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XXV CICLO

# ANTITRUST AND REGULATION IN THE EUROPEAN UNION: SELECTED TOPICS


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Della *Law and Economics*, me ne sono invaghito alla magistrale, per "colpa" dei relatori di questa tesi, e ho perseverato con un dottorato. In questo, mi sento fortunato. Non solo per i maestri che ho avuto. Ma anche per essermi potuto infilare in questo percorso formativo tra gli ultimi studenti, prima che il percorso stesso chiudesse. Spero che il lettore di questa tesi possa riconoscere, di riflesso, un po' di valore al percorso che ho potuto seguire. E spero anche che possa apprezzare come il tutto, la *law and economics*, sia diverso dalla somma delle parti, un po' di diritto ed un po' di economia.

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# INTRODUZIONE

Questa tesi si dipana lungo due dimensioni, una geografica, l'Unione europea, e l'altra metodologica, la *law and economics*. La dimensione geografica si ritrova nel fatto che i temi trattati afferiscano tutti all'analisi economica del diritto europeo, sia pubblico che privato. Questa scelta è stata la conseguenza inevitabile dell'aver potuto spendere tanto tempo in un osservatorio privilegiato sul mondo peculiare dei *policymakers* comunitari, il *Centre for European Policy Studies* di Bruxelles.

L'altro filo conduttore è, ovviamente, la *law and economics*. Il metodo della *law and economics* mi ha permesso di spaziare su temi diversi, mantenendo una bussola costante, che è consistita nella domanda "quali sono gli effetti nella realtà di questa norma o istituzione?". Fissati i due fili conduttori, è il momento di dipanare gli argomenti specifici che compongono questa tesi.

Il primo articolo discute la *governance* del processo legislativo dell'Unione europea, ed in particolare uno strumento orizzontale, l'*Impact Assessment*. L'*Impact Assessment*, corrispondente nell'ordinamento italiano all'Analisi di Impatto della Regolamentazione consiste in una metodologia che, partendo dall'analisi dello *status quo* e dagli obiettivi che il decisore politico si prefissa, permette di elaborare quali saranno gli effetti di una proposta normativa in termini, anche se imprecisi, di costi e benefici. Il *paper* presenta un'analisi dell'efficacia con cui la Commissione europea usa l'*Impact Assessment* per guidare il *policy cycle* europeo. La risposta, in breve, è che la Commissione usa in maniera abbastanza efficace l'*Impact Assessment*, anche se sussistono ancora alcuni punti critici su cui intervenire. Vale la pena precisare come non si tratti di un articolo di scienze politiche, ma di diritto ed economia, in particolare di *meta law and economics*, in quanto non viene analizzata una norma specifica, ma un'istituzione – nel senso Northiano del termine – che regola la produzione di altre norme. E in questi termini si muove una vasta letteratura, specialmente nord americana, che si dedica all'analisi giuseconomica della *cost-benefit analysis* e del *Regulatory Impact Assessment.*

Il secondo articolo si occupa di Google, più precisamente del caso antitrust contro Google iniziato dalla Commissione europea. Nel dettaglio, l'articolo sviluppa in primo luogo una critica alla teoria dei mercati bilaterali, i *two-sided markets*, ed in secondo luogo tenta di rispondere alla domanda se Google operi in un *two-sided market*. La risposta, ancora una volta in breve, è "probabilmente no". L'articolo prosegue proponendo una teorizzazione alternativa di Google come "supermercato" dei dati personali raccolti dagli utenti, dati personali che vengono poi monetizzati tramite la pubblicità mirata associata ai risultati di ricerca. Trasformare Google da un *two-sided market* ad una catena verticale del valore comporta risultati interessanti dal punto di vista dell'analisi antitrust, in particolare per quanto riguarda una reale comprensione dei confini del mercato rilevante nell'ecosistema di internet.

Il terzo articolo analizza una classe di imprese, gli intermediari di dati personali, le quali popolano in maniera trasversale numerosi settori dell'economia, dai motori di ricerca, al *cloud computing*, dai *social network* ai supermercati. La domanda di ricerca consiste nell'esplorare se la regolazione economica tratti in maniera uniforme questa classe di imprese, e la risposta, in breve, è stata "no." Nell'argomentare questa analisi, vengono presentanti tre casi studio che dimostrano come la concorrenza e lo sviluppo di certi modelli di *business* dipenderanno dalle scelte normative che il legislatore europeo vorrà fare in maniera di *privacy*.

# IMPACT ASSESSMENT AND THE POLICY CYCLE IN THE EU

Giacomo Luchetta*

**Abstract**

With the Communication on Smart Regulation issued in October 2010, the European Commission tried to foster a better management of the whole policy cycle. According to that Communication, amending policy proposals must be preceded by an *ex post* assessment of the current situation, allowing "closing the policy cycle". This paper tries to answer the question whether the EU Impact Assessments System is fit to steer and close the policy cycle, and what is the relation between *ex ante* IA and *ex post* evaluations "on the ground" so far. This is done via a macro and micro analysis, based on scorecard approach and three case studies, comparing the EU IA system performance with a theoretical benchmark derived from the EU policy document and process. The paper concludes that the EU Impact Assessment system, as it is currently designed and implemented, it is not yet fit to steer and close the policy cycle. To achieve this goal, all the analytical and empirical layers of the policy cycle should be fully dealt with since the *ex ante* phase.

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I am very grateful to Alessandra Arcuri and Andrea Renda for their dedicated and thorough guidance. Thanks also to Rosamaria Bitetti, Danilo Samà, Lorna Schrefler, and Felice Simonelli for their kind comments and support throughout the research. Finally, my gratitude goes to the two anonymous reviewers who fostered the quality of this article.

# 1 Introduction

With the Communication on Smart Regulation issued in October 2010 (Commission 2010), the European Commission tried to foster *ex post* evaluation of EU legislation, aiming at "closing the policy cycle", that is connecting *ex ante* and *ex post* evaluation in a meaningful continuum. This Communication is the latest step of the Smart Regulation strategy, which has been promoted as an overarching goal by the European Commission since 2002. Constantly throughout the years, and through a series of different approaches and communications, Impact Assessment (IA) has been picked as the main tool of this strategy, aimed at achieving better lawmaking and simplification.

Smart Regulation, or, as it was formerly known until 2010, Better Regulation, is an EU overarching regulatory policy which was born in the U.S., and then exported, via the UK, to the EU from 1986 onwards (Renda 2006). From a theoretical perspective, Better Regulation is a strategy aimed at managing the lifecycle of law, from lawmaking to enforcement. Such a strategy may pursue four main ambitions (Radaelli and Meuwese 2009):

1) to increase the role of evidence in lawmaking;
2) to improve consultation of affected stakeholders;
3) to increase competitiveness by drafting and implementing better, *i.e.* more efficient, regulation;
4) to increase the legitimacy of the regulatory agency.

As already recalled, the Commission Communication from October 2010 focuses on closing the policy cycle. As it can be inferred from the EU lawmaking process and the Communication itself, the "smartly-regulated" policy cycle is composed of the following elements:

1) stock-taking exercise, that is *ex post* evaluation of the existing legislative framework;
2) public consultation;
3) *ex ante* IA;
4) draft of the proposal;
5) legislative procedure;

6) transposition and implementation;[1]
7) enforcement.[2]

Better Regulation strategies are implemented via several tools, such as IA, simplification programmes, methodologies for choosing alternative regulatory methods, public consultation, risk-based enforcement, *ex post* evaluation, and organisational adjustments (Mandelkern 2001; OECD 2002). Among these tools, the European Commission picked the IA as the most important, also as a meta-tool to promote other instruments.

The scope of the EU IA system is very broad when compared to that of *e.g.* the US or EU Member States (ECA 2010). According to the European Commission Guidelines, the following acts must undergo IA:

> *all legislative proposals of the Commission's Legislative and Work Programme (CLWP)* […] *all non-CLWP legislative proposals which have clearly identifiable economic, social and environmental impacts* […] *and* […] *non-legislative initiatives* […] *which define future policies*. (Commission 2009)

IAs are carried out by the lead Directorate General (DG), which is responsible for the act. Therein, the policy unit competent for the relevant policy area drafts the IA. Several DGs, especially those producing a large number of IAs, created a unit responsible for the supervision of all IAs, and issued more detailed internal guidelines (TEP 2007). The Secretariat-General of the European Commission (SG) also provides support for IA drafting. From the start, an Impact Assessment Steering Group must be set up, where all the DGs with a stake in the proposal have a seat, including the SG. The steering group is the forum where other Commission services can monitor and influence the IA.

Once an IA is finalised, it is submitted to the Impact Assessment Board (IAB), an oversight body established in 2007 pertaining to the SG (Commission 2011). The IAB may recommend minor or major changes. If major changes are recommended, the draft IA must be re-

[1] Transposition refers to the incorporation of an EU norm in the national/local *acquis*. Implementation refers to the application of the EU norm, or the national/local norm transposing it, by national/local public administrations.

[2] Enforcement refers to prosecution of violations of EU norms, or national/local transposition norms, both *vis-à-vis* the Member States and third parties.

submitted to the IAB. If the draft IA turns out to be still unsatisfactory, the IAB issues a second negative opinion. In any case, the College of Commissioners can decide to adopt the IA and the related act, although "in principle a positive opinion from the IAB is needed before a proposal can be put forward for Commission decision" (ECA 2010).

EU IAs must appraise three kinds of impacts: economic, social, and environmental. This obligation is mostly fulfilled, although the economic impacts are analysed more extensively (ECA 2010). In the whole set of IAs carried out from 2003 to 2009, economic impacts were assessed in 90% of the cases; social impacts in 59% of the cases; and environmental impacts in 85% of the cases.[3] Besides, EU IAs must be carried out according to the principle of proportionate analysis: the depth and scope of the analysis must be functional to the significance of the impacts, the political relevance of the act, and the stage of political development (Commission 2010).

According to the European Commission IA Guidelines (Commission 2009: 45-49), policy options should be evaluated based on three criteria: effectiveness, efficiency, and coherence. No hierarchy is provided among these three criteria. Quantitative analysis, if provided, should underpin the choice of the policy option, but there is no obligation to select the preferred option based on quantified costs and benefits. On paper, quantification and monetisation is required, except in the cases in which it is not feasible (Commission 2009: 48). In practice, the IA Guidelines and the IAB allow European Commission officers to choose between a qualitative and quantitative analysis. The reason why this leeway is offered is that IAs concern primary legislation rather than technical secondary legislation, and, as a consequence, full monetisation and quantification is less often practicable (Radaelli *et al.* 2010: 93-95).

