⁷⁶.

In June 2013 the Commission set up a group of experts who work on safe and fair conditions for cloud computing contracts in order to facilitate the improvement of contractual arrangements between cloud computing service providers and consumers and small firms. The Expert Group should help identify best practices relating to cloud computing contracts and work towards ensuring that terms and conditions in cloud computing contracts are safe and fair.

However, as no legislative act is proposed, this is considered a legislative gap worth analysing further in this CoNE study. In fact, legal issues of cloud computing are still unresolved on many levels. Few of the legal provisions cited above in relation to B2C and B2B contracts are clearly applicable to cloud computing. Even Rome I and II Regulations, which should provide clear guidance as to the law applying to such situations, require referencing to existing norms to apply to cloud-computing.

The situation is quite similar in the legal framework of each of the Member States. For example, multiple strands of national legal codes can apply to an area such as cloud computing. It is therefore difficult in practice to know what provisions apply in a given situation.

Unclear, complex and legally uncertain contracts deter traders and individuals from using and adopting the cloud. The existing regulatory environment of national contract laws might not be fit for cloud based services. In some instances, the current situation might lead to unfair and unbalanced contracts where the risk is unduly allocated to one of the contract parties (usually the user of cloud based services) despite the existing legislation.

In fact, with cloud-computing, many aspects are unclear and debatable: the applicable law on the service of providing cloud computing to others, and the applicable law on ownership and integrity of the data, on availability and liability issues on the part of the service provider (e.g. for loss of data, for the integrity of the data, data protection etc.). But the service providers are not the only ones whose responsibility is unregulated: users may overuse their contingent, may abandon their data, or use cloud storage for

⁷⁵COM(2012) 529 final - Unleashing the Potential of Cloud Computing in Europe, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0529:FIN:EN:PDF>

⁷⁶ See also: DG Justice Art. 29 Working Party Opinion 5/2012 on Cloud Computing: http://ec.europa.eu/justice/data-protection/article-29/documentation/opinion-recommendation/files/2012/wp196_en.pdf

illegal activities leaving questions as to criminal-prosecution and third party demands for surrender or deletion of such data. Succession issues are also involved: what happens to data when the “owner” deceases (leaving or not a password to the data) or in the event of insolvency.

Even when the legal systems of the Member States do have solutions to specific issues, there remains the question of enforcement, who can be made responsible for the upholding of legal standards and how. Currently, many cloud-computing providers are from outside the EU and sometimes with off-shore base and the data may be stored on servers located yet elsewhere. And even if an original service provider can be identified and brought to court in a European jurisdiction, and is held responsible to act in a certain way, many other questions remain open.

Legal issues related to cloud-computing are currently one major ‘gap’ not only on the level of European harmonisation but also within Member States legal provisions.

4.3 Data protection and privacy legislation

Technological progress and globalisation have profoundly changed the way data is collected, accessed and used. The digital economy now exchanges much more data than foreseen in 1995 (when the present legislation was conceived) and uses information for new purposes (e.g. social media, targeted online marketing). A successful DSM does need effective data protection legislation to ensure consumers are confident to trade and their information is adequately protected.

In 2012, the European Commission proposed a comprehensive reform of the data protection rules⁷⁷. The proposal aims to lay down data protection rules at EU level through a Regulation directly applicable in all Member States which would change the current situation with the cumulative and simultaneous application of different national data protection laws. The proposal includes a draft Regulation setting out a general EU framework for data protection and a draft Directive on protecting personal data processed for the purposes of prevention, detection, investigation or prosecution of criminal offences and related judicial activities. Many of the proposed provisions address concerns in the digital economy, but its scope is actually wider covering the use of all personal data, online and offline.

The impact assessment accompanying the original proposal estimated that establishing data protection rules at EU level through a Regulation directly applicable in all Member States would produce net saving for companies in the range of € 2.3 billion a year in terms of administrative burdens alone.

⁷⁷ COM(2012) 9 final - Safeguarding Privacy in a Connected World. A European Data Protection Framework for the 21st Century. The following discussion on legislative process follows European Commission - MEMO/14/60; 27/01/2014 (http://europa.eu/rapid/press-release_MEMO-14-60_en.htm).

The European Parliament backed the Commission's proposals reinforcing certain of its elements with a plenary vote in March 2014. To become law the proposed Regulation has to be adopted by the Council of Ministers using the ordinary legislative procedure (co-decision). Given that the on-going legislative process is likely to address many or all of the issues and in any case it is not possible to identify gaps in its future implementation this area is not analysed in further detail in this study. The implicit assumption is that any gaps will be resolved by the proposed regulation.

4.4 Intellectual Property

4.4.1 Geographical restrictions

Access to certain products sold electronically is restricted to geographic regions. This often applies to digital content such as music or e-books and TV broadcasts. In practice consumers from third countries accessing for instance website of an on-line shop and trying to buy a musical album will see an information that download is only possible for consumers from selected EU countries (or from countries where their credit/debit card is registered)⁷⁸.

This clear limitation to single market for some products sold electronically is mainly related to territorial character of copyrights protection and the licencing of content. The European Commission has adopted a proposal for a Directive aimed at creating a legal framework for the collective management of copyright, with a view to enabling multi-territory and pan-European licensing⁷⁹. This could potentially lower transaction costs involved, e.g. costs incurred to identify and find the rights owners and costs of negotiating with them. These costs are presently high for services available in multiple Member States as search and negotiation costs are duplicated. One study found that twice the human resources are required for licensing rights available in several countries compared to services available in a single country⁸⁰. However, in the case of some digital products the Commission proposals are controversial and some industry stakeholders believe that consumers would not necessarily be better off if pan-territorial licensing were mandatory, because granting such rights could entail higher cost, and possibly exclude smaller innovative services from launching and/or being successful in smaller markets⁸¹. For example, it was found that the more innovative the business

⁷⁸ The following example provide typical messages seen by consumers at various European websites of the large on-line shop (Amazon): *'Wie von unseren Anbietern von Musikinhalten vorgeschrieben, sind Musikinhalte nur für Kunden in Deutschland, Österreich und der Schweiz verfügbar'* (amazon.de); available only to customers with billing addresses in the United Kingdom who have a United Kingdom bank-issued credit card associated with their Amazon.co.uk account. (amazon.co.uk); *est uniquement disponible pour les clients disposant d'une adresse de facturation en France et d'une carte de crédit émise par une banque française associée à leur compte sur Amazon.fr.*

⁷⁹ <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52011DC0942:EN:NOT>

⁸⁰ KEA (2012), Licensing music works and transaction costs in Europe, www.keanet.eu/docs/music%20licensing%20and%20transaction%20costs%20-%20full.pdf

⁸¹ OECD (2013), "Empowering and Protecting Consumers in the Internet Economy", OECD Digital Economy Papers, No. 216, OECD Publishing. <http://dx.doi.org/10.1787/5k4c6tbcvqvq2-en>. An overview of licencing systems and costs in Europe can be found e.g. in KEA (2012),

model, the higher the transactions costs and that smaller providers are unable to bargain favourable terms with rights holders, which established large scale providers do.

For the consumers, the proposed legislation would not stop traders offering differing sets of products between Member States; therefore geographical restrictions are likely to still exist. However, this would be much clear to consumer and businesses, specifically those wishing to use products cross-border as it will be much easier to find and negotiate with the rights holder.

4.4.2 Collective rights management

The issues related to the collective management of rights have increased in their complexity with the widespread use of online platforms to download audiovisual and other content (such as books). The market for this type of products is cross-border in its nature, which makes a minimum harmonised standards governing Collective Rights Management desirable.

The technological and societal developments that have occurred in Europe in the last decade have called for a revision of the EU's legislative approach to the area of copyrights and their collection. After the Communication on the Management of Copyright and Related Rights in the Internal Market⁸² was launched in 2004, the Commission conducted a study exploring the potential initiative for a cross-border collective management on copyright.⁸³ The study identified a number of gaps that could be addressed through a legislative action, mainly with regard to the establishment of an adequate legal framework for the issuing and management of multi-territorial licenses. The proposal for a Directive regulating collective management of copyrights and related rights and the multi-territorial licensing of rights is focused on two areas: one is the necessity to better regulate the activities of the collective rights' management entities at a national level, following some recent scandals with regards to the management of the money resulting from collecting copyrights⁸⁴. The second and most important area is that of a multi-territorial license, particularly with regards to online musical works. The Commission acknowledges that the fragmentation of the internal market when it comes to online music services depend on a number of factors, but that the difficulties in obtaining a multi-territorial license play in this fragmentation are an important factor.

Title III of the proposed Directive addresses the issue of the multi-territorial license. The provisions aim, inter alia, at ensuring that the repertoire of all societies have access to

Licensing music works and transaction costs in Europe,
www.keanet.eu/docs/music%20licensing%20and%20transaction%20costs%20-%20full.pdf

⁸² Communication from the Commission to the Council, the European Parliament and the European Social and Economic Committee. The Management of Copyright and Related Rights in the Internal Market, COM(2004) 261 final, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2004:0261:FIN:EN:PDF>

⁸³ Commission Staff Working Document, Study on a Community Initiative on the Cross-Border Collective Management of Copyright, Brussels, 7 of July 2005,
http://ec.europa.eu/internal_market/copyright/docs/management/study-collectivemgmt_en.pdf

⁸⁴ See, for example, the case of the Spanish Collective Rights Management Society, SGAE

multi-territorial licensing through the establishment of reciprocal agreements between the different societies and the inclusion of a clause granting right holders licenses in cases where their own collecting society does not grant multi-territorial licenses or enters into reciprocal agreements.⁸⁵

The assessment of gains and costs associated with legislative changes in this area is far from straightforward. For example CRA (2014) conclude that:

“policy changes to limit stakeholders’ ability to exploit online content on a territory-by-territory basis are likely to impact social welfare through various mechanisms, transaction costs being only one of them. These mechanisms are likely to produce opposing effects on social welfare as the changes to the copyright framework are introduced”.⁸⁶

The proposal for the new Directive was amended and approved by the Parliament at First Reading in February 2014 and is now ready to follow the next steps of the legislative procedure. Negotiations between the Parliament and the Council have been finalised and an agreement has been reached. Until the legislation is implemented the gaps which may or may not remain cannot be assessed with the degree of precision that would be needed for this study.

4.4.3 Orphan works

An orphan work is a copyright protected work for which rights holders are positively indeterminate or uncontactable. Orphan works include books, newspaper and magazine articles, films, pictures, music, computer software and similar products that are still protected by copyright but whose authors or other right holders are not known or cannot be located or contacted to obtain copyright permissions. Libraries, university archives and other organisations who wish to keep a digital record of the work or place it online are legally required to seek legal permission before doing so. In the case of orphan works, the rights holders are unknown so it is often difficult to gain permission for use in the absence of common rules to make their digitisation and online display legally possible.

Precise estimates of the number of orphan works are not available, even though libraries, archives and museums hold a vast number of them. In April 2009, a study estimated that the collections of public sector organisations in the UK hold about 25 million orphan works⁸⁷. Although the number of orphan works in Europe is unknown the following quotation summarises the problem:

*“At 4 hours per book it would take one researcher over 1,000 years to clear the rights in just 500,000 books – a drop in the ocean when compared to the rich collections of Europe’s cultural institutions”*⁸⁸.

⁸⁵ Proposal, page 10

⁸⁶ Charles River Associates (2014), *Economic Analysis of the Territoriality of the Making Available Right in the EU*, Report for European Commission DG MARKT, http://ec.europa.eu/internal_market/copyright/docs/studies/1403_study1_en.pdf

⁸⁷ http://sca.jiscinvolve.org/wp/files/2009/06/sca_colltrust_orphan_works_v1-final.pdf

⁸⁸ Barbara Stratton (2011): Seeking New Landscapes - A rights clearance study in the context of mass digitisation of 140 books published between 1870 and 2010

In the absence of legislation, orphan works are not available for filmmakers, archivists, writers, musicians, and broadcasters for use in contemporary works. For public libraries, educational institutions and museums, they may be unable to digitalise old media or be reluctant to share this material with the public for fear of being sued by a reappearing rights holder for damages. The cultural, education and economic value of the works is consequently lost to society.

In response, Directive 2012/28/EU was adopted that is to be implemented by 29 October 2014. The Directive applies to certain uses of certain categories of orphan work by certain institutions (Article 1) including publicly accessible libraries, educational establishments, museums, archives, film or audio heritage institutions and public-service broadcasting organisations.

The Directive applies to the following categories of works:

- published written works, that are first published in a Member State, held in Knowledge and Cultural Heritage Institutions
- cinematographic or audiovisual works and phonograms (sound recordings) held in Knowledge and Cultural Heritage Institutions
- works of the kinds mentioned above that are unpublished, which have been publicly accessible in a Knowledge and Cultural Heritage Institution with the consent of the right holders, provided that it is reasonable to assume that the right holders would not oppose the use of the work according to the permitted uses of the work (Article 6).

The leading principles underlying the Directive include 'diligent search' procedures (Article 3) to ensure a work is an orphan work and the mutual recognition of orphan work status (Article 4) between Member States (i.e. a work which has been considered an orphan work in one Member State is considered an orphan work in all Member States, and may be used accordingly).

No apparent gaps can be identified in the directive *ex ante* and until a review of the Directive (due in October 2015) it is not possible to observe what gaps remain and would therefore result in a CoNE.

4.4.4 Re-use of Public Sector Information

The re-use of public sector information (PSI) (or government data) is of crucial importance for Europe's economical and societal development. An open access to the data generated by the public sector allows citizens to be involved in political and social life and helps addressing societal and scientific challenges. PSI is relevant to DSM in so far as open and cross-border access to data is needed for citizens and scientists to benefit from data held in libraries and archives of other Member States.

In order to ensure free and open access to public sector data across the EU, the EU legislator adopted, in 2003, a Directive on the re-use of public sector information⁸⁹. The European Commission revised the Directive in 2011 and acknowledged that *“in spite of progress since 2003, barriers to the cross-border use of public sector information still existed. Some of these barriers can be tackled within the existing legislation, others cannot”*⁹⁰. One of the main gaps identified by the Commission’s Communication with regards to the re-use of public sector information was the national differences existing in the amounts charged for the use of the data: some Member States allowed for a free or partially free access whereas others charged users for the access to those data.

To address this gap, the European Commission proposed a revision of the 2003 Directive, which was adopted in 2013⁹¹. The revised Directive extends its scope to cover libraries and museums and introduces a principle for the charges that can be applicable to the re-use of PSI: the amount charged cannot be more than the marginal costs incurred by the individual request for reuse. There are exceptions to this rule, notably for libraries, museums and archives that can charge reusers based on the principle of full costs recovery, including a reasonable return on investment (Article 6).