This paper tries to answer the question whether the EU IA system is fit to steer and close the policy cycle. First, Section 2 frames the discussion about IA as a tool to govern political agency relationships and describes the agency relationships in the EU lawmaking process. Section 3 describes a theoretical construction of the EU policy cycle,

[3] Source: CEPS EU IA Database. *Infra* note 4.

and then the EU IA system is empirically compared against this theoretical benchmark in Section 4 by:

1) analysing data from a database of EU IAs created by the Centre of European Policy Studies, where all EU IAs from 2003 to 2009 are scored according to 202 items;[4]
2) assessing three case studies in which IAs have been followed by an *ex post* evaluation, to understand to what extent *ex ante* and *ex post* analyses are and can be consistent, and how the design of IAs could be made consistent with the other phases of the policy cycle.

Finally, Section 5 briefly concludes.

## 2 Impact Assessment in a Principal-Agent Perspective

### *2.1 A theoretical framework*

In this paper IA is constructed as an institution[5] which aims at shaping behaviours of political actors, by modifying their incentives, and allowing governance of relations among these actors. Therefore, IA is a meta-norm imposing constraints on political actors. In this construction, based on approaches which can be found in both the law and economics and political science literature,[6] analysing principal-agent relationships and transaction costs stemming from these relationships is crucial to understand the role of IA. IA can be seen as a mechanism to govern agency relationships among political actors, structuring political relationships, and reducing the cost of negotiation and monitoring.

IA, or a similar institution, is usually mandated when the power to draft primary legislation (as in the EU) or to enact secondary legislation (as in the US) is delegated to a third party. In this

[4] The database was created by the Centre for European Policy Studies, under the supervision of Dr. Andrea Renda. The database is currently unpublished, on file with the author. Data are partly reported in Renda 2011. The methodology is similar to that described in Cecot *et al.* 2008.

[5] The term "institution" refers to North's (1990) definition of institutions as "humanly devised constraints".

[6] I refer *i.a.* to Adler and Posner 1999, 2000; Radaelli *et al.* 2010; Renda 2011. This approach builds also upon the "transaction-cost politics", cf. the seminal contribution of Williamson (1999), Dixit (1996), and Epstein and O'Halloran (1999).

relationship, the principal is the legislator, whilst the European Commission or the Federal Agencies are the drafting agents. The choice to delegate law drafting can be analysed within the framework of transaction cost analysis, as a "make-or-buy" decision (Epstein and O'Halloran 1999). Rational political actors may decide to delegate if, from their perspective, the benefits of delegation are higher than costs. In this context, costs mainly consist of:

1) monitoring costs;
2) the risk that the delegated body pursues different goals;
3) the impossibility to reward constituencies or stakeholders via lawmaking.[7]

Benefits mainly consist of:

1) the possibility to use specialised assets, *i.e.* the knowledge of the drafting body;
2) political relief, that is the opportunity to eventually switch responsibility, accountability, and therefore any political stigma.

In this view, IA is an institution aimed at reducing transaction costs and at governing the dialogue between the principal(s), that is the elected legislator, and the drafting agent, that is the non-elected agency. It reduces information asymmetry between the principal and the agent by disclosing information (Adler and Posner 1999). IA also reduces the costs of monitoring by making goals and expected outcomes of regulation more evident. Eventually, it enhances the coherence of the political system**,** ensuring both that delegated norms pursue the goals they are intended to pursue, and that single norms are coherent with the goals set by the main political actors.

Majone also adopts a principal-agent approach, but reaches a somehow different conclusion. According to him, the principal-agent model is not fit to explain the choice to delegate the drafting of primary legislation to the European Commission as the agent. He considers delegation in this context as a tool to enhance the credibility of Member States' commitment towards EU integration, rather than to reduce transaction costs. The European Commission would then be the fiduciary rather than the agent of the Member

[7] This is not a cost for the society, but only for the delegating body.

States (Majone 2001a, b). This can be held true when it comes to the power of agenda-setting, which is exclusive "property" of the Commission. Nevertheless, when it comes to lawmaking, Member States retain, through the Council of the European Union, the last say on the legislative text which the Commission has been delegated to draft; therefore the principal-agent relationship can be considered as best suited to describe this delegation mechanism.

Among the possible approaches, throughout this paper, IA is considered a coherence-enhancing tool, rather than as pro-efficiency (McGarity 1998; Renda 2011). Hereinafter, coherence has a double meaning: internal coherence, that is coherence between each policy and its objective; and external coherence, that is coherence between each policy and the wider political context. In these meanings, coherence is a wider concept than efficiency. If cost-minimisation, *i.e.* efficiency, is one of the objectives of the political system, IA can enhance its achievement. Nevertheless, a political system may use IA to coherently pursue any chosen objective.

Mainstream analysis considers IA as a tool for efficient policy-making, which increases the net welfare of the community (Arrow *et al.* 1996). Nevertheless, this is more theory than reality, especially in the EU. The European Commission acknowledges that IAs "increased transparency and accountability, and promoted evidence-based policy making", and "improved the quality of legislation", with no reference to efficiency or the maximisation of any welfare criterion (Commission 2010:2-3). Indeed, Jabko (2004) argues that the EU regulatory state is not based on the pursuit of any efficiency criterion, but rather on practical coherence. In any case, even if efficiency were the ultimate goal of an IA system, any effect would hardly be measurable (Wölfl *et al.* 2009). As Coglianese (2002) points out, any empirical analysis would have to compare net benefits of the decision taken within an IA system with an impossible counterfactual, that would be a decision taken without the help of economic analysis. Empirical research in this respect is very underdeveloped (Radaelli and De Francesco 2007; Hahn and Tetlock 2008).

In conclusion, the importance of IA does not reside in ensuring that regulation maximises net benefits, or any other measure of efficiency.

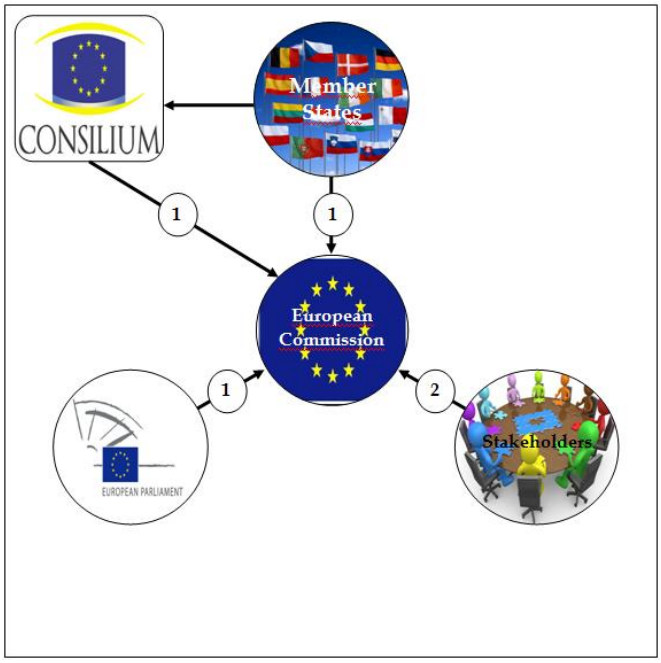
IA benefits stem from the governance of complex relationships among political actors and stakeholders, triggering political coherence. Although disagreement can arise on this construction of the IA system, this argument can be at least accepted *a fortiori*: even if the IA system failed to increase efficiency, it would nevertheless promote policy coherence.

### 2.2 *Agency relationships in the EU lawmaking process*

In the EU, IAs are carried out by the European Commission on both non-binding acts and binding proposals. The European Commission is the only institution enjoying the right of initiative in the EU system in all but marginal cases.

In the legislative process, the European Commission can be considered the kernel of a web of agency relationships, both external and internal (Radaelli and Meuwese 2010; Radaelli *et al.* 2010). Based on the structure of the EU institutional architecture, of the European Commission, and on the functioning of the lawmaking process, five agency relationships have been identified, and are described below. They are categorized as either internal or external. As we will see below, the European Commission uses the IA as a tool to govern these agency relationships, both the external and the internal ones.

**Figure 1 – The External Agency Relationships**




*Source: Author's Own Elaboration*

The two external agency relationships are:

1. **Agency relationship 1.** The European Commission is the agent of the Member States, which originally delegated some legislative powers to it. The Member States subsequently act as legislators, being part to the Council of the European Union. The European Commission is also the agent of the European Parliament in putting forward proposals.
2. **Agency relationship 2.** The European Commission is the agent of EU stakeholders. Although it faces no political accountability *strictu sensu*, since it is not an elected body, it is responsive to stakeholders' claims, both directly and through the mediation of national political bodies.

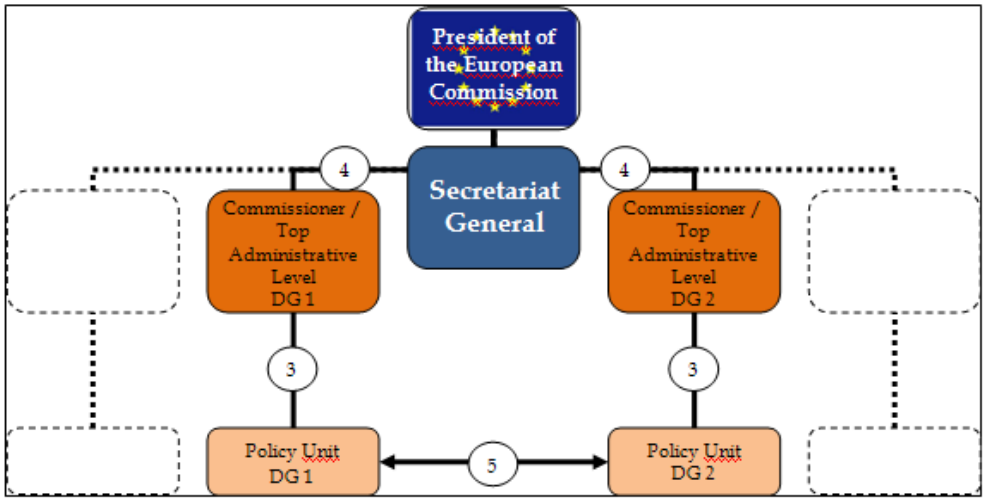
Legislative proposals are drafted by the competent policy units within each DG. They are subsequently endorsed by the DG at the top administrative and political level, *i.e.* by the Commissioner. Finally, legislative proposals are collectively approved by the College of Commissioners. In this context, two internal agency relationships arise:

3. **Agency relationship 3.** Policy officers are agents of the DG, *i.e.* of the apex of the hierarchy;
4. **Agency relationship 4.** The DGs are agents of the European Commission, whose apex is represented by the President of the Commission, assisted by the Secretariat-General.