Member States have 2 years to transpose the provisions of the revised Directive into national law. At this stage no apparent legal or implementation gaps could be identified.

4.5 Administrative simplification and horizontal enablers

This section covers issues that can have substantial impact through making it easier for parties to interact and make transactions in the DSM.

4.5.1 E-Identification Authentication

The term electronic identification (eID) refers to any process using identification data from a person with the aim of positively representing this person. eID allows for a secure access to electronic services and for a safer manner for carrying out transactions at all levels. Identification through electronic means has increased in importance over the last decade, in view of the technological developments allowing citizens and consumers to carry out activities through electronic means.

Electronic signatures, as the first and most straight forward means of identifying an individual online, were regulated at EU level already in 1999. The eSignature

⁸⁹ Directive 2003/98/EC of the European Parliament and of the Council, of 17 November 2003, on the re-use of public sector information, Official Journal L 345/90, p. 90-96

⁹⁰ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Open data An engine for innovation, growth and transparent governance. COM(2011) 882 final, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0882:FIN:EN:PDF>

⁹¹ Directive 2013/37/EU of the European Parliament and of the Council of 26 June 2013 amending Directive 2003/98/EC on the re-use of public sector information, OJ L 175, 27.6.2013, p. 1-8

Directive,⁹² establishes a European framework for facilitating the use of electronic signatures in the Member States.

eIDs are hence at the basis of the proper functioning of large and significant areas of business, such as e-commerce and at the heart of the many initiatives that are being carried out within the eGovernment and eHealth areas. However, the lack of recognition and acceptance of electronic identifications in cross-border situations may hinder the development of the Internal Market. One of the gaps in this Directive is that it does not define obligations for national supervision of service providers.. It also does not cover many technologies which have become available since the Directive was drafted⁹³ and therefore remain outside of its scope, i.e. m-commerce applications which may require eID.

For that reason, the European Commission proposed, in 2012, a Regulation for trust services and eID.⁹⁴ The proposed Regulation covers electronic identification and electronic trust services (eTS - i.e., electronic signatures, electronic seals, time stamp, and electronic delivery service and website authentication). The proposal aims at establishing the legal framework for the mutual recognition and acceptance of eIDs and eTS in cross-border situations. It also reaffirms the internal market principle introduced by the eSignature Directive according to which trust services and products complying with the Regulation shall circulate freely (Article 1.4).

The ultimate purpose of the proposed Regulation is to award both eIDs and eTS the same legal status as paper-based processes. Citizens and consumers will then see their eID national schemes recognised in other Member States. Eventually, the Regulation will establish a secure and predictable regulatory environment for secure transactions across the EU.

The eSignature Directive is at final legislative stage with finalised negotiations between Council and the European Parliament and agreement on a final text.

Problems in the field of digital signatures are currently not so much legal ones, but rather issues of technical and practical implementation. As regards potential gaps remaining in the new Regulation one issue is that it does not foresee introducing a (voluntary) European eID scheme for legal persons. This could be justified by the fact that there are currently no well-developed national eID schemes for businesses (legal persons) in any of the Member States. In the opinion of the European Economic and

⁹² Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures, OJ L 13, 19.1.2000, p. 12-20, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2000:013:0012:0020:EN:PDF>

⁹³ Opinion of the European Economic and Social Committee on the 'Proposal for a Regulation of the European Parliament and of the Council on electronic identification and trust services for electronic transactions in the internal market' COM(2012) 238 final

⁹⁴ Proposal for a Regulation of the European Parliament and of the Council on electronic identification and trust services for electronic transactions in the internal market, COM(2012) 238 final, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0238:FIN:EN:PDF>

Social Committee introducing European eID scheme for legal persons would 'create immediate commercial benefit for Europe's (...) SMEs as they grow cross-border business.'⁹⁵

4.5.2 Agency and legal capacity

When conducting transactions, it is worth considering problems associated with agency (most retail trade is conducted through agents) and the legal capacity of the consumer to enter a contract, particularly online where the contracting process is not face-to face to make a judgment about the age of the customer (ensuring they are over the age of 18 in most Member States) or have the mental capacity to enter a contract.

Cross-border contracts concluded by electronic or distance means may have the same problems when it comes to agency representation as any other contract. Private International Rules do not apply to "the question whether an agent is able to bind a principal, or an organ to bind a company or other body corporate or unincorporated, in relation to a third party", as provided in Article 1(2)(g) of the Rome I Regulation. Although the Hague Convention on the Law Applicable to Agency 1978 covers both the employment relation and the external relation (between the agent and a third party), this Convention is only in force in a few Member States (France, Netherlands and Portugal).

A previous CoNE study estimated that the lack of EU/Private International Law (PIL) rules governing the issue of the relationship between an agent and the principal, and an agent and a third party, results in the fragmentation of laws at a national level which constitute a gap with an estimated cost of 14 million per annum⁹⁶. Issues of agency can arise in contracts conducted through distance means in cross-border situations. The clarification of the applicable rules to employment and external relationships in cross-border agency contracts would benefit the development of online sales.

Regarding legal capacity, Article 13 of the Rome I Regulation provides that:

"in a contract concluded between persons who are in the same country, a natural person who would have capacity under the law of that country may invoke his incapacity resulting from the law of another country, only if the other party to the contract was aware of that incapacity at the time of the conclusion of the contract or was not aware thereof as a result of negligence".

PIL rules cover the cases where a person with no legal capacity (e.g., a minor) enters into a contract in a country other than his or her own. However, this does not apply to e-commerce trade and distance contracts.

⁹⁵ Opinion of the European Economic and Social Committee on the 'Proposal for a Regulation of the European Parliament and of the Council on electronic identification and trust services for electronic transactions in the internal market' COM(2012) 238 final

⁹⁶ Cost of Non-Europe Report, CONE 3/2013, A European Code on Private International Law, European Parliament (2013), Annex, The perspective of having a European Code on Private International Law. Research paper by ICF GHK,
[http://www.europarl.europa.eu/RegData/etudes/etudes/join/2013/504468/IPOL-
JOIN_ET\(2013\)504468\(ANN01\)_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/etudes/join/2013/504468/IPOL-JOIN_ET(2013)504468(ANN01)_EN.pdf)

In summary, given the relatively limited size of expected CoNE (a share of €14 million corresponding to the share of disputed transactions leading to legal actions that were originally established electronically) and to avoid double-counting of calculations between different CoNE studies this issue is not further quantified.

4.5.3 Payments

The Single Euro Payments Area (SEPA) is where more than 500 million citizens, over 20 million businesses and European public authorities can make and receive payments in euro under the same basic conditions, rights and obligations, regardless of their location.

The introduction of the euro has helped to make cash payments anywhere in the euro area just as easy as at home. But until recently paying for goods or services electronically in another euro area country, for example with bank debit card was not particularly easy.. Also, cross-border money transfers within euro-area (or EU) could take much longer, and sometimes the beneficiary did not get the full amount⁹⁷.

Regards e-payments, the main gaps identified by Ecommerce Europe are predominantly of the character that cannot be effectively tackled by legislative actions. According to stakeholders and the European Commission⁹⁸, the only area with some potential scope for legislative action is related to the revision of the Payment Services Directive in order to explore legislative solutions supporting the growth of 'access to the payment account'. The Box below provides an explanation. In 2013, the European Forum on the Security of Retail Payments issued draft recommendations for public consultations⁹⁹. In particular it is postulated that:

'The regulatory and licensing regime of the revised Payment Service Directive should be wide enough to assure the reliability and security of third party payment providers both for the consumers and the merchant. Clear rules on liability should also be established.'

The potential role of legislation here is in creating safe conditions for the technology solutions to become more widespread as well as to ensure a fair access to the market and make third party payment systems more transparent

Payment account access services

Payment service providers (PSPs) issuing payment accounts to customers (account owners) are "account servicing PSPs". Although third-party service providers (TPs) can be PSPs, they

⁹⁷ http://europa.eu/rapid/press-release_MEMO-14-502_en.htm?locale=en

⁹⁸ Commission Staff Working Document, e-Commerce Action Plan, 2012-2015. State of Play 2013. SWD(2013), 153 final, http://ec.europa.eu/internal_market/e-commerce/docs/communications/130423_report-ecommerce-action-plan_en.pdf

⁹⁹ ECB (2013), Recommendations for Payment Account Access Services, European Central Bank, January 2013, available at: <http://www.ecb.int/pub/pdf/other/recommendationspaymentaccountaccessservicesdraftpc201301en.pdf?181a9a2566fe901def47ddd1b44cc567>

are often merely non-licensed service providers and not PSPs, as long as they do not enter into the possession of funds or provide one of the activities listed in the annex to the Payment Services Directive. The issue of payment access services discussed here refers to TPs providing payment account access services for accounts they have not issued themselves. These internet-based payment account access services are account information services and/or payment initiation services.

- Account information services provide information on several accounts held by a person with one or several PSPs and present that information to the person in a consolidated and user-friendly way. To provide this service the TP needs to have access to the person's payment account(s).
- Payment initiation services initiate payment transactions via a person's internet-enabled payment account. The technical implementation of this service can differ depending on whether or not the payee is actively involved in the payment initiation (e.g. during online shopping) and whether the TP's software is used by the account owner to transmit his/her credentials to the account servicing PSP.

Source: adapted from European Central Bank, Recommendations for "Payment Account Access" Services Draft Document for Public Consultation
<https://www.ecb.europa.eu/pub/pdf/other/recommendationspaymentaccountaccessservicesdraftpc201301en.pdf>, pp. 1-2

The entering into force of the Single European Payment Area (SEPA), in August 2014 (for euro area countries), should already provide a platform for easier and more transparent distance payments across the EU¹⁰⁰. The full implementation of a Single Payment Area will allow suppliers in the sector of payments to "*develop low cost new technology products and services*"¹⁰¹.

In line with the above mentioned recommendations with regards to the amendment of the Payment Services Directive,¹⁰² the European Commission adopted, in July 2013, a legislative package in the area of payments. This package, which partially responded to the Commission's Green Paper on card, internet and mobile payments,¹⁰³ includes a proposal for new Payment Services Directive (PSD2).

The proposed Directive¹⁰⁴ recognises the importance of creating a single market for electronic payments in order to ensure a level playing field between different providers and a high degree of consumer protection.

¹⁰⁰ The original migration date was 1 February 2014, but the process was somewhat delayed in euro area countries giving ground to the six months extension approved in Regulation (EU) No. 248/2014

¹⁰¹ http://ec.europa.eu/internal_market/payments/sepa/benefits/index_en.htm

¹⁰² Directive 2007/64/EC of the European Parliament and of the Council of 13 November 2007 on payment services in the internal market amending Directives 97/7/EC, 2002/65/EC, 2005/60/EC and 2006/48/EC and repealing Directive 97/5/EC, O.J. L 319, 5.12.2007, p. 1-36, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32007L0064:EN:NOT>

¹⁰³ Green Paper: Towards an integrated European market for card, internet and mobile payments COM(2011) 941 final, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0941:FIN:EN:PDF>

¹⁰⁴ Proposal for a Directive of the European Parliament and of the Council on payment services in the internal market and amending Directives 2002/65/EC, 2013/36/EU and 2009/110/EC and

The initiative acknowledges that some elements of the payment market, especially with regards to internet and mobile payments, differ at national level, making it difficult for consumers and retailers to achieve a high level of efficiency and protection.¹⁰⁵ The proposed Directive underlines the existence of regulatory gaps in these areas which are to be filled once the new Directive enters into force.

To this aim, the new Article 3.1 restricts the existing digital content exception. The current Directive exempts from its scope certain electronic and telecom payment transactions where that the operator does not act only as an intermediary but also adds value to the goods or services purchased (such as ringtones or premium services). This exemption was being unevenly applied in the Member States, which resulted in uncertainty for the consumers and in different situations across the EU for the same services.

The new Directive has filled this gap in extending the scope to all transactions except for those related to payment services when provided as ancillary services to electronic communications services provided that they stay under a certain threshold (50 € for a single transaction and 200 € of cumulative billing in a given month).

Other barriers identified by Ecommerce Europe in the area of e-payments appear not to be related to legislative deficiencies. The issues include:

- Support for ‘solutions that re-use existing authentication methods to improve security, protect users’ privacy and streamline user experience’.
- For cards that remain the dominant payment method in e-commerce the recommendations include:
 - Improve the user experience of 3D Secure and harmonise where possible and acknowledge the reduced risk associated with 3D Secure transactions by lower merchant service fees
 - In the spirit of SEPA, merchant service charges should not distinguish between domestic and cross-border transactions.

The European payments industry is called on to implement a pan European Online Banking e-Payment solution. Ecommerce Europe believes that *‘with an integrated market for credit transfers, the reach of this payment methods can compete with that of cards and it is up to the payment industry to make this reach available for use in e-commerce’*.

The remaining issue might then be one of commercial practice in the Member States: as an example, direct money transfer is – traditionally – one of the preferred modes of payment by consumers and businesses in several Member States such as Austria and Germany. For trade between these Member States, SEPA, once it has been widely accepted, will have a significant impact when there is no longer much difference depending on where the bank account is held. Rightly or wrongly, consumers in these

repealing Directive 2007/64/EC, COM(2013) 547 final, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2013:0547:FIN:EN:PDF>

¹⁰⁵ *Ibid*, p.97

countries have security concerns using credit cards especially in e-commerce and will resort to money transfer whenever offered and may even decline doing business when the trader offers credit-card as the only means of payment. On the other hand, in France and the U.K., credit cards are widely used whereas, rightly or wrongly, money transfer is perceived as burdensome. The U.K. is also said to be the likely market for the widespread introduction of payments using mobile devices such as phones to Europe. SEPA will have little impact in practice there. In Estonia, as another example, direct account draft using electronic identification is the preferred mode of payment for e-commerce.

In summary, therefore, there are only very limited legislative gaps identified that are related to payments. The only potentially relevant identified gap is lack legislative solutions incorporated into the Payment Services Directive supporting the growth of 'access to the payment account'.

4.5.4 Postal and delivery services

The current legislative framework in postal and delivery services is mainly shaped by the Postal Services Directive (PSD) (Directive 97/67/EC as amended by Directive 2002/39/EC and as amended by Directive 2008/06/EC) and Consumer Rights Directive (since June 2014). PSD inter alia aim at accomplishing the Single Market for postal services and ensure a high quality universal postal service. These objectives are pursued by opening up the sector to competition (largely completed in 2012). The improvement of quality of service, in particular in terms of delivery performance and convenient access are fundamental aspects of this policy. The Commission monitors and ensures the correct implementation of the regulatory framework.¹⁰⁶

PSD is relevant to parcel delivery, however, as observed in the recent EC Communication *"in practice, (only) 5-10% of cross-border parcel delivery flows fall under the universal service provisions because the minimum requirements of the PSD cover only the basic or so-called "over the counter" (thus mainly C2C) parcel services"*¹⁰⁷.