Furthermore an agent-agent relationship is relevant in this framework:

5. **Agency relationship 5.** When competences of two or more DGs overlap, DGs use IAs to monitor and steer policy initiatives, by cooperating in the drafting and by participating in the Impact Assessment Steering Group.

**Figure 2 – The Internal Agency Relationships**




*Source: Author's Own Elaboration*

As highlighted below in the Introduction, the EU IA system is built around these agency relationships: i) the legislators use the IA to obtain information about the Commission proposals; ii) the stakeholders participate to the IA via the consultation; iii) each DG monitors the policy officers in charge of drafting the proposal and the IA; iv) the President of the European Commission monitors each DG via the Secretariat-General; and v) when competences are shared, DGs monitor each other through the Impact Assessment Steering Group. After having described the theoretical context and the working of the EU IA system, next sections will be devoted to define the EU policy cycle and empirically assess whether the IA system is fit to steer and close it, according to the *desiderata* of the European Commission.

## 3 The Relationship between Impact Assessment and the Policy Cycle at the EU Level

This paper aims at assessing whether the IA system is designed to steer and close the policy cycle. To answer this question, a construction of the EU "smartly-regulated" policy cycle is provided, and then the performance of the EU IA system is assessed at macro and micro level.

This construction of the policy cycle consists of two layers: the analytical and the empirical. The former answers the question "*what*

is the policy expected to deliver?" The latter answers the question "*how* is the policy expected to deliver", focusing on the mechanisms and information necessary to ensure and verify its delivery. These layers constitute the underpinning structure on which the factual steps of the policy cycle, as described in the introduction, take place.

The analytical layer consists of the logic underpinning the policy cycle, or, in other words, the "software" whose instructions indicate what a policy is supposed to achieve and how it is embedded in the wider political discourse. This layer of the EU policy cycle includes three analytical objects:

1) the objectives of the policy;
2) the relation between the policy and the overarching political goals;
3) the outcomes of the policy (or, in the *ex ante* phase, the expected impacts).

The empirical layer is the "hardware" on which the analytical layer can run. Although the latter is the backbone of the policy cycle, any policy would remain an empty box without the mechanisms to transform it into reality and to proceed with its verification. These mechanisms are:

4) the institutional setting for transposition, implementation and enforcement;
5) the provisions for monitoring and evaluation.

These mechanisms require the availability of information on the *status quo*, the application of the policy, and the outcomes delivered, and therefore are called "empirical". When information is not yet (fully) available, the policymaker defines how data will be made available and collected alongside of these mechanisms.

Availability and accuracy of data is important for the policy cycle for at least three reasons (Jacobs 2006: 31-32; TEP 2007: 68-80; European Commission 2010: 7). First, it is one of the main drivers of quality of *ex ante* and *ex post* assessment, and of the whole policy cycle management. Secondly, lack of data increases the risk of capture by the most informed party, *i.e.* usually the addressees of the norm. Thirdly, lack of data and of a design of data collection mechanisms

from the start of the policy cycle hinders its closing via *ex post* assessment.

In a well-designed policy cycle, the analytical and empirical layers inform each other. Monitoring and evaluation, although naturally part of the *ex post* assessment and of the empirical layer, needs to be considered since the *ex ante* assessment. "The choice of which data to collect and the data collection method are not isolated decisions in the regulatory process, because they influence the whole process" (Jacobs 2006). Information is retrieved and/or collected purposely to measure the outcomes and the achievement of the objectives, and at the same time definition and operationalisation of objectives is made keeping in mind, prospectively, which monitoring and evaluation tools and information are or can be available.

In the next section, each of the elements of the policy cycle will be analysed, providing the empirical assessment of how it has been treated so far in the EU IA system, both at micro and macro level.

# 4 EU Impact Assessment and the Policy Cycle: an Empirical Assessment

## *4.1 Methodology and case selection*

This section analyses the constituting elements of the analytical and empirical layers of the policy cycle and empirically assesses how EU IAs deal with them on two level: macro and micro.

The macro analysis looks at the EU IA system from an aggregate point of view. This analysis is based on data retrieved from the CEPS database.[8] This macro analysis, *i.e.* the analysis of the whole IA production via a scorecard approach, allows for a bird-eye view of the system. It can answer simple questions, that are Yes/No questions, on the whole set of IA production, and in this sense is a unique tool to analyse general trends in EU IAs without having to recur to any case-selection (Dunlop *et al.* 2010).

The micro analysis aims at providing more specific information on how certain aspects have been dealt with in three case studies,

[8] See *supra* note 4.

discussing the positive and negative effects of a proper or improper management of the elements of the policy cycle.[9] The choice of case studies for the micro analysis tried to cover different typologies of acts:

1) a decision implementing an expenditure programme: the 7th Framework Programme on R&D, hereinafter "Decision on FP7";[10]
2) a non-binding communication on biodiversity, hereinafter "Communication on biodiversity";[11]
3) a general regulation on the tariffs for mobile roaming services, hereinafter "First" or "Second Roaming Regulation".[12]

Case studies were selected among those acts which underwent both IA and *ex post* assessment, which are in limited numbers. Indeed, the IA system is relatively "young", as it was launched in 2003. One to two years are needed for approval by the legislators, and monitoring and evaluation can take place only some time after the act has been finalized. Therefore, the focus had to be on the earliest IAs, whose quality can be lower compared to more recent documents. Another limitation is that no IAs on directives can already be part of the sample, since implementation would take about two additional years. This affects the results of the empirical analysis, because it can be reasonably assumed that the management of the policy cycle is more complex for double-layered acts, such as directives.

This empirical analysis is not meant as an evaluation of the EU IA system. Indeed, the focus on closing the policy cycle is posterior to the most recent IA Guidelines. Nevertheless, such an analysis points out which policy cycle aspects are dealt properly in the IA system

[9] In this section, aspects of case studies have been reported only when relevant to support specific points of the analysis. In a longer version, on file with the author, the whole policy cycle of the case studies was analysed.

[10] Decision No 1982/2006/EC concerning the 7th Framework Programme for research, technological development and demonstration activities (2007-2013).

[11] Communication from the Commission: Halting the Loss of Biodiversity by 2010 and Beyond. Sustaining ecosystem services for human well-being. COM(2006)216.

[12] Regulation (EC) No 717/2007 on roaming on public mobile communications networks within the Community; Regulation (EC) No 544/2009 amending Regulation (EC) No 717/2007 on roaming and Directive 2002/21/EC on e-communications.

and which are not; and therefore it highlights where more attention and effort is needed. In this sense, it provides a tentative map of what would help to transform the IA system into a tool to manage and close the whole policy cycle.

### *4.2 Objectives*

Agreement on goals is a pre-requisite of any transaction among principals and agents (Milgrom and Roberts 1994). If goals are not clear, any institution aimed at managing principal-agent relationships, such as IA, cannot fulfil its role. (Meuwese 2008: 35). At the same time, Majone (1996: 294) notes that coherence among objectives and outcomes, what he calls "accountability by results", "cannot be enforced when the objectives are too vague or too broad". For these reasons, the clear definition of goals is essential for non-majoritarian institutions, such as the European Commission, to act legitimately (Schrefler 2010: 310).

In this construction of the policy cycle objectives are the key aspect of the analytical layer. To go on with the software metaphor, they are like the operating system of the policy cycle. Proper objectives meet the following requirements (Commission 2009):

1) are clear;
2) make clear how the outcomes of the norm contribute to the goals (outcome-objective relationship);
3) are embedded in the wider political context (objective-overall goals relationship);
4) are operationalised in a series of sub-targets which are measurable.

A proper definition of objectives also presupposes a hierarchy, what the European Commission (2009: 27) defines as "general", "specific", and "operational" objectives. General objectives are linked to Treaty-based goals, such as "integrating the Single Market for e-communications". Specific objectives refer to how the specific policy contributes to certain aspects of a Treaty-based goal, such as "reducing cross-border differences in roaming tariffs". Operational objectives are defined in terms of deliverables of the specific policies, such as "ensuring that roaming tariffs in each Member State are not 10% higher than the EU average".

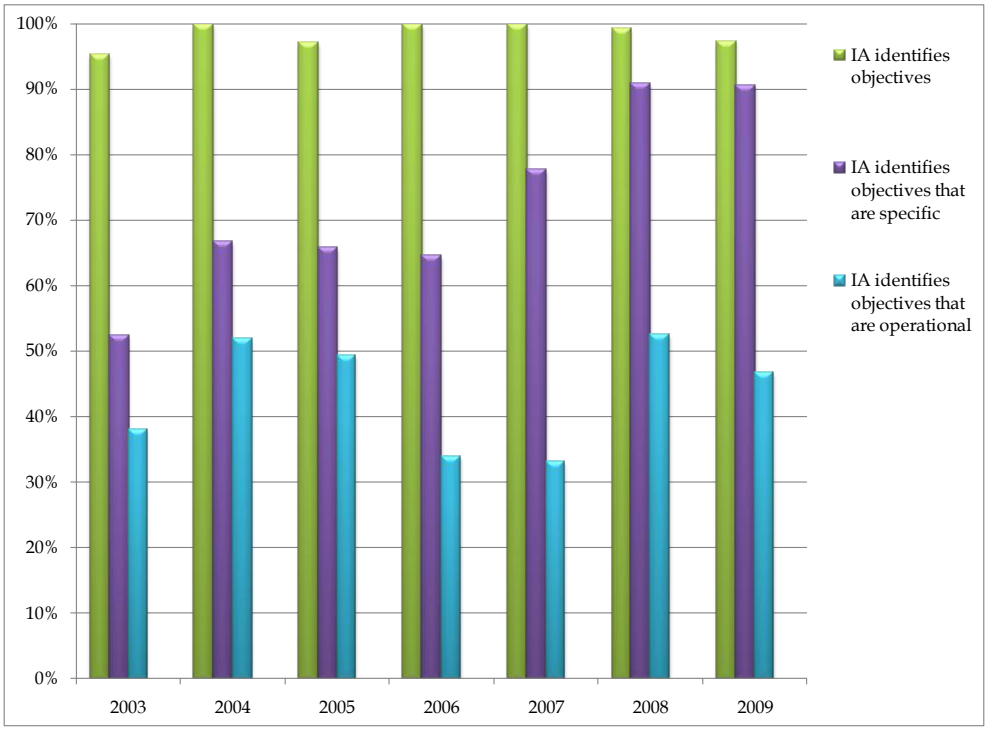
Policy objectives are not part of the *ex ante* assessment in real terms: they are described in the IA, but they are not "assessed" or "compared". They logically precede the IA and they are not the outcome of any economic analysis (Renda 2011: 226). They may be influenced by elements endogenous to the policy cycle, such as evidence stemming from an *ex post* evaluation, or by elements which are exogenous to it, such as, an overarching goal or stakeholders' pressure.