According to the Commission's Green Paper on parcel delivery market and e-Commerce, *"the current regulatory framework for postal services (Directive 2008/6/EC) is not designed to address the needs of consumers who buy online"*¹⁰⁸. In December 2013, The Commission published the Roadmap for completing the single market for parcel delivery¹⁰⁹.

¹⁰⁶ The EU single market postal services,

http://ec.europa.eu/internal_market/post/index_en.htm

¹⁰⁷ Communication from the Commission. A roadmap for completing the single market for parcel delivery Build trust in delivery services and encourage online sales /* COM/2013/0886 final */

¹⁰⁸ Green Paper "An integrated parcel delivery market for the growth of e-commerce in the EU", COM(2012) 698 final, http://ec.europa.eu/internal_market/consultations/docs/2012/parcel-delivery/121129_green-paper-parcel-delivery_en.pdf

¹⁰⁹ Communication from the Commission. A roadmap for completing the single market for parcel delivery Build trust in delivery services and encourage online sales /* COM/2013/0886 final */

The report by Copenhagen Economics (2013) reveals that problems related to delivery services are a key reason for not buying online¹¹⁰. Delivery-related problems are responsible for 68 per cent of the situations where e-shoppers have added items to their shopping chart, but abandoned the shopping chart before finalising the order. The aspects of delivery found to cause the greatest dissatisfaction were returns, delivery prices, delivery speed and value added delivery services (e.g. parcel tracking). In particular the study identifies interoperability between the different stakeholders as a key challenge and three particular categories of gaps are identified:

- Information gaps, when e-shoppers and e-retailers do not have easy access to adequate and information about what delivery services are available.
- Service gaps are defined as situation when certain types of delivery services preferred by partners in e-commerce are not available to them. An example would be when express delivery option is not available.
- Performance gaps are defined as situations when delivery operators and e-retailers fail to fulfil their obligations (e.g. delivery is delayed).

The Commission 2013 communication also indicates that compared to national delivery, cross-border delivery is affected by substantial additional regulatory and administrative requirements, and the lack of interoperability between delivery companies (e.g. in terms of tracking, or common labelling systems)¹¹¹.

Policy solutions to information gaps may include initiatives such as information dissemination, the creation of trust marks for delivery and raising customer and supplier awareness¹¹². In each case, there is a potential role for EU level legislation to ensure that approaches are harmonised across Europe for the benefit of the single market. In terms of service gaps Copenhagen Economics identifies the following potential policy solutions¹¹³:

To address insufficient interoperability:

- implementation of general requirement to base tracking systems on open on application programming interfaces to enable operation across IT systems; and
- standardisation of tracking systems.

To facilitate further industry collaboration on cross-border tracking:

- introduction of EU-wide addressing and labelling standards;
- introduction of a EU-wide e-commerce friendly letter box standard; and
- continued development of initiatives to increase interoperability.

¹¹⁰ Copenhagen Economics (2013) E-commerce and deliver; A study of the state of play of EU parcel markets with particular emphasis on e-commerce.

¹¹¹ Communication from the Commission. A roadmap for completing the single market for parcel delivery Build trust in delivery services and encourage online sales /* COM/2013/0886 final */

¹¹² Copenhagen Economics (2013) E-commerce and delivery; A study of the state of play of EU parcel markets with particular emphasis on e-commerce.

¹¹³ Ibid

To address weak competition:

- effective enforcement of competition law;
- policies to reduce structural entry barriers;
- extension of the postal USO to more parcel/packet products;
- regulation based on significant market power framework; and
- introduction of price regulation on cross-border shipments.

Finally the report by Copenhagen Economics suggests EU-wide trust marks for delivery and access to address databases for the purpose of parcel delivery, which could further promote better delivery performance. Of note, many of the proposals do not involve legislative action as many can be achieved by establishing harmonised standards (i.e. labelling, letter box packaging, interoperability, etc.) and guidelines on the implementation of tracking systems.

In addition a related issue in terms of performance on delivery is that letter box delivery can in some instances be an option only if letter boxes (including their opening) are sufficiently large. Today, standard formats for letter boxes vary significantly between countries. In many countries, the standardised height of the letter box is no more than 2-3 cm.¹¹⁴ This might be too small to fit in a packet containing e.g. a book. As a result, the delivery may go to a post office or collection point for pick-up. Thus, increasing the standard height of letter boxes could allow for more customer-oriented delivery and improved performance as more items could be delivered directly to the e-shoppers' letter boxes.¹¹⁵

Some gaps in the market of parcel delivery service will be filled by the Consumer Rights Directive (such as issues related to information provision, right of withdrawal, etc.). However, there are some remaining areas which the CRD does not address:

- The prices of parcel deliveries are not covered by the CRD;
- There are no provisions on the potential liability of the operators carrying out the delivery or on the additional features offered, such as tracing options (i.e. the timeliness of delivery within an agreed period); and
- The Directive also does not cover *“the place and modalities of delivery and the rules concerning the determination of the conditions for the transfer of the ownership of the goods and the moment at which such transfer takes place”*¹¹⁶.

It is worth highlighting the observation made in the Commission 2013 Roadmap that the lack of inter-operability between delivery operators is not significantly related to regulatory fragmentation and more so to traditional operational structures. Dominance of domestic delivery services in traditional postal markets has led to optimisation of

¹¹⁴ Ibid

¹¹⁵ Copenhagen Economics, 2013, E-commerce and delivery; A study of the state of play of EU parcel markets with particular emphasis on e-commerce

¹¹⁶ Joost Vantomme, “Re-regulation for parcel delivery in the e-commerce context?”, http://www.hkstrategies.be/UserFiles/20/File/Re-regulation%20parcel%20delivery_Vantomme_Elgar%20publication_2014.pdf

operational processes, including IT systems to such a situation. In contrast, cross-border parcel flows, including B2C have not played any significant role prior to the emergence of e-commerce¹¹⁷.

It is clear that many of the issues identified are equally relevant in national markets as in the case of cross-border deliveries. Also, many of these issues do not necessarily call for legislative action and instead need various co-ordinated efforts by different stakeholders, including Member States, European Commission, delivery operators, and e-retailers. The recent developments in the area included a number of commitments made by a group of postal operators and the International Post Corporation (IPC) in response to the identification of clear public policy objectives in the 2012 Green Paper. These commitments pertain to some of the areas covered by the Green Paper (i.e., better information to e-retailers; efficient return solutions; track-and-trace functionalities for lighter parcels; improved labelling systems and better linked-up consumer complaint handling). The 2013 Commission Roadmap does not foresee legislative actions, but instead defines a number of steps to be taken by various stakeholders.

There is scope for improving efficiency of implementation of the Postal Directive and EU competition rules. Problems in this area have been identified as leading to '*cross-border postal services [being] (...) less competitive, more distorted, and less transparent than they should be*' (WIK Consult, 2013)¹¹⁸.

In summary, it is currently very difficult to pinpoint individual legislative gaps where the closure would clearly benefit the single market bringing overall net gains. Considerable information gaps exist especially in relation to the availability of various delivery services and associated delivery options – both for consumers and e-retailers. It remains to be seen how much can be achieved by voluntary self-regulation of the sector, adoption of good practice rules and similar actions. Potentially existing legislative gaps may account for a certain fraction of all barriers to the DSM.

4.6 Summary of identified gaps in EU legislation concerning E-commerce that hinder the DSM

The review of current and proposed legislation relevant to e-commerce and the DSM suggests that there are legislative gaps, and in some instances of information and implementation shortcomings which generate CoNE, including:

- There are gaps in consumer protection for digital products that are intangible (e.g. software or music that is downloaded or streamed on-line instead of being provided on a DVD disk). These gaps weaken the consumer position as

¹¹⁷ Communication from the Commission. A roadmap for completing the single market for parcel delivery Build trust in delivery services and encourage online sales /* COM/2013/0886 final */

¹¹⁸ WIK Consult (2013), Main Developments in the Postal Sector (2010–2013), study for DG Internal Market,
http://ec.europa.eu/internal_market/post/doc/studies/20130821_wik_md2013-final-report_en.pdf

regards guarantees, remedies in relation to software/spare parts and after-sales service, damages and cross border enforcement. These gaps can be expected to affect consumer behaviour. The quantification of ensuing effects and their interpretation in terms of CoNE would, however, be a very complex undertaking going beyond the scope of this study. Existing analyses of the related issues have not provided quantitative assessment of effects (e.g. IBF 2012; Jacquemin 2010, Bradgate 2010)¹¹⁹.

- There remains some uncertainty regarding the application of commercial guarantees to digital products. In particular, contracts concluded between consumers are not covered by guarantees. C2C transactions are important in the DSM, and include online auctions some of which involve trading cross border and do not involve professional sellers (The CRD would apply if professional seller were involved). However, the share of cross-border C2C sales is likely to remain low (although no precise data is available) and consequently cross-border aspects of this gap are of low importance. The associated CoNE is likely to be too small to justify a separate estimation exercise and in any case no data or information sources have been identified that would enable this.
- With regard to the Unfair Terms Directive (93/13/EEC) it is observed that a situation may occur where in parallel cases (i.e. when an infringement of the directive occurs in multiple Member States), different judgements are reached as standard contract terms and their presentation differs between Member States. However, the practical relevance of such cases appears to be limited given that this generally may occur in case of companies with physical presence in more than one Member State, i.e. a rather limited number of larger companies. Given that associated costs are mainly in the form of legal services that such companies would need to buy to ensure compliance with standard contract terms and their presentation in relevant Member States the scale of the problem and associated costs are believed to be low and hence again not justifying a separate quantification exercise.
- There are potentially considerable legislative gaps related to cloud computing. Specifically, the lack of liability of cloud computing service providers and the inconsistency of transnational laws and regulations are important barriers to wider adoption of cloud based solutions.

¹¹⁹ IBF (2012), *Study on Digital Content Products in the EU*, Study under Letter of Contract N° 17.020200/12/629623, IBF International Consulting for the European Commission, http://ec.europa.eu/consumers/enforcement/sweep/digital_content/docs/dcs_complementary_study_en.pdf; Jacquemin, Herve (2010) *Digital Content and Consumer Protection within European Law*; paper presented at the 8th International Workshop for Technical, Economic and Legal Aspects of Business Models for Virtual Goods, Namur 30.9-1.10.2010, http://virtualgoods.org/2010/VirtualGoodsBook2010_51.pdf; Bradgate Robert (2010), *Consumer Rights in Digital Products*. A research report prepared for the UK Department for Business, Innovation and Skills, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/31837/10-1125-consumer-rights-in-digital-products.pdf

- As regards digital signatures, it could be argued that a lack of a (voluntary) European eID scheme for legal persons could be considered a legislative gap. Establishing such a scheme could help e.g. in terms of higher cross-border contestability of public procurement markets thanks to e-procurement. The EU legal competence to deal with eID for individual persons is less clear. However, more generally problems in the field of digital signatures (also for legal persons) are not so much legal ones, but rather relate to technical and practical implementation. Existing in-depth studies, including impact assessments carried by the European Commission have not attempted quantification of effects from various considered scenarios related to legislative and other action supporting mutual recognition and acceptance of e-Identification and e-Authentication across borders¹²⁰. There are good grounds for such an approach given that digital signatures can potentially act as enablers of new types of B2B and B2C interactions that are difficult to describe and quantify with reasonable degree of precision. DSM weaknesses in this sphere cannot be individually captured in a quantitative manner. Hence, this study does not attempt to provide a separate quantification of CoNE related to digital signatures.
- As already assessed in a separate CoNE study several issues can arise with regard to the conclusion of contracts through distance means by persons lacking full legal capacity¹²¹. Given the small size of expected CoNE related to e-commerce aspects (a share of the previous estimate of €14 million due to disputed transactions leading to legal actions that were originally established electronically) and to avoid duplication of estimations in other CoNE studies this issue is not further estimated in this report.
- In relation to payments no significant legislative gaps has been identified. The only potentially relevant identified gap is the lack of legislative solutions incorporated into the Payment Services Directive supporting the growth of 'access to the payment account'. However, there are issues related to commercial practice differing between Member States and given the existence of quantitative analyses on the effects of the single market in payments this study attempts to quantify CoNE related to the DSM.
- As regards postal and parcel delivery, it is currently very difficult to pinpoint individual legislative gaps the closure of which would clearly benefit the single market. Considerable information gaps exist especially in relation to

¹²⁰ Commission Staff Working Paper Impact Assessment Accompanying the proposal for a Regulation of the European Parliament and of the Council on electronic identification and trust services for electronic transactions in the internal market, SWD (2012) 135. Intrasoft and TNA (2011), Study on Impact assessment for legislation on mutual recognition and acceptance of e-Identification and e-Authentication across borders, SMART 2011/0075 IAV.

¹²¹ Cost of Non-Europe Report, CONE 3/2013, A European Code on Private International Law, European Parliament (2013), Annex, The perspective of having a European Code on Private International Law. Research paper by ICF GHK, [http://www.europarl.europa.eu/RegData/etudes/etudes/join/2013/504468/IPOL-JOIN_ET\(2013\)504468\(ANN01\)_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/etudes/join/2013/504468/IPOL-JOIN_ET(2013)504468(ANN01)_EN.pdf)

availability of various delivery services and associated delivery options – both for consumers and e-retailers. It remains to be seen how much will be achieved by voluntary self-regulation of the sector, adoption of good practice rules and similar actions. Potentially existing legislative gaps may account for some of the barriers to the single market in postal and delivery services. This study provides an assessment of CoNE related to postal and parcel delivery services.

While other more minor gaps in EU legislation may exist as well as informational or implementation gaps, those taken forward are the most significant. In many cases it was difficult to identify potential sources of CoNE given on-going legislative or implementation processes. In certain areas implementation is not expected until 2015-2016 when further CoNE might be identifiable. The next section estimates the direct costs related to the main gaps identified gaps which relate to : i) cloud computing; payments; and, iii) postal and parcel delivery services.

5. The estimated direct Costs of Non-Europe of the incomplete Digital Single Market

This Section estimates the direct impacts of the identified gaps. The direct impact are the initial costs that need to be paid by some market participants. While such estimates are meaningful and can be illustrative they need to be interpreted cautiously. In particular the estimates do not necessarily indicate broader economic impacts for two reasons. First, additional costs for some market participants may translate into higher revenues and profits of other market participants. For example, consumers' CoNE can be a source for additional revenues and profits for businesses. Second, there are strong interactions between economic sectors and changes in costs of certain good or services imply relative prices changes and hence affect consumption and investment spending decisions for other goods and services. The broader economic impact taking into account such interactions are estimated in Section 6. Estimates of direct CoNE are given for three areas: cloud computing; payments; and postal services.

5.1 Costs of Non-Europe in cloud computing

5.1.1 The scope and potential of cloud computing?

One of the widely used definitions of cloud computing is provides by the National Institute of Standards and Technology of the US Department of Commerce. It states that:

“Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction”¹²².

Cloud computing encompasses many online services such as webmail services (e.g. Gmail, Hotmail, etc.), storage services (e.g. Dropbox), social networks (Facebook, Twitter etc.). Many consumers are unaware that several of the activities they take part in online are cloud-based. Businesses using the cloud require reduced ICT infrastructure and are able to up-scale and down-scale ICT much more quickly and at lower cost than otherwise possible. This enables web-based businesses to respond more flexibly to changing demand. Consumers benefit from the reduced costs to business reflected in lower prices, but also from the wider range of services available online, including personal cloud space. Using a cloud computing composed of a shared web capacity opposed to a traditional independent ICT capacity also means that stakeholders benefits from scale economies, specifically in energy consumption and greenhouse gas emissions.

¹²² NIST (2011), The NIST Definition of Cloud Computing, Special Publication 800-145. <http://csrc.nist.gov/publications/nistpubs/800-145/SP800-145.pdf>.

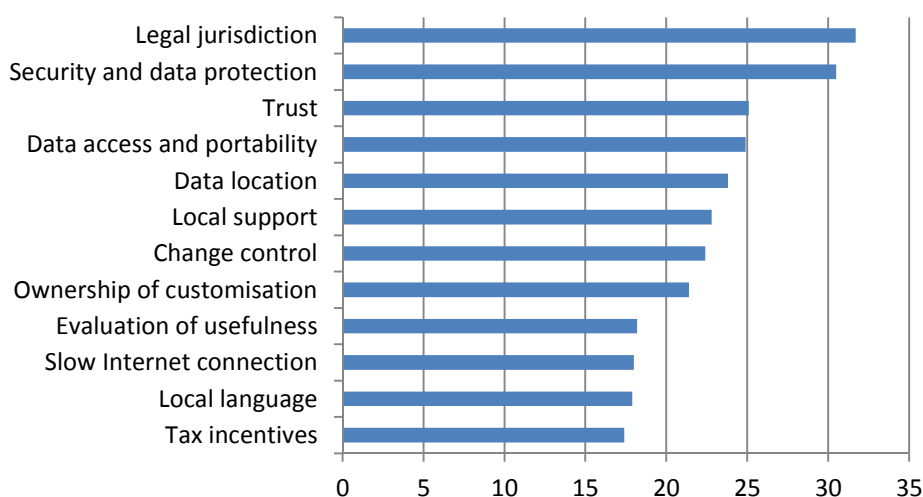
5.1.2 Legislative gaps affecting cloud computing that constrain the Digital Single Market

The main reasons that consumers were not adopting cloud computing services were outlined in the IDC (2012) study that also estimated associated foregone benefits¹²³.

The IDC (2012) survey asked individual users of certain cloud computing services about most important barriers the removal of which would ease concerns about adopting further cloud services. The main concerns revolved around the security, protection, and privacy of the data they provide to such services.

Such concerns seem justified given that, as noted by the Commission's working paper¹²⁴, B2C contracts in cloud computing include terms which do not comply with data protection legislation or unfairly reduce the rights of the consumer. For example, terms that authorise the processing of more data than is necessary for the provision of the service or disclosure to third parties without further information.

Figure 1 Business concerns related to adoption of cloud computing (per cent of respondents stating barrier is restricting (very/completely) cloud adoption)



Source: IDC (2012), p. 34.

Businesses have similar concerns to consumers when it comes to adopting of cloud computing services. Figure 1 illustrates the main barriers to adoption or broadening scope of use of cloud computing services reported in the survey of EU businesses. Worries related to legal jurisdiction top the list of concerns. In the survey these were identified when respondents indicated "If we have a dispute with the cloud service provider,

¹²³ IDC (2012), Quantitative Estimates of the Demand for Cloud Computing in Europe and the Likely Barriers to Up-take - SMART 2011/0045, Report for DG Information Society of the European Commission. Some of the study results are then cited in European Commission Staff Working Document - Unleashing the potential of cloud computing in Europe (COM(2012) 529 final).

¹²⁴ European Commission Staff Working Document - Unleashing the potential of cloud computing in Europe (SWD(2012) 271 final)

I may have to go to court in another country inside the EU" or "If we have a dispute with the cloud service provider, we may have to go to court outside the EU". Worries over security and data protection guarantees were the second most important barrier. Difficulty in judging the trustworthiness of providers of cloud services and lack of control on and knowledge about location of corporate data followed among main barriers.

IDC (2012) also observed that companies that fully use several cloud services (e.g. not only e-mail but also content management, sales management, human resource management, databases, etc.) are particularly concerned with problems that may potentially be minimised by policy intervention (security and data protection, legal jurisdiction, data access and portability). Overall, disaggregated data were not provided that would enable an assessment of all respondents indicating any of these four types of barriers. Based on the information that at least one of the top six barriers was indicated by 62 per cent of respondents it is estimated that some 50 per cent of respondents mentioned one of the three barriers that can be influenced by policy.

5.1.3 Estimates of the Cost of Non-Europe in cloud computing

Cloud computing had the potential to bring many benefits to both consumers and businesses. As indicated by Civic (2012) the main benefits to consumers relate to:

- Convenience, flexibility, ease of use;
- Reduced costs;
- Improved access to information and online content; and
- Automatic maintenance and updating, and potentially better security¹²⁵.

For businesses the main benefits relate to:

- Possibility to avoiding / limit capital expenditure for IT;
- Improved computer performance;
- Ease of co-operating between businesses thanks to project management and collaboration cloud services;
- Ease of designing custom applications and providing original services and products to consumers, businesses and administrations.

All this is believed to lower barriers to entry for new firms, and to enable bringing new products to market more quickly. It should also help with the creation of innovative SMEs (Civic, 2012).

Ultimately, businesses are expected to see computing costs decline due to the economies of scale generated from having a large and flexible server capacity located in the cloud. When businesses decide to adopt cloud computing services, they are in effect mutualising their assets. For example instead of businesses investing money in their own private server, they are pooling their money together and asking a third party (Google, Dropbox, Amazon, etc.) to provide storage space. Cloud computing providers

¹²⁵ Civic Consulting (2012), Cloud Computing, European Parliament Policy Department A (IP/A/IMCO/ST/2011-18; PE 475.104).

benefit from economies of scale, thus they can provide storage at a lower cost to businesses as compared to if businesses were to purchase servers individually.

For the public sector the main benefits relate to:

- Possibility to avoiding / limit capital expenditure for IT;
- Improved computer performance;
- Improve the quality and innovative character of services offered to citizens (Civic, 2012).

This can be driven in particular by larger competition of suppliers of IT services to the government, and scope for much easier organisation of IT public procurement processes. One important aspect of this is transparency of full costs and features of the required IT services so that a comparison between offers becomes easy.

While the identification of mechanisms of potential gains from wider adoption of cloud computing for consumers, businesses and government is relatively straightforward, quantification of these gains and in particular specifically of gains that could be attributed to removal of EU-level legislative gaps and /or gaps in information or implementation of EU legislation is very challenging. This exercise is nevertheless undertaken below, but there is inevitably a high degree of uncertainty concerning the estimates.

The estimates of likely direct costs of non-Europe in cloud computing have been based on identification and assessment of:

- Potential savings on ICT expenditure from adopting cloud solutions expressed as a share of total expenditure;
- Scale of ICT expenditures to which such savings can be applicable (expressed in monetary terms); and
- Share of expansion of cloud adoption that can be attributable to removing identified legislative gaps in cloud computing.

The starting point was the collecting of existing evidence or expectations concerning the size of potential savings through the wider adoption of cloud computing solutions. No monetary estimates have been identified attempting to quantify gains from wider use of cloud computing by individuals.

Etro (2011) refers to assumptions that private organisations adopting cloud computing services could reap cost savings in the range of 20 per cent and 50 per cent of current ICT expenditure¹²⁶. A survey of EU companies reported in the IDC (2012) study found that among the organisations that already use cloud services around 60 per cent experienced savings in the range 5-29 per cent relative to traditional IT solutions. Around 10 per cent of companies observed savings exceeding 10 per cent. Around 20 per cent either thought it was too early to assess or they were not able to provide an

¹²⁶ Etro F. (2011), *The Economics of Cloud Computing*, paper prepared for Annual Conference on European Antitrust Law 2011; <http://www.intertic.org/Policy%20Papers/Report.pdf>.

estimate of effects for other reasons. The weighted average savings on the basis of the IDC (2012) survey results is around 18 per cent¹²⁷.

One public sector initiative in cloud computing is the UK government's G-cloud project launched in 2012. It is an online marketplace where suppliers offer their services to the public sector via the G-Cloud framework. Public sector bodies can review and buy these services on CloudStore¹²⁸. The project is still at an early stage and during the first two years (2012-2013) its share in total public ICT spending in the UK was estimated at just around 0.7 per cent¹²⁹. Some existing indicative assessments put potential direct savings as high as 50 per cent¹³⁰. Other existing ex ante assessments of potential public sector savings are in the range of 10-25% and 25-50% (Etro 2011 and West 2010)¹³¹.

The European Information Technology Observatory has estimated that ICT sales in Western Europe in 2012 amounted to €617 billion¹³². Considering the relative size of Eastern European EU countries this suggests total EU spending could have been in the range of €700 billion¹³³. Based on available data it can be estimated that between one third and half of this amount has likely to have been spent on telecommunications and the remaining half, i.e. around €420 billion (assuming 60% share) on hardware, software and services¹³⁴.

¹²⁷ This is based on data reported in Figure 5 (page 22) of IDC (2012): *Quantitative Estimates of the Demand for Cloud Computing in Europe and the Likely Barriers to Up-take - SMART 2011/0045*, Report for DG Information Society of the European Commission. It is assumed that distribution of responses within indicated savings bracket is symmetrical and savings for companies reporting savings in excess of 50 per cent (some 2 per cent of respondents) are trimmed to 50 per cent to counterbalance around 2 per cent of companies reporting negative savings from adoption of cloud computing (their response is interpreted as indicating zero savings). The distribution of responses among those who do not provide an estimate is assumed to be identical to those providing a numerical estimate.

¹²⁸ <https://www.gov.uk/how-to-use-cloudstore>

¹²⁹ <http://www.publicprocurementinsider.com/2014/02/13/how-is-g-cloud-doing/>

¹³⁰ <http://www.publicprocurementinsider.com/2014/05/15/g-cloud-cuts-it-cost-by-50-singleton/>

¹³¹ Etro F. (2011), *The Economics of Cloud Computing*, paper prepared for Annual Conference on European Antitrust Law 2011; <http://www.intertic.org/Policy%20Papers/Report.pdf> and West, D. M. (2010), *Saving Money Through Cloud Computing*, Governance Studies at Brookings, 7 April.

http://www.brookings.edu/~media/research/files/papers/2010/4/07%20cloud%20computing%20west/0407_cloud_computing_west

¹³² EITO (2012): *Global ICT market grows by five per cent*, Press release.

¹³³ <http://www.cceitandtelecom.com/news/45034/central-and-eastern-europe-ict-spending-grows>. One other source of data are Statistics Denmark reporting that in Danish companies with 10+ employees annual ICT expenditures per full time equivalent were in the range of € 7460 (<http://www.statistikbanken.dk/statbank5a/SelectVarVal/Define.asp?Maintable=VITU207&PLanguage=1>). Scaling this up by the total number of employees in the EU in 2012 (Eurostat, Labour Force Survey data) one gets a total figure of around € 1,300 billion. Given that Denmark is among more developed EU countries and that per employee expenditures likely differ substantially between sectors and between different company size bands the figure of € 700 billion looks plausible.

¹³⁴ Assumptions on shares in telecommunication spending on total ICT spending are based on McKinsey (2011), *B2B 2015: The future role of telcos in ICT markets*, http://www.mckinsey.com/~media/McKinsey/dotcom/client_service/Telecoms/PDFs/REC

No publicly available data or estimates have been identified that would divide European IT expenditure between individual consumer, business and public sector IT¹³⁵.

Given the substantial uncertainty and variability of assessments of potential direct savings on IT expenditures in the private and public sector due to adoption of cloud-based solutions it is reasonable to assume that the savings of between 15 per cent and 30 per cent are possible. Applying this range to the estimated total annual expenditure of around €420 billion leads to estimated saving in the range of €63 - €126 billion per annum. However, clearly not all of these potential savings can be attributed to EU-level legal, informational and implementation effort. To obtain an estimate this study focused on the share of businesses particularly concerned with problems that may potentially be minimised by policy intervention (security and data protection, legal jurisdiction, data access and portability) as reported by the IDC (2012) study, that is taken to be around 50 per cent of the surveyed companies. This leads to an estimate of direct CoNE in the range of € 31.5-63 billion.

Estimated direct CoNE – Cloud computing

Cost savings forgone by private and public sector of € 31.5 – 63 billion per annum

5.2 Costs of Non-Europe in payments

Payments are transfers of money (or another item of value) between parties of a transaction such as provision of goods or services or both or to fulfill a legal obligation. Electronic payments may be defined as all payments that are initiated, processed and received electronically (Hartmann, 2006)¹³⁶.

The size of the payments market is very large. BCG (2013) estimates that in 2012 there were around 3.1 billion individual cross-border transactions with a cumulative value of USD 6.1 trillion¹³⁷.

There is a range of different e-payments solution in Europe. Online payments are becoming more and more common across the EU as e-commerce expands . Even during the recent economic downturn, e-commerce has continued to grow. This has coincided with the increased proliferation and reduced cost of mobile internet. A related

ALL_No17_B2B_Trends.ashx; <http://www.ceeitandtelecom.com/news/45034/central-and-eastern-europe-ict-spending-grows>

¹³⁵ As regards public sector IT expenditure this likely owes to the existing fiscal reporting schemes that in many cases do not enable clear identification of IT spending. As an indication of the market value of such data, IDC, a consultancy offers Western Europe Government Sector IT Spending Forecast Pivot Table, 2011–2016 at the prices of USD 40,000 (<http://www.idc.com/getdoc.jsp?containerId=GIPP53U>).