Once the objectives are fixed, the other elements follow, such as the expected outcomes, and the monitoring and evaluation scheme. IAs can be considered the appropriate lawmaking procedure to manage the policy cycle because, in principles, all its elements can be written down in it, as already pointed out *in nuce* by the Mandelkern Group[13] and reaffirmed by the Communication on Smart Regulation.

From the point of view of the macro-analysis, the EU IA system performs quite well in the proper definition of objectives. The definition of objectives is considered a key aspect by the European Commission (2009: 26-28) IA Guidelines and their importance is stressed in several respects. Relevance in the Guidelines corresponds to a good performance in the scorecard. As shown in Figure 3, the data extracted from the CEPS database shows that almost every IA defines some objectives, and the large bulk of IA defines specific objectives. Performance is poorer concerning operational objectives. This could be problematic because operational objectives are usually those that can be better measured; therefore, a lack of their definition in the IA can hinder any subsequent evaluation. Nevertheless, I shall remember that the database includes IAs on both binding and non-binding acts. For the latter, definition of operational objectives is often impossible or inappropriate. Limiting the analysis to binding acts, the CEPS database reports that the share of IAs defining operational objectives in the period 2003-2009 is 52.5%, almost 9% higher than in the whole sample, though still insufficient.

[13] In November 2000, Ministers of Public Administration established a high-level advisory group on better regulation, chaired by Dieudonné Mandelkern, and charged it with producing a report within a year. The Mandelkern Group was made up of representatives of the fifteen Member States. Officials from the Commissions Secretariat-General also attended.

**Figure 3 – Macro assessment: Objectives**




*Source: Author's Own Elaboration on CEPS Database*

Shifting to the level of micro-analysis, the case studies selected help shedding some more light. For instance, the IA on the Communication on Biodiversity provides an example of poor definition of objectives. The document fails to provide a clear structure and hierarchy of objectives, and this has been identified *ex post* as a major driver of its failure.[14] The objectives are defined in very general terms, such as: "to reinforce EU action to halt the loss of biodiversity"; "to accelerate towards the recovery of habitats and natural systems"; and "to optimise the EU contribution towards significantly reducing the rate of biodiversity loss".[15] General objectives are not translated into either specific or operational ones. This hinders the understanding of the relation between the general objectives and the actions included the EU Action Plan for biodiversity, and of the relation between expected outcomes and *ex ante* objectives. Since objectives are not defined properly, the management of every other phase of the policy cycle becomes very difficult.

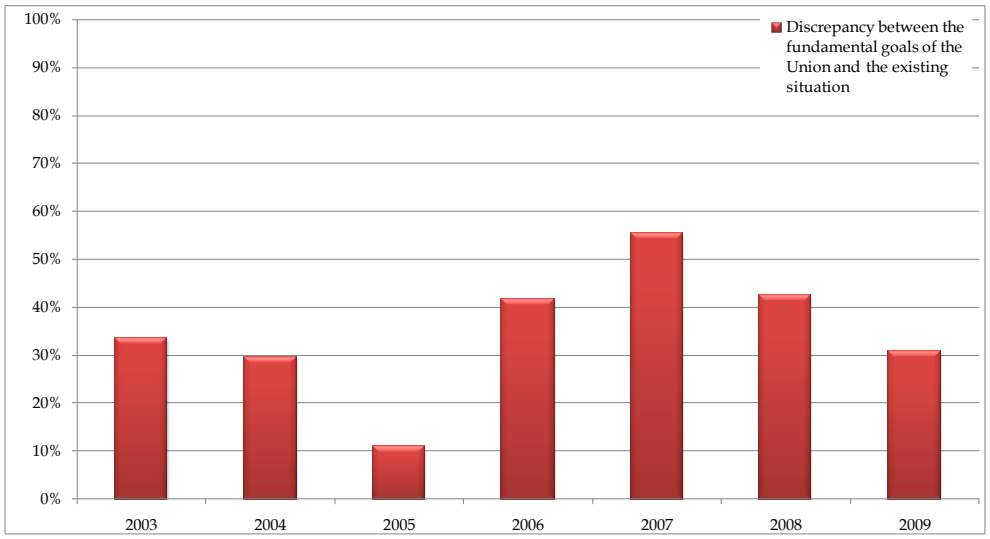
[14] External Study on the Communication on Biodiversity, at pp. 9-16.

[15] IA of the Communication on Biodiversity, SEC(2006)607/2, at p. 44.

### *4.3 The relation Objectives - Overarching Goals*

Since, as it is argued in Section 2, the main goal of the IA system is to promote coherence, the connection among objectives and overarching political goals becomes *naturaliter* important: "the extent to which individual legislative proposals contribute to *[long-term]* goals should become a key factor in future *ex ante* IA" (Renda 2011: 228). The macro-analysis reported in Figure 4 shows the percentage of IAs in which the proposal is linked to a fundamental goal of the EU. The share is quite small, showing that there is room to improve the use of IAs as a tool for external coherence.

**Figure 4 – Macro assessment: Objectives – Overarching Goals**




*Source: Author's Own Elaboration on CEPS Database*

### *4.4 Outcomes – Expected Impacts*

Outcomes are what a policy must deliver to achieve its objectives. In the *ex ante* phase, *i.e.* before they materialise, they are usually defined as expected impacts. As we will see below, their measurement is not without contention.

As in the principal-agent model upon which this construction is based outcomes/expected impacts are subordinated to objectives,[16] it is essential to measure as many impacts as possible among those related to the (operational) objectives. That way, the legislator has a clear picture not only of the policy objectives, but also of their potential achievement.

[16] Cf. Section 4.2 *supra*.

The consistency between the measurement of outcomes and the other elements of the analytical layer of the policy cycle is then more important than accuracy of measurement and full monetisation. The Communication on Smart Regulation states that quantification should be carried out when possible, with a feasibility constrain due to data availability (Commission 2010: 7). Accordingly, the quest for monetary values is important, but not crucial. Monetisation can be carried out when it is meaningful from a policy cycle perspective, without it being the ultimate goal of the EU IA system. Given the relevance of objectives, cost-effectiveness would be the natural candidate criterion to assess impacts in the *ex ante* phase (Ogus 2006: 290).

In addition to that, the relation between the specific policy and the overall political goals influences the choices about which outcomes/impacts should be measured. In particular, the *ex ante* assessment might not focus on outcomes, outputs, and means to achieve them that have already been set in previous stages of the political discourse, to avoid being redundant. Rather, IA may contribute to the management of the policy cycle by demonstrating whether and how the draft legislation supports the achievement of the objectives by resorting to which agreed-upon means, without duplication of analysis.

Attention and resources must not be diverted to measurement of non-verifiable outcomes/impacts. Non-verifiable statements bring no benefit to the drafting of the law or to the *ex post* evaluation. On the contrary, they stress the external agency relationship no. 1, *i.e.* that between the European Commission and the legislators, by increasing the costs of monitoring, up to the point that they cannot be monitored at all (Milgrom and Roberts 1994: 283-284; De Geest 2010). In this sense, non-verifiable statements increase the irresponsibility of the drafter, who does not fear any risk of *ex post* assessment of the outcomes, both because of the need to build challenging counterfactuals, such as a forecast about a marginal increase of GDP,[17] and because of the time hiatus between the

[17] In theory, increase of GDP can be measured. In practice, it is hardly ever possible to build any meaningful counterfactual in which the net impact of a single law on the growth of GDP can be verified *ex post*.

analysis and its effects, such as when effects are estimated over an *e.g.* 30-year period. Accordingly, economic analysis may play a major role when analytical statements are verifiable, otherwise political decisions taken by the principals, *i.e.* the legislators, could usefully step up.

It is true that long-term and barely-verifiable impacts play an important role in several policy domains, *e.g.* for long-term environmental policies. If these impacts are not taken into consideration, such long-term policies could be hindered. Nevertheless, if impact analysis is well connected to the overarching policy goals, the role of non-verifiable statements becomes relatively minor. *E.g.*, in EU policymaking, major long-term goals, also for environmental policies, are decided at the top political level, that is the European Council, based on political reasons and with limited or no reference to detailed economic analysis. Then, if outcome/impact analysis is to be consistent with these goals, it can usefully highlight costs and benefits of the various options to achieve them, rather than re-assess their validity.

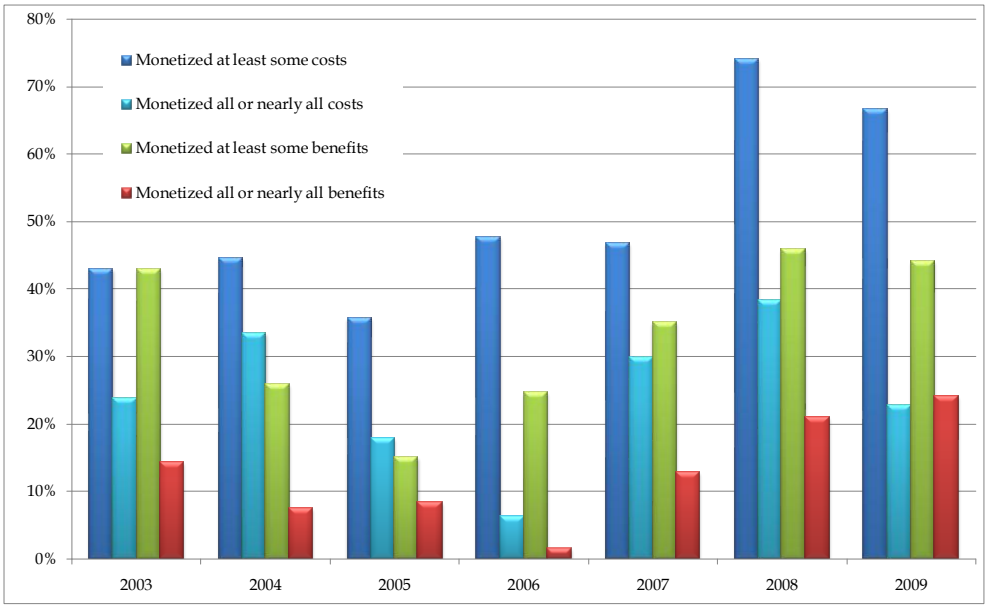
Finally, measurement is a costly activity; therefore it is imperative for the policymaker to reap benefits out of it (Milgrom and Roberts 1994: 290-293) in the form of better lawmaking. Therefore, analysis of outcomes/impacts should be carried out with the aim to understand how to draft better legislative texts, rather than as a purpose in itself.

In a perfect world, IAs would measure all expected impacts of an act. In the real world, this is not the case. The Commission enjoys discretion in deciding what impacts should undergo measurement. Therefore, the discretion should be consciously recognized, and any choice with respect to impact measurement is to be consistent with the overall management of the policy cycle.

From the macro point of view, concerning outcomes and expected impacts, the EU IA system has both positive and negative sides. On the positive side, European Commission IA Guidelines are quite lax when coming to the choice among qualitative and quantitative assessment criteria. Accordingly, the EU IA system is not steered

towards full monetisation (European Commission 2009: 45-48).[18] As reported in Figure 5, the analysis of the whole set of EU IAs confirms the approach of the guidelines: full monetisation of costs is carried out in 28% of the IAs, and full monetisation of benefits in 16%, with an upward trend in the recent years.

**Figure 5 – Macro assessment: Monetisation of outcomes**




*Source: Author's Own Elaboration on CEPS Database*

On the negative side, the temptation to use IA as a tool for the Commission to win the support of the legislators, or better as a trump card in the political arena, leads to redundant measurement of either impacts already clearly embedded in general policy goals, or of non-verifiable impacts. The necessity to use IAs as a tool to "rally support for *[Commission's]* proposal" was even stressed in the first action plan for Better Regulation (Commission 2002: 8) and is exemplified by the micro-analysis of the following case study.

The analysis of impacts in the IA on the Decision on FP7 combines qualitative and quantitative elements. Impacts of each action are first described in qualitative and rather general terms, such as FP7 will "increase competition and drive up the quality of research proposals" or "more research will be carried out in Europe, and that research will generally be of higher quality".[19] Then, via an economic

[18] For a critical assessment, cf. Renda 2011: 228.

[19] IA of the Decision on FP7, SEC(2005)430, at pp. 7-8.

model, quantitative impacts on GDP, employment, and competitiveness by 2030 are quantified.

From the point of view of the management of the policy cycle, the decision to focus attention and consequently spend resources on the quantification of long-term economic indirect impacts can be questioned in at least three respects:

1) modelling these impacts bring few benefits to the quality of lawmaking. Most of the features of the proposal, namely the specific design of the programme, which is crucial in order to produce the desired outcomes in an effective way, are not influenced by this analysis. Among the manipulable features of the proposal, only the amount of funds available is an independent variable considered in the model, whose impact can therefore be measured via this approach;
2) forecasts about impacts up to 2030 on GDP, employment, and competitiveness risk being non-verifiable statements. Indeed, these outcomes are barely taken into account in the ongoing monitoring and evaluation process, although it is focused on a large range of outcomes and impacts. The interim report on FP7 accordingly reads:

> [f]*urther questions arise about how to ensure that the undoubted achievements of science are translated into impacts – whether economic or social - that benefit society at large.* […] [I]*t is far too soon to attempt any comprehensive assessment of the outcomes of impact of research which is still in progress from the very first calls of FP7.*[20]

   It is highly doubtful that such an assessment will possibly be carried out at any time that is compatible with the timing of the policy cycle.
3) the EU had already stated in its Lisbon Strategy that promotion of growth and a knowledge-based economy via an increase in R&D public expenditure should be pursued; therefore an extended analysis of this aspect brings little, if any, added value to the political discourse.

[20] Interim Evaluation of the Seventh Framework Programme, at p. 9.

### *4.5 The Institutional Arrangements for Transposition, Implementation and Enforcement*

Having reviewed the analytical objects, we analyse now the empirical mechanisms of the policy cycle: implementation and enforcement, and monitoring and evaluation. Since norms are instruments to change constraints and incentives of actors "in the hope" of achieving the desired outcome, the policy cycle must include implementation and enforcement aspects (Ogus 2006: 283). Indeed, as the OECD highlights:

> *High quality regulation management systems* […] *include the compliance and implementation dimensions.* […] *Regulatory design and implementation need to proceed from an understanding of the factors that influence awareness, willingness (acceptance), capacity (ability) and actions of regulated groups to comply with the intended regulations.* (Jacobzone *et al.* 2007: 48)

The push for an EU Better Regulation strategy has come *i.a.* from problems in implementation and enforcement of EU law (Meuwese 2008: 29). Transposition and implementation are important aspects of the EU policy cycle, more than in other legal systems, due to the multi-layered constitutional structure (Mandelkern 2001: 65-72). Indeed, the EU is unique because, even though its normative powers resemble those of a sovereign state, the vast majority of EU law is applied indirectly by other administrative bodies, *i.e.* national or local administrations.[21] On the contrary, enforcement is a problem common to the policy cycle of every legal system. These are the reasons why transposition, implementation, and enforcement are necessary elements of the EU policy cycle, more prominent than in the national contexts, and should accordingly be paid attention to in the *ex ante* assessment (Commission 2009: 43-44, 2010: 7).

The attention paid by the EU IA system to transposition, implementation, and enforcement is quite lower compared to the objectives and outcomes, as acknowledged by the Communication on Smart Regulation. The European Court of Auditors (2010: 41) noticed too that the attention to these aspects is poor and uneven. According to its report, "*[IAs]* do not, in all cases, give sufficient emphasis to implementation arrangements", and "a reference to implementation plan was provided in no more than approximately

[21] In force of art 4(3) of the Treaty on the European Union.

half of all reports reviewed". The analysis of the enforcement costs is also deemed insufficient.

The micro-analysis of implementation aspects in the IA on the Communication on biodiversity shows that they are covered only marginally, and not as a self-standing issue, but within the analyses of impacts. Implementation and enforcement are referred to only in general terms, such as "national implementation choices will be crucial".[22] This is striking, since most of the actions are actually to be carried out by the Member States. In particular, the relation between the non-binding nature of the Communication and the need to ensure that its actions are implemented by the responsible actors remains under-analysed.

### *4.6 Monitoring and Evaluation*

Monitoring and evaluation are similar mechanisms, but refer to different moments of the policy cycle. Monitoring logically and temporally precedes evaluation, dealing with the organisational implementation of a policy, and its direct outputs (DG INFSOC 2011). Evaluation is defined as a "judgment of interventions according to their results and impacts, and the needs they aim to satisfy" (Commission 2002: 2). That is, policy effects are compared to policy objectives and *ex ante* expectations, on the basis of empirical information.

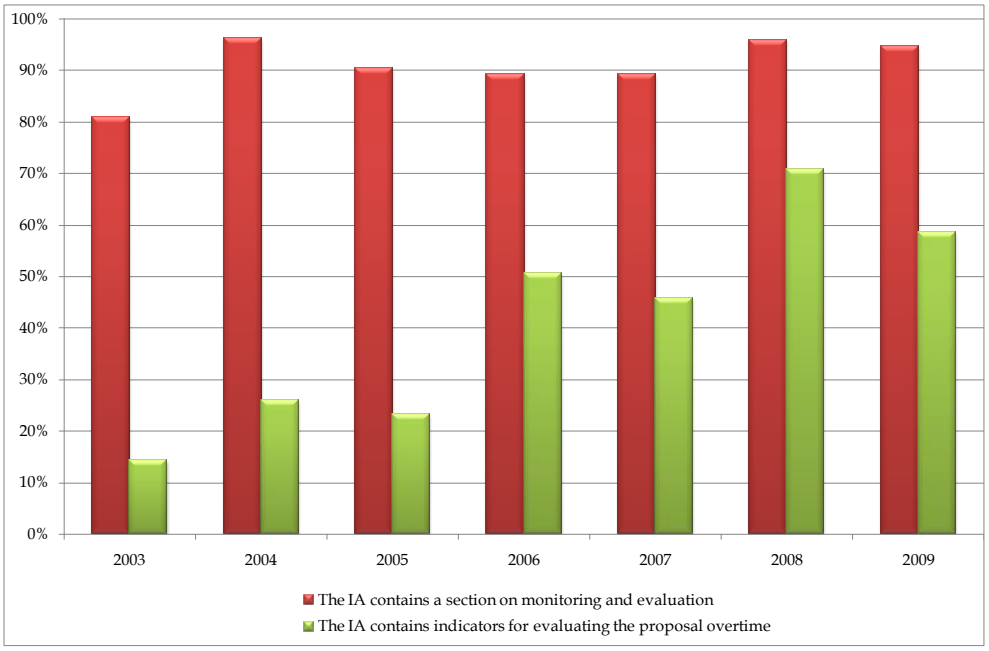
Monitoring and evaluation are an integral part of the smartly-regulated policy cycle (Commission 2009: 49, 2010: 4). In particular, IAs and *ex post* evaluation are complementary tools. The IA sets the benchmark against which any evaluation is to be carried out, by stating policy objectives and expected outcomes, and the institutional mechanisms for it. At the same time, *ex post* evaluation benefits from the information provided in the IA and constitutes itself the basis upon which building the new IA in case of revision (Renda 2011). If monitoring and evaluation tools are designed since the *ex ante* phase, all policy actors clearly know from the beginning what is going to be measured.

[22] IA on the Communication on Biodiversity, SEC(2006)607/2, at p. 61.

The EU has a wide experience in evaluating expenditure programmes, as required by Article 27.4 of the "Financial Regulation".[23] The same bold approach to the evaluation of general norm is still lacking. Indeed, the European Commission IA Guidelines have a short and general part on monitoring and evaluation provisions (ECA 2010: 49). It is based on the techniques to evaluate expenditure programmes, which are then translated into hints to evaluate general norms. The lack of targeted guidance explains why some DGs created their own internal guidelines for the *ex post* evaluation of legislation (DG MARKT 2008; DG INFSOC 2011).

The section on monitoring and evaluation is a mandatory element in the structure of IAs, and the macro-analysis shows that it is present in almost every IA, as shown in Figure 6. At the same time, the inclusion of indicators for monitoring, as suggested in Annex 13 to the Guidelines, is steadily increasing over time.

**Figure 6 – Macro assessment: Monitoring and Evaluation**




*Source: Author's Own Elaboration on CEPS Database*

[23] Council Regulation No 1605/2002 on the Financial Regulation applicable to the general budget of the European Communities.

The macro assessment only tells whether the part of monitoring and evaluation is present in each IA, but cannot assess its quality, *i.e.* whether it was drafted properly, or only as a "tick-the-box" exercise. To perform such an assessment, we present two case-studies below.

The IA on the Communication on Biodiversity covers monitoring and evaluation aspects, providing for a set of headline indicators, which are then detailed in Annex 2 to the Communication. Nevertheless, the list of indicators does not include any target, nor any baseline measurement is foreseen. The absence of targets makes the use of indicators much less productive in terms of steering different actors. Furthermore, the absence of baseline indicators undermines the effort for evaluating the action plan.[24] Finally, it is not clear how indicators are related to the actions and the specific objectives.