¹³⁶ Hartmann, M. E (2006), E-Payments Evolution, <http://www.springer.com/978-3-7908-1651-8>

¹³⁷ Boston Consulting Group (2013), Global Payments 2013, https://www.deutschebank.nl/nl/docs/BCG_2013_Global_Payments_2013.pdf

development supporting growth of e-payments was the expansion of use of internet banking. Eurostat data indicate that in 2013, 42 per cent of the EU28 population aged 16-74 used the Internet for Internet banking. In 2007 the figure was 25 per cent. There is a large variation between Member States so that in Northern European countries Internet banking is used by 80 per cent or more of the population, compared to 23 per cent in countries such as Italy, Cyprus or Croatia and 4 per cent in Romania.

5.2.1 Legislative gaps in payments constraining the Digital Single Market

There remains a great deal of fragmentation in the European payments market. The EU has recently sought to improve the situation by introducing the Payment Services Directive (PSD) and the establishment of the Single Euro Payments Area (SEPA).

Despite the ongoing introduction of these measures, there remain some barriers to achieving a single payments system across Europe. Firstly, SEPA is an initiative for which there is no requirement for institutions to participate. Even if banks and institutions have signed up to SEPA, they may have legacy or localised products that are not SEPA compliant. Secondly, many companies may be reluctant to withdraw niche or localised products as customers appreciate them or they are highly profitable. Nevertheless, companies are aware of the cost savings involved in greater standardisation. Even if all products were SEPA compliant, there still remain issues surrounding national taxation and social security systems. Many national systems require that all taxes paid and benefits received by consumers and businesses are made from a local bank account. Implementation of the Commission's measures consequently differs between Member States as does national taxation/social security laws and business participation.

However, as discussed in Section 4.5.3 no significant legislative gaps have been identified in relation to electronic payments. The only potentially relevant issue where legislation could play some role is related to the lack of solutions incorporated into the PSD supporting the growth of 'access to the payment account'. The gaps are more on the information and implementation side and result from business practices widely differing between Member States. This in turn is a legacy of development paths of national banking and payment systems, and the differing popularity of various technological solutions.

5.2.2 Estimates of the Cost of Non-Europe in payments

The benefits of standardising cross-border payment systems are clear. Consumers will benefit due to the pass-through in cost savings that businesses receive from more efficient cross border payments. Consumers will also benefit directly when making their own cross border payments. Greater standardisation will also facilitate greater cross-border trade made possible by these lower payment relevant transaction costs. In a complete single market for payment systems, there should be no difference in fees between cross-border and national payments and no other financial barriers to conducting cross-border trade. Theoretically a consumer or business can set up a bank

account with a bank in a Member State other than in the one they reside, assuming that the other Member State is a member of the single payments area. Therefore, financial institutions would be competing with one another not only on a national basis, but also on a European wide basis. Economic theory suggests that this increase in the intensity of competition should also drive down prices for users of payment systems. It will also allow banks and other financial institutions to streamline their payment systems across the EU, meaning they have leaner and more efficient operations.

In 2013, the European Union commissioned PWC to look in to the benefits of SEPA if 100 per cent of all electronic payments denominated in euros are defined as SEPA-compliant in SEPA countries¹³⁸. Across all stakeholders (businesses, banks, public sector organisations, and clearing settlement mechanisms) SEPA was estimated to reduce annual costs by €21.9bn across the 16 EU countries that account for 97 per cent of all euro denominated transaction values. This occurred through price convergence and process efficiencies across these 16 Member States. Furthermore, around €227bn in credit lines and released liquidity could be unlocked through cash pooling and more efficient clearing. The majority of these benefits would accrue to businesses.

As discussed in Section 4.5.3 implementation of SEPA is on-going and the remaining gaps are largely non-legislative, and in part relate to information provision and EU-level support for co-ordination of certain technical solutions. It is difficult to assess what share of total gains from SEPA that cannot be realized without addressing these gaps. Based on expert assessment it is assumed that CoNE represents between 10 per cent and 30 per cent of total gains from SEPA. This is equivalent to the range of between €2.2 billion and €6.6 billion, and would mainly accrue to businesses.

Estimated direct CoNE – Payments

Costs of less efficient and limited competition in consumer and business payments estimated at between €2.2bn and €6.6bn per annum

5.3 Costs of Non-Europe in postal and parcel delivery services

Postal services are important to e-commerce, as although products may be purchased in the DSM, those having a physical form need to be shipped and delivered to a buyer. For consumer and businesses to participate in the DSM, both elements must function well, in particular in cross-border transactions. Currently, there is no EU wide postal service, responsibility lies with Member States. Normally it costs less to send a package within a Member State than to send a package from one Member State to another, irrespective of geographical distance. Furthermore, the cost of sending or receiving a package from one

¹³⁸ PWC (2014), *Economic Analysis of SEPA – Benefits and opportunities ready to be unlocked by stakeholders*. http://ec.europa.eu/internal_market/payments/docs/sepa/140116_study_en.pdf

Member State to another varies by Member State¹³⁹. So sending a package to France may be cheaper from the Czech Republic than from the UK. If there were a single market for postal services, prices would see some convergence across Europe – at least for products covered by the universal service obligation – making it cheaper for consumers and businesses (especially those based in small / remote locations) to send packages across borders.

Price differentials for the products being delivered would then be realised by economic actors, helping to drive the single market for many goods and services.

5.3.1 Legislative gaps preventing the DSM

As discussed in the previous section there is no strong evidence for existence of substantial legislative gaps the closure of which would clearly benefit the single market bringing overall net gains. Considerable information gaps appear to exist especially in relation to availability of various delivery services and associated delivery options – both for consumers and e-retailers. Also, the implementation of existing legislation is an issue. WIK Consult (2013) concluded that:

‘cross-border postal services are less competitive, more distorted, and less transparent than they should be because of ineffective implementation of the Postal Directive and EU competition rules. Failure of the EU to fully exploit the benefits of fair and open competition in cross-border markets is particularly ironic in light of the fact that anti-competitive behaviour and poor cross-border service were primary incentives for developing the Postal Directive’¹⁴⁰.

FTI Consulting (2011) concluded that the market for EU cross-border parcels can be divided into groups¹⁴¹. The first group consists of large retailers with large and predictable traffic profiles that enjoy the full benefits of a competitive market (such as economies of scale). The second group consists of individual consumer and small businesses that send low parcel volumes infrequently, or reside in peripheral countries and non-urban areas. These consumers face a less competitive market and pay higher prices as a result. This is because these consumers typically have or perceive that they have no alternatives. There may be a lack of knowledge of alternatives other than the national postal service or consumers may believe the alternatives provide a lower quality service. This lack of perfect information in the market results in the higher prices than would be possible in a more competitive single market.

¹³⁹ WIK Consult (2013), *Main Developments in the Postal Sector (2010–2013)*, study for DG Internal Market, http://ec.europa.eu/internal_market/post/doc/studies/20130821_wik_md2013-final-report_en.pdf

¹⁴⁰ WIK Consult (2013), *Main Developments in the Postal Sector (2010–2013)*, study for DG Internal Market, http://ec.europa.eu/internal_market/post/doc/studies/20130821_wik_md2013-final-report_en.pdf

¹⁴¹ FTI Consulting (2011), *Inter-community cross-border parcel delivery: A study for the European Commission*.

Another report for the European Commission found that the most important aspects of delivery for e-shoppers are:

- Low delivery prices;
- Delivery to the home address;
- Access to electronic delivery notifications and track and trace; and
- Convenient return options¹⁴².

Many consumers feel that the quality of service they receive when sending post across border is not the same as if they sent post within a Member State. Convenience (delivery times), reliability and flexibility (i.e. returns policy) can all be regarded as quality indicators by consumers and business. The lack of standards at EU level to facilitate improved cross-border e-commerce contributes to CoNE in this context.

5.3.2 Estimates of the Costs of Non-Europe in the Digital Single Market due to postal services

The estimates of direct CoNE related to information gaps and gaps in implementation of relevant legislation in postal and delivery services is based on an assessment of excess costs of cross-border parcel delivery.

FTI Consulting (2011) report for the European Commission estimated that in 2011 between 181 million and 453 million parcels was sent cross-border in the EU. The simple average of this range is 317 million¹⁴³. The average price for 2kg cross-border parcel was found to be around € 24 compared to the range of € 10-15 for equivalent within-country service costs. Whilst the domestic price is not the best benchmark because complete equalization of prices for domestic and cross-border services would be unlikely. This is because of typically larger distances involved in cross-border delivery and existence of additional administrative expenses for cross-border parcels, relative to domestic parcels, to handle termination procedures and other administrative requirements (FTI Consulting, 2011). The difference in unit costs per parcel was hence in the range of € 9-14. For packets the respective price differential was smaller in the range of € 1-3 per packet.

The data cited in Harrison 2013 suggest that packets have a share of around 18 per cent in value of total global packet and parcel market¹⁴⁴. Combining this with the FTI Consulting (2011) information that average prices for domestic delivery of 2kg packets is around 45 per cent of a price for corresponding parcel delivery it is reasonable to assume that the number of intra-EU cross-border packets is around 40 per cent of the

¹⁴² Copenhagen Economics (2013), E-commerce and delivery: A study of the state of play of EU parcel markets with particular emphasis on e-commerce.

¹⁴³ FTI Consulting (2011), Inter-community cross-border parcel delivery: A study for the European Commission.

¹⁴⁴ Harrison Mark (2013), A roadmap to facilitating e-Commerce, IPC presentation at POST - EXPO, Vienna, 2 October 2013;

<http://www.ipc.be/~media/Documents/PUBLIC/Markets/Roadmap%20for%20ecommerce%20-%20PostExpo%202013.pdf> Based on figure in slide 3 pertaining to 2010 data.

number of intra-EU cross-border parcels, i.e. between 73 and 182 million (central value 128 million).

Further, an assumption can be made that completion of the single market would result in a fall of cross-border prices equivalent to the central point of observed price differential, i.e. around €11.5 per parcel and €2 per packet. Applying this expected price falls to estimated volume of cross-border parcel and packet flows gives a CoNE estimate in the range of €2.23 – 5.57 billion with a mid-point value of €3.9 billion.

Estimated direct CoNE – Postal and parcel delivery services

Savings in the range of €2.23 – 5.57 billion on costs of cross-border parcel shipping are forgone by EU consumers and businesses

5.4 Summary of findings - Reducing the Cost of Non-Europe

It is estimated that the direct CoNE are in the range between € 35.9 billion to € 75.2 billion. As indicated in Table 2 , the mid-point of this range is around € 55.6 billion¹⁴⁵. These bulk of these costs are driven by the costs related to low adoption of cloud computing. The wide presence of IT systems and the reported scale of the benefits for users from cloud computing (cautiously assumed to be 15-30 per cent of IT costs in this study) explain the magnitude of the estimates that are broadly in line with existing literature and sources reviewed.

Table 2 Estimated direct Cost of Non Europe (€ billion per annum)

Estimated direct CoNE	€ billion per annum		
	Lower bound	Mid-point	Upper bound
Cloud computing	31.5	47.3	63
Payments	2.2	4.4	6.6
Postal and parcel delivery	2.23	3.9	5.57
Total CoNE	35.9	55.6	75.2

Importantly, these are estimates of direct costs - i.e. foregone reduction of prices, and the like. The estimates do not take into account broader macroeconomic implications stemming from changes in productivity, re-allocation of resources between sectors, and demand and supply responses. To estimate the likely magnitude of these broader effects of closing of the identified DSM gaps in the next Section the direct CoNE estimates are treated as inputs to the macroeconomic model of the EU economy.

¹⁴⁵ The mid-point is the simple arithmetic average of the lower and upper bound estimates.

6. The benefits from completion of the Digital Single Market in Europe

This section estimates the benefits that could be attained from the completion of the Digital Single Market.

6.1 Approach

In Section 5 estimates were made of the direct CoNE in the specific areas associated with the DSM. These CoNE estimates have been used as inputs to the macroeconomic model of the European economy to calculate the wider economic impacts from closing the identified gaps. An economic modelling approach enables to take into account interactions between economic sectors and chains of effects brought about by potential removing the direct CoNE. It is worth remembering that estimates of direct CoNE per se do not necessarily provide a good approximation of aggregate gains from closing the identified gaps. This is inter alia because costs borne by consumers may lead to extra profits accruing to businesses. Only by taking into account linkages between economic sectors can such effects be accounted for. The economic model used was the E3ME model maintained by Cambridge Econometrics. Its use and key characteristics are described in the Box below.

Introduction to E3ME

E3ME is a computer-based model of Europe's economies. The model was originally developed through the European Commission's research framework programmes in the 1990s and is now widely used in collaboration with a range of European institutions for policy assessment, for forecasting and for research purposes.

At European level the model is most often used to assess the economic and labour market impacts of new policy. In particular, it has been used to evaluate policies relating to the environment, energy/climate, labour markets and trade negotiations. Examples of recent studies that have made use of the model include:

- input to Impact Assessments of the proposed Energy Efficiency Directive, the Energy Taxation Directive and revisions to the ETS
- assessing green jobs and skills impacts of environmental policy
- assessing the economic effects of a shift to low-carbon vehicles
- forecasting labour market and skills supply and demand
- the EU's trade negotiations with Canada and the US
- impacts of R&D on economic growth

The economic structure of E3ME is based on the system of national accounts, as defined by ESA95 (European Commission, 1996). The model has a high level of sectoral detail, with 69 sectors defined in its structure. Short-term multiplier effects occur through the various interdependencies between different parts of the economy, including consumption, investment and trade. The model is post-Keynesian in approach meaning that, unlike many other economic models, it does not make assumptions about rational behaviour and expectations.

The model includes 33 sets of econometrically estimated equations, including the components of GDP (consumption, investment, international trade), the labour market, prices, energy

demand and materials demand. Each equation set is disaggregated by EU Member State and by sector. Outputs from the model include GDP, sectoral output, employment and unemployment, trade and investment.

The E3ME model is maintained and operated by Cambridge Econometrics. Further information is available at the model website, www.e3me.com

The mid-point estimates of direct CoNE from the previous section are used as input to the model as illustrated in Table 3.

Table 3 Summary of CoNE and input assumptions in E3ME

Sector	Direct CoNE per annum (mid-point estimate)	Description of benefit from removing the cost	Assumed input in model
Cloud computing	€47.3 billion	Saving in ICT expenditure through use of cloud computing	A decrease in output prices reflecting the efficiency gains from greater cloud computing uptake
Payments	€4.4 billion	Recurring annual direct benefit from lower transaction costs and improved efficiency for all stakeholders	A decrease in output prices reflecting lower costs of payments.
Postal and parcel delivery	€3.9 billion	Increased competition in postal services and cross border sales	A decrease in the costs of trade.