The first and second roaming regulations show a good example of how legislators may push for the inclusion of detailed monitoring criteria in the legislative act. The Commission's proposal for the first roaming regulation included a general requirement to monitor its outcome and outputs. The legislators went further, detailing in the legislative text itself the content of the subsequent evaluation.[25]

In the Second Roaming Regulation, the legislators went again further, and the legislative text eventually states that:

1) the monitoring report should be preceded by a public consultation;
2) the Commission should also monitor the quality and availability of services, the extent to which consumers have benefited from the outcomes of the regulation, and the degree of competition.[26]

This constitutes a good practice concerning the level of details of binding evaluation provisions. This is especially important since the legislators will be the addressees of the evaluation, therefore, as

[24] External Study on the Communication on Biodiversity, at p. 18.

[25] Article 11 of Regulation 717/2007.

[26] Article 11 of Regulation 717/2007 as amended by Reg. 544/2009.

principals, they should instruct the agent as to the content of the evaluation process.

The mechanisms for monitoring and evaluation presuppose the availability of data, both *ex ante* and *ex post*. The European Commission Guidelines consider good data as essential to the IA, to define the problem at stake, and to analyse the baseline scenario and the prospected impacts (Commission 2009: 18). Nevertheless, they do not go into more detail concerning methodologies for data collection and analysis. Indeed, this would hardly be possible given that availability of information, evidence, and data, is a problem idiosyncratic to each IA.

The European Court of Auditors confirms that availability of data is a key challenge for IAs (ECA 2010: 39-40). It notices that the European Commission uses to resort to external studies for data gathering, whilst internal resources are under-exploited. According to the empirical assessment of the IA system carried out by an external contractor, the majority of European Commission officers interviewed reported that empirical information was often lacking or inappropriate, lowering the quality of IAs (TEP 2007: 79-80). The most used data sources were consultation, external consultants, literature reviews or other sources internal to the European Commission. Member States were used as a source of information in less than 40% of the IAs, and *ex post* evaluation in less than 30%. Available statistics, both at European and national level, were usually of limited help, due to the insufficient level of detail.

The Commission could create organisational arrangements and common databases which can support the attempt to mainstream evidence-based policy making. The usefulness of these tools has already been pointed out by several international experiences (Jacobs 2006: 32). Otherwise, the Commission would risk remaining blind, both *ex ante* and *ex post*, because of paucity of available information. Below, we present one case in which data collection was not taken into account in the *ex ante* phase, and a case in which it was.

The empirical layer of the policy cycle of the Communication on Biodiversity has been badly managed, as underlined in the 2010

external study.[27] A careful analysis of what data were or could be available was completely missed in the *ex ante* phase. The European Commission carried out the identification of available data sources only in 2009. Many gaps were identified, both at the Commission and national level. For some actions, monitoring was eventually dropped because there was no possibility to identify relevant data. For some other informational needs, the Commission resorted to surveying Member States via a questionnaire. Its burdensomeness and limited relevance were questioned by the national officers, and, in many cases information was simply non-existing because no data collection had been foreseen.

On the contrary, the empirical layer of the policy cycle of the Roaming Regulations has been managed properly. This was possible because the Commission could rely on the established network of national regulatory authorities for e-communications. They already had in place mechanisms of market surveillance and close relationships with the industry operators (DG INFSOC 2011). The network of national authorities has been used as a source of information concerning outcomes, the achievement of objectives, and the level of compliance with the regulation. For the IA of the second roaming regulation, the network also provided the basis for an informed analysis of the *status quo.*

## 5 Conclusions

The main theoretical conclusions of this paper can be summarised as follows. First, a view of the IA as a tool for policy coherence has been proposed. The IA needs not to be conceived and designed as an instrument to promote efficiency in lawmaking, as it delivers large benefits also if only its procedural effects are taken into account. Mainly, IA governs political principal-agent relationships, thereby promoting coherence. This is even more important in the EU, where European institutions, Member States, and different parts of the European Commission co-operate in the lawmaking process in a unique and complex way. If designed and employed to govern political principal-agent relationships, IA becomes the key

[27] External Study on the Communication on Biodiversity.

instrument to steer and close the policy cycle, that is the target fixed by the European Commission in its latest Communication on Smart Regulation.

Second, a construction of the policy cycle has been put forward. The policy cycle is composed of two main layers: the analytical and the empirical. The former answers the question "*what* is the policy expected to deliver?" and includes three analytical objects: objectives, relationship between policy objectives and overarching goals, and outcomes/expected impacts. The latter answers the question "*how* is the policy expected to deliver", focusing on the mechanisms and information necessary to ensure and verify its delivery: implementation and enforcement, and monitoring and evaluation.

Then, an empirical analysis of the EU IA system both at a macro and micro level has been performed. From the macro point of view, the EU IA system is attentive to the definition of objectives, although it could do more in terms of their operationalisation and of the linkage with overarching EU policies. The analysis of impacts is rather well-structured, although it is argued that it should be steered according to the needs of the policy cycle, rather than being used as a trump card in the political debate. A more careful analysis should definitely be devoted to enforcement, transposition, and implementation aspects. Progress has been made concerning the inclusion of monitoring and evaluation aspects in the IAs. The micro-analysis has supported these results, and also shown that, when the empirical layer was not properly dealt with, the policymaker remained blind about the results of its actions, and was incapable of managing the policy cycle.

Policy conclusions can be drawn from the theoretical construction and empirical analysis carried out so far. The EU IA system came a long way since its foundation and it is generally appreciated as a tool that increased co-ordination, accountability, transparency, and openness. Nevertheless, as it is currently designed, it is not yet fit to steer and close the policy cycle, as envisaged in the Smart Regulation Communication. To achieve this goal, the analytical and empirical of the policy cycles should be wholly defined since the *ex ante* phase, in all its elements. Therefore, in the IA more attention should be paid to external coherence of the policy, that is its linkage with overarching

EU goals. Concerning internal coherence, the analysis of impacts should be linked to the stated objectives and to what can be monitored and evaluated *ex post*, avoiding non-verifiable statements and waste of resources in assessment of impacts which either have not any beneficial effect on the lawmaking, or have already been assessed at a higher political level. Finally, the policy cycle can be closed only if transposition, implementation, and enforcements aspects become regular features of the *ex ante* analysis. In this respect, classical law-and-economics tools, such as incentive analysis, can be useful in assessing whether and how Member States and other final addressees will react to the norm (Renda 2011). The design of monitoring and evaluation tools in the *ex ante* phase should be more careful, or *ex post* assessment will be hindered. Informational needs and institutional mechanisms allowing the Commission to collect data about policy outcomes should be already pre-set in the IA, and detailed provisions on monitoring should be included in the act itself.

All these suggestions do not amount to a revolution of the current IA system. It should be fine-tuned to the new objectives that the European Commission, in its apex, intends to pursue. To this aim, changes to the Guidelines could be proposed, to give a more balanced attention to the different aspects of the policy cycle which are to be included in the IA. At the same time, the IAB oversight could be re-focused on the aspects which have so far received less attention, but that in the new perspective become important. A fairly sound IA system has been built at the EU level, no doubt about that. Now it is time to use it to fully achieve the objectives of the Smart Regulation strategy and to ensure coherence of the overall policy cycle.

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**Case Studies**

*Decision on FP7*
Act
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Proposal
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# IS THE GOOGLE PLATFORM A TWO-SIDED MARKET?

Giacomo Luchetta*

**Abstract**

Probably not. Unlike other platforms, such as operating systems, credit cards, or night clubs, where a single transaction is performed via the platform, two different transactions take place on Google. Users look for search results in exchange of personal data, while advertisers look for users' attention, i.e. to be matched with the "right" user. Whilst operating systems, credit cards, and night clubs would be meaningless if either of the two sides were missing, search engines (like TV or newspapers) can exist under different market configurations. Indeed, in search engines network externalities run only from the number of users to advertisers, and not the other way around.

Building upon this analysis, a non-bilateral construction of the relevant market where Google operates is proposed. Google operates as a retailer of users' personal information. In the upstream market, it buys users' personal information from large retailers and final consumers in exchange of search services or upon monetary payment. Then, it uses the personal information collected to sell targeted advertising to advertisers in the downstream market. Based on this market construction, the allegations against Google are analysed as alleged violations of competition law along this vertical chain.

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**Graphic Abstract**

# 1 Introduction

Google entered our daily lives to such an extent that we wonder how the world had been previously. Google is the modern version of the catalogue of the Library of Babel. Nevertheless, unlike in Borges's prophecy, the Internet, containing an amount of information which is nearly infinite for any human scale, has its own finished catalogue: Google. Google is the gateway for the whole of Internet, therefore holding the key to one of the most important inventions of the twentieth century. Given today state of the art, if Google went down, a large part of the Internet would become *de facto* inaccessible. At the same time, if you are not in Google, possibly in a decent position for your relevant keywords, you almost do not exist in the online world.

Although it came into existence quite late compared to its predecessors Excite, Lycos and Altavista, Google has established itself as the leader of the search engine industry in the early 2000's, emerging out of the magmatic competition of the 90's. It leveraged on a new search algorithm which delivered much more accurate results, the famous PageRank, and a new business model, based on advertising. Google was also "lucky" that other major IT players such as Yahoo and Microsoft did not decide early enough to invest in the search and search advertising markets, since, at first, these markets looked as not-so-profitable as the good old Yellow Pages.

Google has eventually become the dominant player among Internet search engines. And, basically as any other firm which has become dominant in a high-tech industry, it has come under the spotlight of the antitrust authorities and competition lawyers and economists, in a sort of curse of the giants. Still, I claim that its fate may be different from that of its predecessors, in particular Microsoft, *i.a.* because the markets in which the Google Search Engine[1] operates are not two-sided. I would provoke the reader by stating that Google is more similar to a supermarket than to Microsoft Windows or Visa. Indeed, as I try to show in Section 4, Google is a retailer of personal data. Personal data are collected from users and then processed to sell targeted advertisings to advertisers. To grasp Google, two-sided

[1] Throughout the paper, by referring to Google, if not otherwise specified, I refer to the Google Search Engine and not to the whole platform.

economics is not necessary. Rather, value chain analysis, with some specific *caveats,* provides a more accurate framework. Understanding whether Google is a two-sided market is therefore the first research question of this paper. The consequential sub-question requires reviewing and retrieving a definition of what a two-sided market is.

The second research question concerns the possible consequences of abandoning the two-sided market theory in the Google antitrust cases. All major antitrust cases, and Google makes no exception, are batteground for different economic theories. The share of the lion has so far belonged to the two-sided market theory. The European Commission, when clearing the merger Yahoo!/Microsoft, could not be more explicit in stating that "*Internet Search engines such as www.search.yahoo.com, www.bing.com or www.google.com operate two-sided platforms serving both search users (for "free") and advertisers (for remuneration).*"[2] Namely, "*a search engine is a matchmaker connecting advertisers and users. Therefore a search engine is a two-sided platform where the demands on the two sides are interdependent.*" Most scholars are on the same line too; e.g. Cave e Williams (2011) state that "*Internet search is a classic two-sided market in which the search engine is an intermediary between those searching for information and those placing advertisements.*" Another primary scholar, Evans (2008a), includes Google among the examples of two-sided markets, namely among audience-makers. Few contributions (*i.a.* Manne and Wright [2011], which is one of the best-grounded analyses of the Google case) have tried to cast a doubt over the two-sidedness of Google.

Honestly, it was not my intention to cast any doubt on the mainstream analysis of the Google case. I just wanted to write a paper on the Google case, and I was going to do it through two-sided economics. Nevertheless, the more I went on with the analysis, the more difficult it was to reconcile two-sided economics and the actual working of the market in which search engines operate. Therefore, going backward, I had to ask myself whether Google was a two-sided market (probably not) and, subsequently, what two-sided markets are from an economic point of view.

[2] Commission Decision of 19/02/2010 Case No COMP/M.5727 - Microsoft/ Yahoo! Search Business, §47.

The feeling I brought back from this backward journey was that the literature on two-sided markets is based on assumptions which are not fit to frame the Google case. Two-sided markets, which were theorized to describe the credit card market – *rectius*, to defend credit card issuers from antitrust allegations – have been the most important innovation of the last decade in antitrust economics. As any successful innovation, its application spread larger and larger, also to markets which were possibly "not-so-two-sided". We switched from the risk, denounced by Wright (2004), of using a one-sided logic in two-sided markets, to that of applying a two-sided logic in one-sided markets.

The literature on two-sided markets conveys two main lessons for antitrust economics. The first and more important consists in possibly decoupling the assessment of the "appropriateness" of a price from marginal costs. The second is that feedback effects among the two sides make the assessment of the anticompetitive effects of certain conducts more difficult. Both lessons give sound arguments against improper antitrust allegations, and possibly explain why two-sided economics has become so widespread so fast.[3] Nevertheless, two-sided economics constrains firms' behaviours into logics which, if used inappropriately, make antitrust analysis deaf to the contribution of the literature on business models and on the Internet ecosystem. Both streams of literature are very important to analyse Google, as any other IT player.

This paper was born out of these preliminary considerations. Its structure reflects the backward journey, and it accordingly starts from the analysis of the literature on two-sided markets. Only then I try to explain why Google is not a two-sided market, and to subsequently propose a different theorisation. This different theory, developed from the Google business model, can be applied to all firms generating revenues by selling advertising spaces on the basis of information collected from users. In a way, this theory represents a new method to look at a long list of actors of which create value out of users' personal information: the intermediaries of personal information.

[3] Cf. Evans e Schmalensee (2007) and Ordover's (2007) comments; cf. also Evans's introduction to OECD (2009).

After many pages devoted to the theoretical analysis, I come to the antitrust case, where the non-two-sided theorisation of Google shows its value by bringing new insights. First, a clear criterion to define Google relevant market and to identify its competitors is developed. The analysis explains why Google is more worried by Facebook than by Bing, as it provides a theoretical framework for which search engines and social networks compete against each others. In this respect, abandoning the two-sided models allows the economic reality and firms' behaviours to enter and inform the antitrust analysis. Besides, the proposed theorisation provides a convincing explanation of the reasons why several Google conducts, most importantly manipulation of search results, albeit relevant and possibly worth of sectoral regulation, can be hardly framed as violations of antitrust law.

Step by step, in Section 2 the journey begins by reviewing the literature on two-sided markets to extract a tentative definition. Then, in Section 3, I analyse the Google platform and show why it does not fit in the proposed definition of two-sided markets. In section 4, I put forward my own construction of the Google platform as a vertical chain with Constant Unidirectional Network Externalities. Finally, Section 5 analyses the allegations against Google through the market construction that I propose, and Section 6 concludes.

## 2 Two-sided and Media Markets

"Two-sided market" is a young concept in economic theory. The term was first used in 2002 by Rochet and Tirole (2003). Other authors (Parker and Van Alstyne 2000; Caillaud and Jullien 2001, 2003; Evans 2003; Armstrong 2006) contributed to develop this concept, albeit using in some cases a different terminology.[4]

A two-sided market is a possible representation of a certain set of economic transactions. Indeed, two-sided markets were not

[4] "Two-sided market", as well as "multi-sided market" is only one of the possible names used, and possibly not even the most correct. Many authors (i.a. Hagiu and Wright [2011]; Renda [2011]) use the term two- or multi-sided platforms. When I use the term "two-sided market", I refer to any other similar expression.

discovered in the early 2000's. At that moment, several scholars developed a model which was fit to describe a set of economic phenomena, whose importance was growing. Of course, two-sided markets had existed well before they were termed so, and economists had already analysed the markets which are now defined as two-sided.[5]

At the origin of this stream of economic literature, scant attention was devoted to defining what a two-sided market is. Rochet and Tirole (2006), in their first attempt to sum up the new stream of literature, observed that it "had much of a 'You know a two-sided market when you see it' flavor." Economists had it clear that there was a larger and larger set of markets in which the behaviour of firms was at odds with the established economic theory. Therefore, scholars tried to show what specificities they perceived in these markets, and then modelled these specificities to predict the behaviour of firms within this framework. Using this new class of models, economists analysed situations which could not be satisfactorily explained before, such as the fact that setting a price equal to 0 or negative was a profit-maximising strategy. In addition to that, relevant policy conclusions, e.g. in terms of competition law or business strategies, were drawn out of this framework.

As said above, the early contributors to this theorisation identified several specific features of two-sided markets. Parker and Van Alstyne (2000) observed that when firms produce two complementary products sold in different markets, it is reasonable to underprice one of them to maximise profits. This is due to inter-market network externalities, that is positive externalities created in one market and enjoyed by the participants of the other. They also observed that such a firm behaviour can be partly due to the unique properties of information goods, namely that marginal costs are 0 or negligible. Caillaud and Jullien (2001, 2003) analogously remarked that two-sided markets are characterized by indirect network externalities, that is a relationship between the numerosity of participants in one side and the utility enjoyed by the participants in the other. They use the qualifying "indirect" to distinguish these

[5] Cf. Filistrucchi (2012) for a short account of earlier studies on two-sided markets.

network externalities from those affecting the same market (as introduced by Katz and Shapiro 1986). These network externalities create the "chicken-egg dilemma": market players need both sides of the market on board. Then, they also observed that in these markets price discrimination is commonly practiced between the two sides. Armstrong (2006) also focused on cross-side externalities: although in many markets firms compete for two or more groups of customers, in a set of interesting cases the benefit enjoyed by a class of customers depend on the numerosity of the other class. He also allowed for this externality to be negative, as in the case of newspapers, where readers have a negative preference for advertisements. Besides, he introduced the concept of multi-homing, that is the participation of users to multiple platforms. Evans (2003) identified three conditions for two-sided markets organised via platforms to emerge: i) existence of two or more distinct group of customers; ii) existence of positive externalities in force of the connection or coordination of the two groups; iii) the need of an intermediary to internalise the externalities. Rochet and Tirole (2003) also focused on network externalities. They state that many, if not most of, markets with network externalities are two-sided markets. The class of two sided-markets is a sub-class of markets with network externalities, namely those markets in which a platform can effectively (i.e. without side-payments among users) perform cross-subsidization between distinct groups of end users.

To summarise, this early literature upholds that a two-sided market is an economic phenomenon in which two distinct types of users enters into a transaction through a platform, and that the numerosity of each group creates an externality for the other. All authors, a part from Armstrong, focus mostly on positive externalities. Network externalities have two practical consequences: the "chicken-egg dilemma" and cross-subsidisation.

Rochet and Tirole (2006) acknowledged that if the analysis stopped here, the class of two-sided markets would be overinclusive. Indeed, all markets and firms operate on (at least) two sides, and to some extent, the proper working and the number of participants of one side are beneficial for the other. Therefore, they proposed a much more stringent definition: given a platform charging a per-interaction

price $p_1$ and $p_2$ to two categories of users[6], the market for this interaction is two-sided if the total welfare depends on the price structure (that is the values of $p_1$ and $p_2$) and not only on the aggregate price (that is the sum of $p_1$ and $p_2$). As a corollary, transaction costs must prevent the two sides of the market to compensate each other, otherwise side-payments would prevent the firm from affecting demand through the price structure.

Still, even this definition tends to overinclusiveness.[7] Rochet and Tirole were aware of this, and discussed whether even *every firm* could be considered a two-sided market under this definition. They considered this not to be the case, "since at least in competitive environments, firms are often de facto one-sided platforms, in that there is little 'wriggle room' for them to manipulate the price structure". This reasoning does not seem very satisfactory, as it should then be asked, for example, whether firms in less competitive environments should be considered two-sided markets.

Nevertheless, an aspect of this definition has been so far downplayed and would be crucial to draw a clear line among two-sided and other markets. Rochet and Tirole considered firms charging a price per interaction, and the sum of those prices. In most of the two-sided markets they listed there is a **single interaction** among the two groups of users, split in two prongs, whose two prices can be summed. Prices, indeed, are not pure numbers. They are expressed in currency per quantity of product. You cannot sum the price of a kg of butter (€/kg) with the price of one cannon (€/piece); or the price for a search (€/query) with the price for advertisement (€/click).

On the same line, although with a different terminology, Hagiu and Wright (2011) consider that the distinguishing feature between two-sided markets and re-sellers is the existence of a direct interaction among the two groups of customers. They also provide a useful contribution to systematisation by clarifying that the two groups of users must not be distinct, as long as they have different point of

[6] Buyers and Sellers in Rochet and Tirole's definition.

[7] Rysman (2009) is also aware of overinclusiveness in two-sided markets. Still, he is more interested in understanding in which markets two-sidedness is important than in a clear demarcation. With this approach, there is the risk to come back to the "you know it when you see it" early tendency.

interaction with the platform (i.e. the same person may be app developer and app consumer on the Apple platform).

An exemplificative list of two-sided market, the single interaction at stake, the class of users and their mirror aims is provided in Table 1.

**Table 1 – Two-sided markets with single interaction**

| Platform | Interaction | User A | Aim of Users A | User B | Aim of Users B |
|---|---|---|---|---|---|
| *Credit Card* | Trade of a good | Consumer | Buy the good | Merchant | Have his good sold |
| *Yellow Page* | Finding a Business | Consumer | Find the Business | Business | Be found by consumers |
| *Stock Exchange* | Trade stocks | Investor | Buy the stock | Owner if the stock | Have his stock bought |
| *Heterosexual Dating Club* | Date | Men | Find a woman to date | Woman | Find a men to date |
| *Operating System* | Computer tasks | Consumer | Perform tasks | Application Developer | Have his application used for tasks |

The markets listed above are fully consistent with Rochet and Tirole's definition. The uniqueness of transaction dispels all doubt about whether firms, both in competitive and non-competitive environments, are included, as they perform two different transactions: they buy work and inputs on one side, and sell goods/services to the consumers on the other.