To reflect economic realities, the effects from the cost savings are not assumed to kick-in immediately. Instead, cost savings are assumed to gradually accumulate starting in 2015 until they are fully realised in 2020. Moreover, the cost savings due to the removal of barriers to DSM in the different areas are split between economic sectors and EU countries in a way that reflects their real importance. Hence, in the case of cloud computing the splitting was based on the weights derived from input-output tables in order to allocate greater cost savings to those sectors which purchase more products from the computer programming and information service industry. The estimates for payments, and postal and parcel delivery were treated in a similar fashion but with the weighting, and hence cost savings, focused on their respective sectors.

In order to account for the cost savings effect an increase in investment was estimated from the IDC (2012) study¹⁴⁶. This figure was scaled to the size of direct savings as reported in Table 3, deflated, weighted and split using the method described above and allocated to the computer programming and information service industry as additional investment.

¹⁴⁶ IDC (2012): Quantitative Estimates of the Demand for Cloud Computing in Europe and the Likely Barriers to Up-take - SMART 2011/0045, Report for DG Information Society of the European Commission.

6.2 Estimated benefits of completing the Digital Single Market at EU level

The estimates derived from the model are presented as changes from the baseline projections for the EU economy as of 2020. The effects are shown in terms of GDP, its main components: consumption, investment and imports and exports as well as employment and consumer price inflation. Given the approach taken in this study, i.e. bottom-up approach building on the identification of specific gaps, the estimates should be best seen as lower bounds. It is plausible that there exist other gaps that for various reasons could not be identified or quantified in this study that nevertheless may hamper the completion of DSM. Also, these results are intended to be indicative. There is inevitably a substantial margin of error in the estimation process as the model is based on a set of assumptions drawn from a range of plausible assumptions.

Table 4 presents the results. Overall EU GDP would increase by around 0.4 per cent in 2020 or €60 billion in 2014 prices. This is mainly driven by a combination of the efficiency gains (modelled as lower prices) and the additional investment. There are multiplier effects within Europe but also benefits for countries outside the EU in terms of higher foreign trade including EU imports. The impact on consumption is very similar to the overall EU GDP impact (close to 0.4%), while investments lead to a substantially stronger boost in the range of 0.9 per cent. EU imports increase by around 0.3 per cent with exports seeing only a marginal change.

Employment gains are in the range of 0.1 per cent which is equivalent to over 223,000 jobs created by 2020 due to the removal of identified gaps hindering the DSM. Lower employment growth compared to the boost in GDP results from the features of the model where labour market rigidities are taken into account with 'stickiness' of wages. Hence, a relative fall of prices is not matched by an equally strong downward adjustment of wages. This leads to growth of real wages (i.e. wages adjusted for the price level) boosting household incomes and subdued employment gains.

Table 4 Estimated EU-level effects of closing the DSM gaps - impact by 2020

Variable	Baseline value in 2020	2020 value in simulated scenario of closed DSM gaps (€bn)	% difference between the analysed scenario and the baseline – overall effect of closing DSM gaps (€bn)
GDP expenditure measure at market prices, €2014bn	15,241	15,301	0.4%
Consumption, €2014bn	8,345	8,376	0.4%
Investment, €2014bn	3,385	3,415	0.9%
Exports, €2014bn	2,827	2,834	0.3%
Imports, €2014bn	2,837	2,846	0.3%
Employment, millions	229.7	230	0.1%
CPI, 2005=1.0	1.1	1.1	

Source: Simulations carried in the E3ME model.

It is interesting to compare these results with those found in other literature (Annex 1 provides more details). One widely cited estimate is the Copenhagen Economics (2010) study drawing from scenarios developed by MINUC (2009)¹⁴⁷. These project completion of DSM to lead to GDP gains to the tune of 4 per cent realized by 2020. London Economics (2013) argues that half of that figure (i.e. GDP gain of 2 per cent realized by the year 2020) is a more realistic estimate¹⁴⁸. The figures reported above are somewhat lower. This can be explained by the following factors:

- This study uses bottom-up approach and the identified expected gains are only related to the gaps that have been identified and where quantification of direct costs was possible. Certain areas are not covered. In contrast, previous studies used top-down approach with bold assumptions driving final results that have never been disaggregated into specific components to understand which elements of DSM can be associated with what gains.
- Another case where certain areas are not covered in this study is when the legislative processes is currently on-going or the continuing process of implementation of adopted laws makes it impossible to assess whether any gaps will remain in place. In reality some of these areas may be later found to still require legislative action if gaps become visible after the laws are fully implemented.
- The previous studies based their projection on the differences in the speed of broadband adoption between EU countries during 2004-2006. Since then, there has been some convergence in broadband penetration across the EU.

6.3 Estimated benefits of completing the DSM – Member States and sector level

The sectoral pattern of results reflects the strength of the supply chain links between computing and the wider economy. Communications and computing sees the strongest boost with output higher by around 1 per cent. Relatively strong benefits also accrue to sectors that use computing services and hence experience lower unit costs in the simulated scenario, such as ‘miscellaneous’ (i.e. consumer) services. Estimated output effects are presented in Table 5.

¹⁴⁷ MICUS (2009), The Impact of Broadband on Growth and Productivity. http://breitbandinitiative.de/wp/wp-content/uploads/2009/04/2008_micus-studie-broadbandeu_long.pdf. Copenhagen Economics (2010), The Economic Impact of the a European Single Digital Market, http://www.epc.eu/dsm/2/Study_by_Copenhagen.pdf

¹⁴⁸ London Economics (2013), Better Governance of the Single Market, European Added Value Assessment EAVA 2/2013. http://www.europarl.europa.eu/RegData/etudes/etudes/join/2013/494463/IPOL-JOIN_ET%282013%29494463_EN.pdf

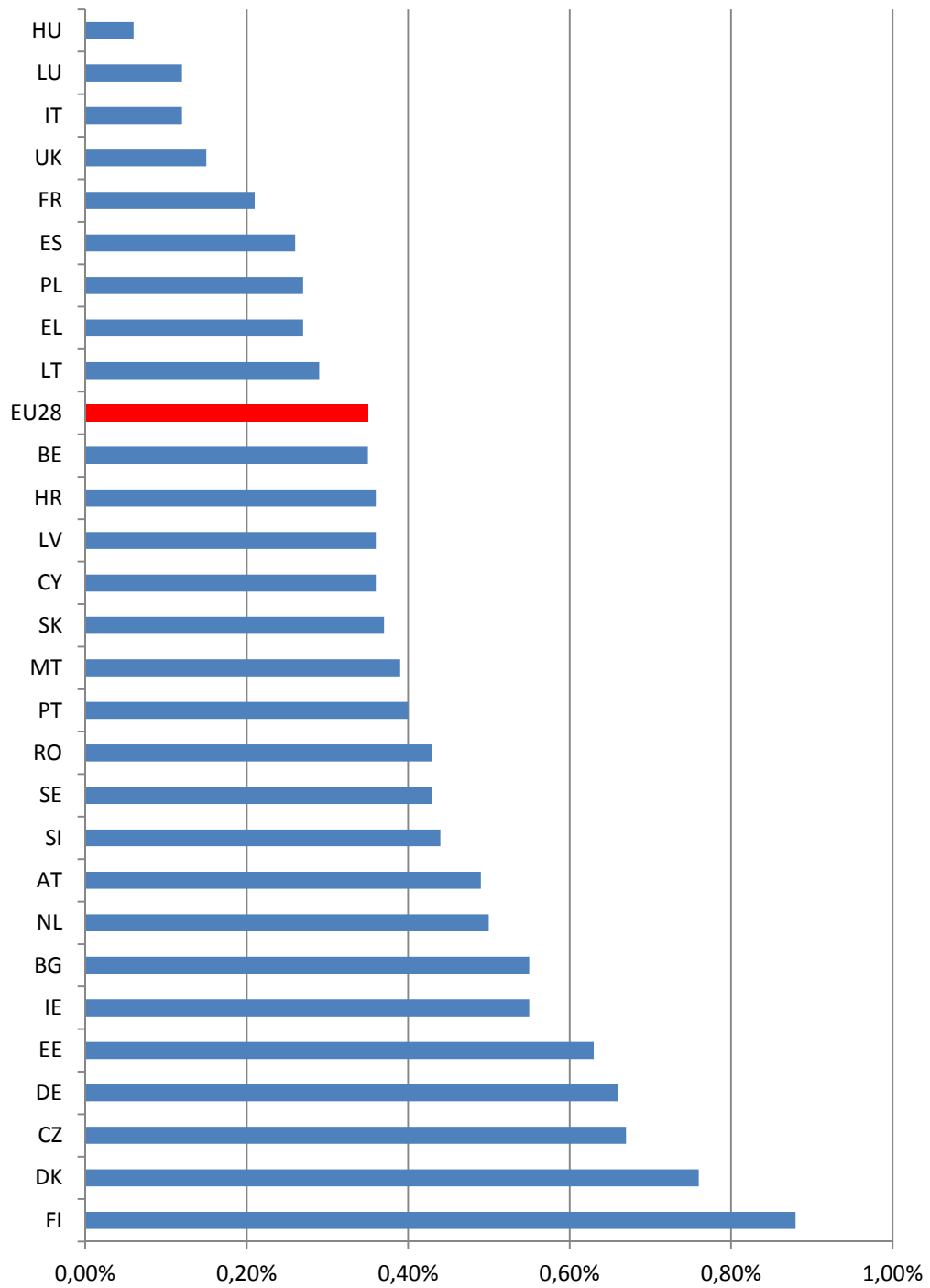
Table 5 EU-level sectoral output effects of closing the DSM gaps - impact by 2020 (€2014 bn)

Sector	Baseline value in 2020 (€bn)	2020 value in simulated scenario of closed DSM gaps (€ bn)	% difference between the analysed scenario and the baseline – overall effect of closing DSM gaps
Agriculture	523	523	0.1%
Mining and utilities	1,099	1,101	0.2%
Manufacturing	7,001	7,038	0.5%
Construction	1,607	1,619	0.8%
Distribution and retail	2,749	2,758	0.4%
Transport and warehousing	1,740	1,744	0.2%
Hotels and catering	713	715	0.3%
Communications and computing	1,957	1,976	1.0%
Banking and business sectors	1,803	1,809	0.3%
Real estate and other business services	4,618	4,638	0.4%
Public administration	4,304	4,309	0.1%
Miscellaneous	784	789	0.6%
Total	28,897	29,021	0.4%

Source: Simulations carried in the E3ME model.

From a regional perspective there is no distinctive pattern. Larger increases in output are projected in countries with larger computing industry sectors such as Finland, Denmark and Germany. However, this difference is not large enough to discern a divergence within the EU as the impacts on GDP range from just above 0 per cent to below 0.9 per cent in all countries (see Figure 2).

**Figure 2 Member State level GDP effects of closing the DSM gaps - impact by 2020
(% change relative to baseline)**



Source: ICF Analysis

7. Conclusions

This section summarises the main results concerning the closure of identified gaps affecting the functioning of the DSM.

7.1 Approach

This report first provides a review of up-to-date information on existing e-commerce related legislation and – to a certain extent – also its implementation. This review led to the identification of gaps hampering the functioning of the DSM. The direct CoNE were estimated for those gaps that lead to significant costs and where the estimation process was feasible. These direct costs were in turn treated as inputs to the macroeconomic model of the EU economy to estimate the broader gains from completion of the DSM. These were estimated at the EU, sectoral and Member State level.

7.2 Gaps in the Digital Single Market

The review of EU legislation in areas relevant for the functioning of DSM and e-commerce in particular has led to identification of the following main legislative and / or implementation / informational gaps where associated CoNE were believed to be potentially significant and could be estimated:

- In the area of cloud computing the main issues relate to lack of liability of cloud computing service providers and the inconsistency of transnational laws and regulations.
- In the area of payments legislation no major legislative gaps were identified. The only potentially relevant identified gap was the lack of legislative solutions incorporated into the PSD supporting the growth of access to the payment account for third-party service providers. However, from the perspective of the functioning of the DSM the most important gaps are the heterogeneity of commercial practices between Member States and the ensuing excessive costs of making cross-border payments.
- In the area of postal and parcel delivery, again individual legislative gaps were difficult to pinpoint. However, considerable information gaps exist especially in relation to the availability of various delivery services and associated delivery options – both for consumers and e-retailers. It remains to be seen how much can be achieved by voluntary self-regulation of the sector, the adoption of good practice rules and similar actions.

There are other gaps but estimates of CoNE have not been made for three reasons:

- They are expected to lead to costs that are of an order of magnitude lower than those linked to the gaps identified above (e.g. the application of commercial guarantees to digital products, differences in standard contract terms and their presentation in Member States)

- The costs have already been estimated in other CoNE reports (e.g. conclusion of contracts through distance means by persons lacking full legal capacity); and
- The estimation of costs has not been attempted because of the particularly complex interactions with various aspects of the DSM (e.g. e-Identification and e-Authentication and consumer protection in the case of digital products).

7.3 The direct Cost of Non-Europe

The study followed the bottom-up approach where the quantification of effects was made only on the basis of those gaps that have been explicitly identified and for which a quantification of direct costs was feasible. This contrasts with an approach typically adopted in other analyses trying to quantify the effects of completing the DSM that rely on top-down approaches where some general assumptions drive overall results.

The estimated direct CoNE associated with identified gaps ranged between € 36 billion to € 75 billion per annum. The central value was around € 56 billion per annum. These predominantly comprise costs related to lower rates of adoption of cloud computing than would otherwise occur. The economic importance of IT systems and the reported scale of the benefits for users of cloud computing (cautiously assumed at 15-30 per cent of IT costs in this study) provide the basis for the high estimated costs.

Table 6 Estimated direct Cost of Non Europe (€ billion per annum)

Estimated direct CoNE	€ billion per annum		
	Lower bound	Mid-point	Upper bound
Cloud computing	31.5	47.3	63
Payments	2.2	4.4	6.6
Postal and parcel delivery	2.23	3.9	5.57
Total CoNE	35.9	55.6	75.2

Source:

ICF

analysis

These estimates of direct CoNE are mainly reflected in foregone reductions of prices.

7.4 Gains from completion of the DSM – EU and Member State level

Potential removing of the gaps would lead a number of effects going beyond those related to direct CoNE estimates above. Interactions between economic sectors would trigger chains of effects such as changes in productivity, the re-allocation of resources between sectors and demand and supply responses, etc. Also, direct CoNE for certain economic actors may lead to gains for other market players (e.g. higher prices paid by consumers may lead to higher profits of the enterprise sector). Hence, estimating the potential gains from closing the DSM gaps should go beyond just looking at direct CoNE figures.

The approach taken in this paper is to take the direct CoNE figures (mid-point estimates) and to treat them as inputs to the macroeconomic model of the European economy. This enables calculating scale of likely effects related to the completion of the DSM, both at the EU level and in Member States.

Overall EU GDP would increase by around 0.4 per cent in 2020 or €60 billion in 2014 prices. This is mainly driven by a combination of the efficiency gains (modelled as lower prices) and additional investment. There are multiplier effects within Europe but also benefits for countries outside EU in terms of higher foreign trade including EU imports. Employment gains are in the range of 0.1 per cent which is equivalent to over 223,000 jobs created by 2020 due to the removal of identified gaps hindering the DSM. Average real wages also increase slightly, boosting household incomes. Table 6 below provides a summary.

This is driven by a combination of the efficiency gains (modelled as lower prices) and additional investment. There are multiplier effects within the EU but also benefits for countries outside EU in terms of higher foreign trade including EU imports. Employment gains are in the range of 0.1 per cent which is equivalent to over 223,000 jobs created by 2020 due to the removal of identified gaps hindering the DSM. Average real wages also increase slightly, boosting household incomes.

Table 7 EU-level effects of closing the DSM gaps – impact by 2020

Variable	% difference relative to baseline – overall effect
GDP expenditure measure at market prices	0.39%
Consumption	0.37%
Investment	0.90%
Exports	0.26%
Imports	0.31%
Employment	0.10%

Source: simulations carried in the E3ME model.

There is no large variation in the magnitude of modelled effects between Member States, with GDP rising from just above 0 per cent to below 0.9 per cent in all countries. Larger increases in output are projected in countries with relatively larger computing industry sectors such as Finland, Denmark and Germany.

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ANNEX 1 Other approaches to quantifying the wider benefits of a complete Single Market

There exist numerous studies assessing the size of the digital economy or internet economy in the overall economy. A recent review of such studies can be found e.g. in Indecon report on the situation in Ireland¹⁴⁹. These are not of key interest from the perspective of the current study, hence are not discussed in more detail.

Of more interest here are studies trying to quantify effects of adoption of element so digital economy. An example is the MICUS (2009) study for the European Commission¹⁵⁰. The report provides an analysis of the impact of broadband on productivity. It looks at some microeconomic evidence on productivity gains from broadband access and then constructs macroeconomic scenarios by multiplying the observed microeconomic impacts. Identified potential sector-specific productivity gains are then transposed into employment and value added effects. Broadband-related activities are found to contribute 0.7% of the growth of the European GDP in the base year (i.e. 2006). Building on these results three scenarios are developed based on historically observed speed of adoption of on-line services in various EU countries (advanced ones, laggards and the European average).

As regards specifically e-commerce the recent OECD report provides a good overview of benefits accruing to businesses, government and individuals as well as broader impacts on the economy as a whole¹⁵¹.

For businesses e-commerce has a profound impact and can be a driving force for structural changes. Electronic data exchange (EDI), especially since these were implemented on internet, and easier and cheaper access to broadband internet services have been instrumental enabling technologies. The key contributions are through reduction of operational costs (e.g. it takes less time to find partners, products, technologies, and agree a deal), widening the scope of markets (e.g. it is easier to present the offer to geographically far-away markets), and lowering entry barriers (e.g. in some markets entry is easily possibly without establishing a physical presence, i.e. in the on-line only mode). The latter factor may strengthen competition. Given the changes of the business model and need of adopting new technologies, e-commerce also changes the labour demand. For instance, sales representatives who used to visit potential clients in person may need to develop communication skills in social media, e-mail, etc. 0 provides a graphical illustration of mechanisms and forces at play.

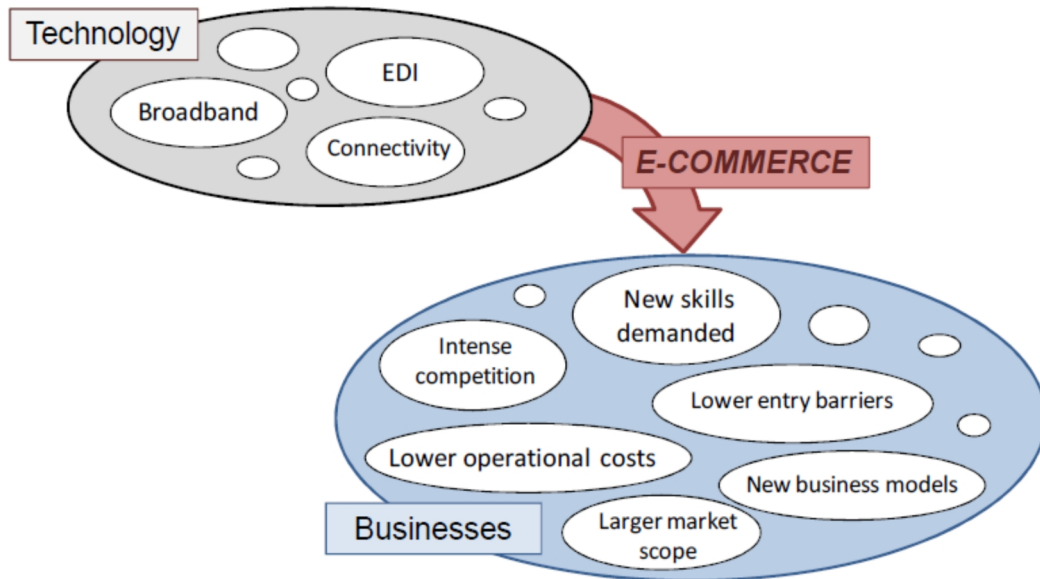
¹⁴⁹ Indecon (2013), Assessment of the Macro-Economic Impact of Internet/Digital on the Irish Economy. Report for the Department of Communications, Energy and Natural Resources.

¹⁵⁰ MICUS (2009), The Impact of Broadband on Growth and Productivity. http://breitbandinitiative.de/wp/wp-content/uploads/2009/04/2008_micus-studie-broadbandeu_long.pdf

¹⁵¹ OECD (2013), "Electronic and Mobile Commerce", OECD Digital Economy Papers, No. 228, OECD Publishing. <http://dx.doi.org/10.1787/5k437p2gxw6g-en>

Business survey and analyses suggest that typically businesses relying on e-commerce tend to be more successful compared with their peers with limited e-commerce usage¹⁵². European companies surveyed in 2009 ranked the reduction of transaction costs as the most favourable effect of electronic sales. The second most important reported benefit was increasing sales potential due to access to new markets. Among small firms, increasing access to new markets was listed as the most important benefit¹⁵³.

Main channels of e-commerce impact on business



Source: extracted from OECD (2013), "Electronic and Mobile Commerce", OECD Digital Economy Papers, No. 228, OECD Publishing. <http://dx.doi.org/10.1787/5k437p2gxw6g-en>

For consumers key benefits brought by e-commerce are related to easier access to products, broader choice menu, lower costs of gathering information about products, ease of price comparisons (especially due to price comparison websites), and lower prices¹⁵⁴. The figure below provides a snapshot of consumer welfare gains.

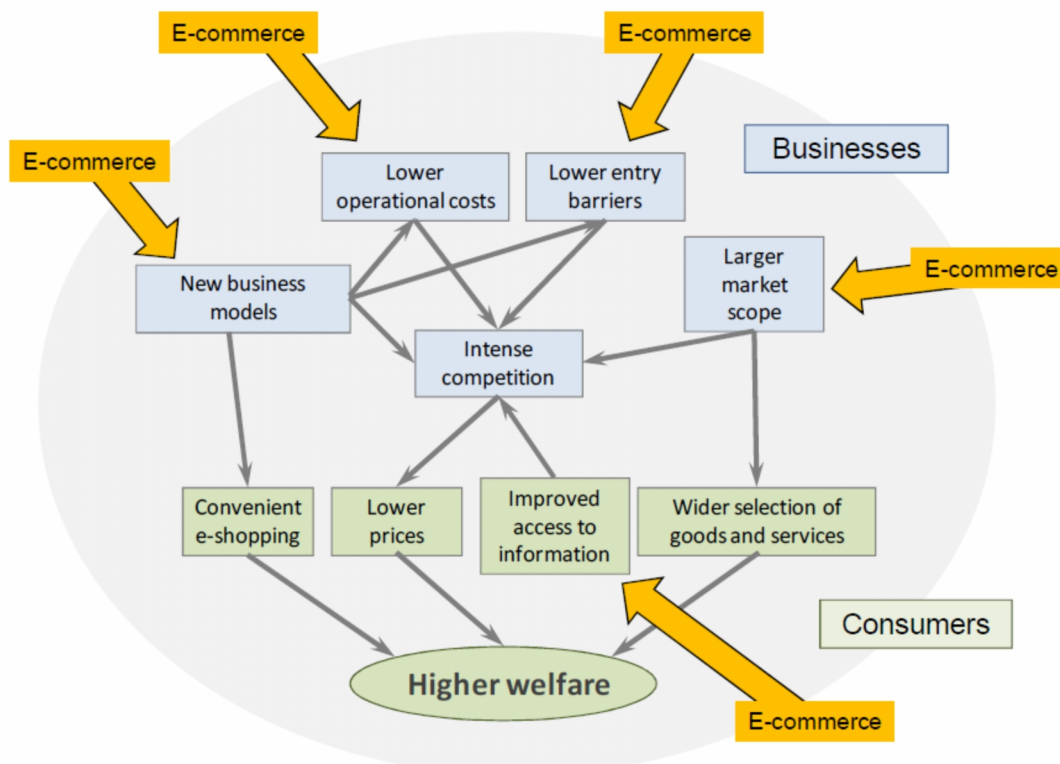
¹⁵² OECD (2013), "Electronic and Mobile Commerce", OECD Digital Economy Papers, No. 228, OECD Publishing. <http://dx.doi.org/10.1787/5k437p2gxw6g-en>; McKinsey & Co(2012), Winning where it matters. A focused approach to capturing growth. 2012 Customer and Channel Management Survey.

¹⁵³ Eurostat (2011), Information Society statistics website, database on ICT diffusion and use among businesses. Available at: http://epp.eurostat.ec.europa.eu/portal/page/portal/information_society/data/comprehensive_databases

¹⁵⁴ Civic Consulting (2011), Consumer market study on the functioning of e-commerce and Internet marketing and selling techniques in the retail of goods. Report for DG SANCO http://ec.europa.eu/consumers/consumer_research/market_studies/docs/study_ecommerce_goods_en.pdf

However, an important remark is that quantification of consumer welfare gains from e-commerce or more broadly – Internet access as such, is believed to be feasible to only a very limited extent¹⁵⁵. A selection of papers trying to quantify different aspects of these benefits and from different angles (but not directly in relation to e-commerce specifically) is reviewed in The Economist article from March 2013¹⁵⁶.

Impact of e-commerce on consumer welfare



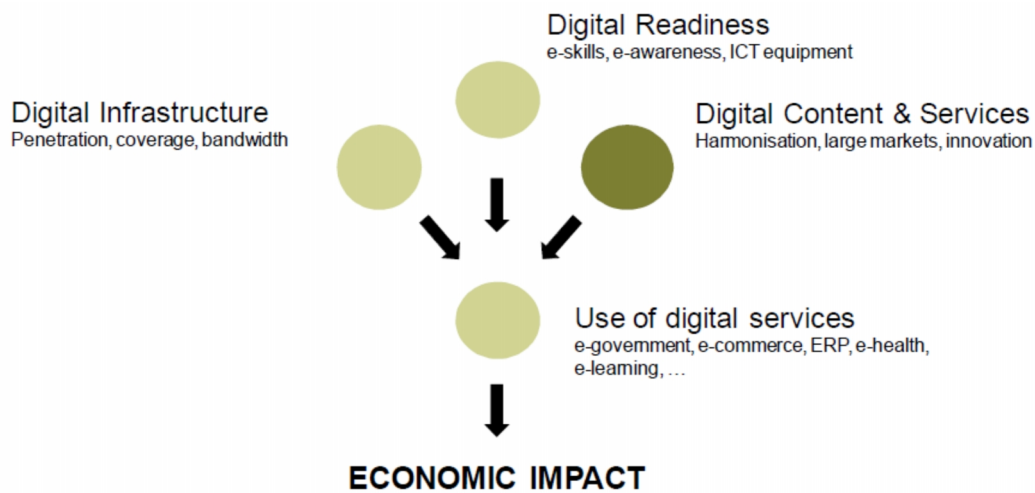
Source: extracted from OECD (2013), "Electronic and Mobile Commerce", OECD Digital Economy Papers, No. 228, OECD Publishing. <http://dx.doi.org/10.1787/5k437p2gxw6g-en>

Here, we provide a brief snapshot of approaches to estimate gains from completion of single digital market. These approaches typically build from the assessment of gains from digital economy per se. The underlying logic is that fragmentation of the European market leads to lower investments in digital infrastructure, less competition and higher prices of certain services (e.g. broadband access), lower take-up of digital technologies, higher market entry costs, etc. All these factors (or some combinations thereof) are likely to be associated with certain costs that can (in some cases) be expressed in terms of GDP growth, employment, consumer losses, etc. The figure below illustrates this logic.

¹⁵⁵ OECD (2013), "Electronic and Mobile Commerce", OECD Digital Economy Papers, No. 228, OECD Publishing. <http://dx.doi.org/10.1787/5k437p2gxw6g-en>

¹⁵⁶ Net benefits. How to quantify the gains that the internet has brought to consumers. The Economist, Mar 9th 2013.

Economic impact of digital economy – determining factors



Source: extracted from Copenhagen Economics (2010), *The Economic Impact of the a European Single Digital Market*, http://www.epc.eu/dsm/2/Study_by_Copenhagen.pdf

The MICUS (2009) study discussed in the section below developed the three scenarios of future broadband adoption in Europe. The much cited Copenhagen Economics (2010) study considers the difference between the two trends of broadband adoption scenarios¹⁵⁷:

- “Base case”: The speed of adoption of online services continues at the speed during the period 2004-2006.
- “Best case”: The speed of adoption of online services increases to that of advanced knowledge societies (Belgium, Denmark, Finland, Luxembourg, Netherlands and Sweden). The adoption rate in these countries was on average 4.1 percent during 2004-2006. The advanced knowledge societies are also better at taking advantage of online services. Therefore, the best case scenario has both a higher adoption rate and a greater effect on GDP.

These scenarios are simulated over a ten year horizon and the difference between cumulative GDP growth at the end of the period (i.e. by 2020) is taken to represent an impact of the Digital Single Market (DSM). This difference is in the order of 4 per cent of GDP, i.e. by 2020 a completion of the DSM is believed to lead to 4 per cent higher GDP level than would be possible without additional efforts (i.e. continuation of trends assumed in the MICUS 2009 study). The specific effects of DSM, including consumer welfare gains are discussed qualitatively, but not quantified.

¹⁵⁷ Copenhagen Economics (2010), *The Economic Impact of the a European Single Digital Market*, http://www.epc.eu/dsm/2/Study_by_Copenhagen.pdf

The 2013 London Economics study based its estimate of the potential gains from DSM on the results of Copenhagen Economics (2010) study¹⁵⁸. The approach is best described by the citation: *'to be cautious and avoid over-estimating any gains that can be actually achieved, it is assumed that the Digital Market initiatives set out in the 2012 will generate half of the gains predicted by the 2010 Copenhagen Economics. Thus, one can reasonably assume that the European Parliament's own initiative will contribute to raise EU-wide GDP by about 2% over the long run'*.

Another approach that is worth mentioning here relies on (still very limited) existing data on cross-border e-commerce. One paper builds a gravity model utilising data on cross-border on-line purchases in the EU collected from the 2011 consumer survey¹⁵⁹. The results confirm a strong reduction (of about one third) in geographical distance-related trade costs when EU consumers move from off-line to on-line trade¹⁶⁰. However, trade costs associated with crossing language barriers turn out to be more important in on-line trade as opposed to off-line trade (roughly double in size). The net effect of these positive and negative changes in trade costs results in an online border effect that remains similar in magnitude compared to offline trade in the EU. This study also tries to examine the role that e-commerce enabling infrastructure in facilitating cross-border e-commerce. Data issues potentially limit the robustness of the results that nevertheless suggest that sophisticated online payments systems such as PayPal have a positive impact on cross-border trade while the role of parcel delivery costs is less clear. Overall conclusion is that *'it is hard to predict at this stage whether regulators could boost online cross-border trade through improvements in legal and financial systems, and parcel delivery infrastructure'*.

In summary, it is visible that while the rationale of ascribing potential economic gains to the single digital market is strong the quantification of these gains faces significant challenges. This is in line with the OECD assessment of very limited feasibility of quantifying consumer welfare gains from the Internet economy¹⁶¹.

¹⁵⁸ London Economics (2013), Better Governance of the Single Market, European Added Value Assessment EAVA 2/2013.

http://www.europarl.europa.eu/RegData/etudes/etudes/join/2013/494463/IPOL-JOIN_ET%282013%29494463_EN.pdf

¹⁵⁹ Gomez, E.; Martens, B. and Turlea, G. (2013) "The drivers and impediments for cross-border e-commerce in the EU", JRC/IPTS Digital Economy working paper 2013/02. See also B. Martens (2013), What does Economic Research tell us about Cross-border e-Commerce in the EU Digital Single Market? A Summary of Recent Research JRC/IPTS Digital Economy working paper 2013/05.

¹⁶⁰ Similar results were obtained on the basis on large dataset of cross-border (global) deals on eBay: Lendle, Andreas, Marcelo Olarreaga, Simon Schropp and Pierre-Louis Vezina (2012), "There goes gravity: how eBay reduces trade costs", CEPR discussion paper 9094, London

¹⁶¹ OECD (2013), "Electronic and Mobile Commerce", OECD Digital Economy Papers, No. 228, OECD Publishing. <http://dx.doi.org/10.1787/5k437p2gwxw6g-en>

ANNEX 2 E3ME Model description – version 5.6

A.1 Introduction to E3ME

E3ME is a computer-based model of Europe's economic and energy systems and the environment. It was originally developed through the European Commission's research framework programmes and is now widely used in Europe for policy assessment, for forecasting and for research purposes.

E3ME's structure

The structure of E3ME is based on the system of national accounts, as defined by ESA95 (European Commission, 1996), with further linkages to energy demand and environmental emissions. The labour market is also covered in detail. In total there are 33 sets of econometrically estimated equations, also including the components of GDP (consumption, investment, international trade), prices, energy demand and materials demand. Each equation set is disaggregated by country and by sector.

E3ME's historical database covers the period 1970-2010 and the model projects forward annually to 2050. The main data sources are Eurostat, DG Ecfm's AMECO database and the IEA, supplemented by the OECD's STAN database and other sources where appropriate.

The main dimensions of the model

The other main dimensions of the model are:

- 33 countries (EU28 Member States, Norway, Switzerland and 3 EU candidates)
- 69 economic sectors, including disaggregation of the energy sectors
- 22 different users of 12 different fuel types
- 14 types of air-borne emission (where data are available) including the six greenhouse gases monitored under the Kyoto protocol
- 13 types of household, including income quintiles and socio-economic groups such as the unemployed, inactive and retired, plus an urban/rural split

Typical outputs from the model include GDP and output, trade, investment, inflation, employment and unemployment, energy demand and CO2 emissions. Each of these is available at national and EU level, and most are also defined by economic sector.

The econometric specification of E3ME gives the model a strong empirical grounding and means it is not reliant on the assumptions common to Computable General Equilibrium (CGE) models, such as perfect competition or rational expectations. E3ME uses a system of error correction, allowing short-term dynamic (or transition) outcomes, moving towards a long-term trend.

E3ME's key strengths

In summary the key strengths of E3ME lie in three different areas:

- the close integration of the economy, energy systems and the environment, with two-way linkages between each component

- the detailed sectoral disaggregation in the model's classifications, allowing for the analysis of similarly detailed scenarios
- the econometric specification of the model, making it suitable for short and medium-term assessment, as well as longer-term trends
- A longer description of E3ME is provided in this annex. For further details, the reader is referred to the model manual available online from www.e3me.com.

A.2 E3ME as an E3 model

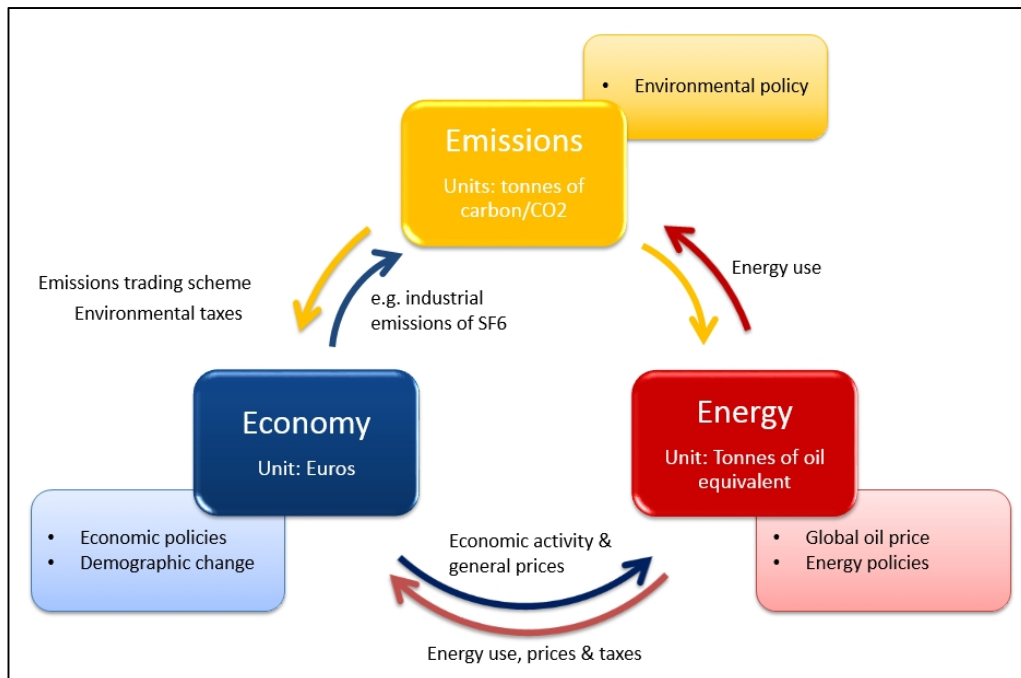
The E3ME model comprises:

- the accounting balances for commodities from input-output tables and the economic national accounts, for energy carriers from energy balances, emissions and material consumption
- a large historical database covering the period from 1970 annually
- 33 sets of time-series econometric equations, covering the components of GDP, prices, the labour market, energy demand and material consumption

The E3 interactions

Figure A.1 shows how the three components (modules) of the model - energy, environment and economy - fit together. Each component is shown in its own box with its own units of account and sources of data. The linkages between the components of the model are shown explicitly by the arrows that indicate which values are transmitted between components.

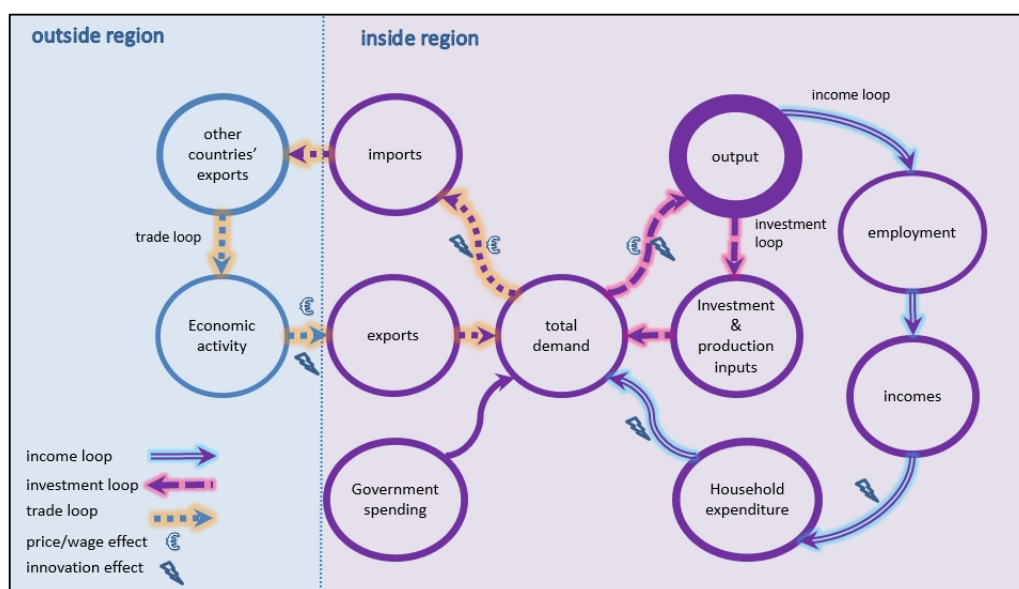
Figure A.1: E3ME as an E3 model



A.3 E3ME as an economic input-output model

Figure A.2 shows how the economic module is solved as an integrated EU regional model. Most of the economic variables shown in the chart are at a 69-industry level. The whole system is solved simultaneously for all industries and all countries, although single-country solutions are also possible.

Figure A.2: Determination of output in E3ME



The chart shows three loops or circuits of economic interdependence, which are described below. In addition there is a dependence loop between sectors through their input-output linkages; this is not shown in the macro-level linkages in the figure but is similar to a Type I multiplier. The second loop, through incomes and household expenditure, provides something similar to Type II multipliers. The other loops are through investment and through international trade.

Determination of output

Output, measured in gross terms, is determined through the macroeconomic identity as the sum of intermediate and final demands. Intermediate demand is the demand from other economic sectors and is determined by input-output relationships (including domestic and import supplies). Final demand consists of household and government demand, investment and exports. GDP and GVA are derived from these.

International trade

E3ME includes export and import equations for the trade of commodities within and outside of Europe. The demand for a country's exports of a commodity is related to three factors:

- domestic demand for the commodity in all the other countries, weighted by their economic distance (determined by OECD bilateral trade data)
- the quality of national produce, determined by the technical progress indicators
- relative prices, including the effects of exchange rate changes

Econometric equations are estimated to determine the magnitude of these effects.

Investment

Forecast changes in output are important determinants of investment in the model. Other determinants of investment are the relative price of capital, real interest rates and position in the economic cycle.

Investment and output

Sectoral investment is transformed by a converter matrix to go from the sector making the investment, to the one that receives the payment (e.g. construction or engineering). The resulting vector is a component of output (see above), providing the feedback loop between output and investment.

Endogenous technical change

Gross fixed investment, enhanced by R&D expenditure in constant prices, is accumulated to provide a measure of the technological capital stock. Investment is central to the determination of long-term growth and the E3ME model embodies endogenous technical change and a theory of endogenous growth which underlies the long-term behaviour of the trade and employment equations.

Incomes and household expenditure

As described below, increases in economic output generate employment which, when multiplied by average wage rates, provides incomes to households. These are some of the largest payments to the personal sector, but not the only ones. There are also payments of interest and dividends, transfers from government in the form of state pensions, unemployment benefits and other social security benefits.

Employment and wages

E3ME includes equation sets for headcount employment, average wages, working hours and labour market participation. Increased economic output is expected to lead to higher levels of employment, greater wage demands and more incentive to work. Higher wage rates, however, are a deterrent to job creation.

Unemployment is calculated as the difference between employment and labour supply. It is an important determinant in wage bargaining.

Household expenditure

Totals of consumer spending are derived from consumption functions estimated from time-series data. These equations relate consumption to real personal disposable income, a measure of wealth for the personal sector, inflation and interest rates.

Consumption and output

Household consumption by product is converted to demand by sector using a transition matrix. This also subtracts consumption taxes, such as VAT. The resulting vector is used in the calculation of sectoral output. Sectors that typically benefit from higher rates of consumption include retail, hotels and catering and other personal services.

Prices

Each real economic variable has an associated price variable that goes with it. The relationships between prices and quantities are often complex and are estimated using behavioural relationships. It is also important to note the interaction between prices and wages. While inflation pushes up wage rates, higher unit wage costs for sectors lead to price increases which, when aggregated, lead to higher rates of inflation. There is thus a strong feedback loop in price effects.

A.4 Parameter estimation

The econometric model has a complete specification of the long-term solution in the form of an estimated equation that has long-term restrictions imposed on its parameters. Economic theory, for example the recent theories of endogenous growth, informs the specification of the long-term equations and hence properties of the model; dynamic equations that embody these long-term properties are estimated by econometric methods to allow the model to provide forecasts. The method utilises developments in time-series econometrics, in which dynamic relationships are specified in terms of error correction models (ECM) that allow dynamic convergence to a long-term outcome. The specific functional form of the equations is based on the econometric techniques of cointegration and error-correction, particularly as promoted by Engle and Granger (1987) and Hendry et al (1984).

Cost of Non-Europe Reports identify the possibilities for economic or other gains and/or the realisation of a 'public good' through common action at EU level in specific policy areas and sectors. This Cost of Non-Europe Report seeks to analyse the costs for citizens, businesses and relevant stake-holders of remaining gaps and barriers in the European Single Market, building on and updating the 1988 Cecchini Report, which quantified its potential benefits.

This particular study - the third in a series - analyses the gaps in the European digital single market legislation which prevent attaining the benefits of a fully functioning e-commerce single market. It provides a qualitative appreciation of the existing legislation, identifying gaps where further legislative action at European level could be beneficial and quantifying the direct costs of failure to legislate and the potential broader economic impact of closing the gaps.

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