A consequence stems from the single interaction: in two-sided market there are always **reciprocal inter-side positive externalities**.[8] Since both classes of users want the single interaction to be carried out, the higher the numerosity of both sides, the higher the possibility for the interaction to take place. This is stated nowhere in the literature, but seems a necessary consequence if the reader

[8] Network externalities are positive external consumption benefits: a decision to consume a good or service provides a benefit to other consumers. Network externalities may be intra-side when consumers in one market provide benefit to other consumers in the same market; or inter-side, when consumers in one market provide benefit to consumers in another related market (Katz and Shapiro 1986; Pardolesi and Renda 2002).

considers the following example. The numerosity of the classes of users is analogous to the liquidity of the market. In every market, transactions are facilitated the higher the number of counterparts, and two-sided markets make no exception. Reciprocity does not imply that externalities from both sides are equivalent: there may well be the case that one side creates stronger externalities, and, in accordance with the theory, it will be imposed a lower price, or even granted a subsidy.[9]

The reciprocity of externalities allows clarifying other "grey areas" of two-sidedness. For example, supermarkets have been claimed to be two-sided markets. They fulfil the single interaction criterion, as the interaction would be reconstructed as the trade of products between producers and consumers. Still, they do not fulfil the reciprocal inter-side positive externality criterion. Consumers enjoy inter-side externalities due to the variety and availability of products (Armstrong 2006). On the contrary, producers do not enjoy inter-side externalities due to the number of consumers, as they get utility, i.e. money, on the basis of the quantities delivered to the supermarket, and not in function of final sales to consumers. If market structures with unilateral inter-side externalities were to be considered two-sided markets, the definition would include all retailers, as the analysis for supermarkets applies to any kind of retail shop. Personal service providers, such as hospitals, hotels, or beauty farms, would also fall in this definition, as consumers receive positive externalities from the amount of operators employed by the firm, but operators enjoy no externalities based on the number of consumers.[10] Inclusions of these large sectors seems to me exorbitant compared to the object of the two-sided literature. Besides, I do not see major failures of the economic theory in explaining behaviours of firms,

[9] Hagiu and Wright (2011) consider inter-side externalities neither necessary nor sufficient, and provide some examples of two-sided markets which would not display these externalities. However, these markets are quite marginal and do not show inter-side externalities only in some specific occasions.

[10] The single transaction in these cases could be construed as the delivery of e.g. health services from professionals to patients, with hospitals as platforms.

suppliers and consumers in these markets which need to be addressed by an innovative theorisation.[11]

If my definition, based on the uniqueness of the transaction and reciprocal inter-side externalities were adopted, a class of what are currently considered two-sided markets would be excluded: media markets[12], that is newspapers, televisions, internet portals, and any other operator which on one side sells services to consumers, and on the other side sells advertising space to advertisers. In media markets, inter-side positive network externalities run from the number of consumers to advertisers, but, for many medias, they do not run from the number of advertisers to the number of consumers.[13] Furthermore, the two transactions are not the two parts of a single interaction: consumers want content, advertisers want consumers' attention. The common ground between these two interactions is that they take place on the same physical space: the media support (be it paper, a TV channel or a website).

Even in the current two-sided market literatures, media markets are to a certain extent outliers, because of no or negative inter-side externalities from advertisers to users. Other scholars have noticed the hiatus between two-sided and media markets. Filistrucchi (2008) noticed that the technique to determine the relevant market for media operators needs to be different from that applied to other two-sided markets. He also observed that there is no real interaction between the two-sides of a media market, as I try to argue. He and his colleague (Filistrucchi *et al*. 2012) further developed this insight by distinguishing between two-sided transaction markets and two-sided non-transaction markets. The latter category includes media markets, whilst the former all other two-sided markets.

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[11] Hagiu (2007) excludes that retailers are two-sided markets, by distinguishing between the merchant mode and the two-sided platform modem, whereas in the former case merchants acquire the property of the good.

[12] Audience-makers in Evans's (2003) taxonomy.

[13] I had very useful discussions on this issue, and acknowledged that some media users enjoy benefits from advertisements (Rosamaria Bitetti kindly suggests that the readers of Vanity Fair do). Nevertheless, I retain my point that there is a class of media whose users do not enjoy benefits from advertisements, and the following analysis applies i*n primis* to them. I will explore in Section 3 how most of Google users do not enjoy benefits from advertisements.

I would like to approach the conclusion of this section by showing the structural consequences of the application of the criteria of the single transaction and the reciprocal inter-side externalities. **Two-sided markets with these two features are to be two-sided.** Some examples can clarify what seems to be only a tautology. There cannot be credit card transactions if either buyers or sellers do not take part in the platform;[14] yellow pages are useless if either readers or businesses are missing; the videogame console market does not exist if there are not both end consumers and game developers. Both parts are necessary, and, rightly because of this necessity, a platform faces the "chicken-and-egg" dilemma, which is an "essential" (Evans 2008a) feature of two-sided analysis. In media markets, the two sides are not necessary, they represent a business strategy. Television channels are a good example: there are channels whose business model is two-sided, that is based on free content and advertising revenues, alongside of pay-per-view channels which earn revenues from subscription fees. In addition to those, there are public channels which are funded out of coercive taxation. No coercive power could ever fund a credit card platform if either of the two sides were missing.[15] Media platforms do not necessarily face the "chicken-and-egg" dilemma: they need the end users to have advertisers, but not viceversa.[16] This is a key difference with non-media two-sided markets, where, again, platforms need both sides to be operational.

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[14] Evans (2012) also notices this, albeit in a footnote. On a similar, but less radical, line, Rysman (2009) distinguishes between two-sided strategies, where platforms have a choice either to go two-sided or not, and structurally-constrained two-sided markets.

[15] Coercive powers could force users to join the platform, but could not fund it if users are not, spontaneously or forcefully, there.

[16] E.g., newspapers are usually considered platforms for which both readers and advertisers are necessary to remain in the market. As a counterexample, this has not been the case for the Italian newspaper "*Il fatto quotidiano*". Launched in 2009, he closed the financial year with €29.6 million of revenues and €5.8 million of profits, whilst revenues from advertising amounted to about €850,000. It means that this newspaper covered his costs without resorting to the advertising side, although the economic literature usually assumes that newspaper makes loss on the readers' side to earn extra-revenues on the advertisers' side. See http://www.italiaoggi.net/news/dettaglio_news.asp?id=201108161129234046&chkAgenzie=ITALIAOGGI&titolo=Il%20Fatto%20fa%20ricchi%20Padellaro%20&%20co (last accessed on March 2012).

All in all, I propose the following definition of two-sided markets. A market operator, called platform, operates in a two-sided market when:

1) a single transaction takes place among two different groups of users connected by the platform;
2) the numerosity of each group of users creates reciprocal inter-side positive externalities;

As a consequence of these two requirements, the two sides are necessary to the operation of the platform.

My definition neatly separates two-sided markets from other economic structures for which two or more sides are relevant (such as firms, supermarkets, providers of personal services, media). Some other authors (Hagiu 2009; Hagiu and Wright 2011) propose that platforms can be ordered along a continuum, from pure multi-sided platform to merchant or re-sellers. In particular, Hagiu and Wright (2012) use the share of value created by enabling direct interactions among the types of users as the ordering criterion. Once other definitional requirements are met, if value is created primarily by enabling direct interactions, the firm can be considered a multi-sided platform. Therefore, media whose share of revenues is primarily obtained from advertising would be two-sided platforms (e.g. Vogue), otherwise they would not. Although this contribution is very important and clarifies several other definitional issues, I still believe that is more useful to consider Google and other media as collectors and processor of personal information in order to sell targeted ads rather than multi-sided platforms, as it will be discussed more in details below.

Although media markets cannot be represented as two-sided markets according to this definition, I do not go as further as to claim that they should be treated as normal one-sided markets, since the degree of one-way externalities among advertisers and users is an important specificity to be taken into account. Another possible economic representation of media markets will be proposed in Section 4, and, hopefully, it will be useful to interpret Google's market. The focus is not on discovering whether the Google platform is a two-sided market or not, but to create a theoretical economic framework which helps a better understanding, especially in terms

of antitrust policy. Before doing so, in Section 3 the features of the Google platform are analysed, showing why it does not fit in the definition of two-sided markets proposed above.

## 3 Google's Market

As said above in the introduction, most of the economic analyses of the Google platform and many antitrust cases against Google are based on the two-sided market paradigm, sometimes with several *caveats* (*i.a.* Devine 2008; Pavel 2009; Cave and Martin 2011; Etro 2011). Differently, here the Google platform for search and search advertising is claimed not to be a two-sided market.

In this section, the relations among the different actors on these markets are analysed, trying to show what the main differences between two-sided markets and the Google platform are. Firstly, this section shows that two transactions, and not a single one, take place on the Google platform; then that operating with two classes of users, searchers and advertisers, is a business strategy and not a structural feature of the market; and finally that reciprocal cross-side network externalities between the two classes of users are absent, or at least questionable or negligible.

On top of its search engine, Google provides other services, which are instrumental in establishing its brand and a base of Google users. Nevertheless, the Google search engine can be accessed without any need to have a Google account for other services, and other services can be accessed independently from the use of the Google search engine.[17]

Focusing on Google operations in the search and search advertising markets, business relations can be described as follows (Varian 2007; Lastowka 2007; Grimmelmann 2007; Evans 2008b; Pavel 2009; Cave and Williams 2011; Etro 2011). Google is a platform on which two classes of users operate: searchers and advertisers.

[17] In some cases, as discussed below, Google search delivers results from its own other services.

On the one hand, searchers access Google to submit a query and obtain relevant web resources, usually called organic search results. To produce search results, Google indexes and crawls the WWW, and applies its search algorithms to the content retrieved.[18] Alongside of organic search results, Google may also provide results from services which are provided by Google itself (such as maps or videos), so-called own-product-placement results. Searchers may access Google either directly on its website(s), or indirectly, that is through another website or software, such as Google toolbar, search bars on browsers, or mobile applications.

On the other hand, Advertisers buy space for targeted search advertisements on Google. Advertisements may be purchased directly from the Google-owned advertising platform, Adwords, or indirectly via advertising agencies. Advertisers bid for keywords via a second-price sealed bid auction. Keywords are a proxy of searchers' interests, therefore Google ads are considered targeted advertising. Based on the advertisers' bids, the quality score and the reserve price set by Google, paid search results are shown next to or above relevant organic search results. Advertisers pay per each click that searchers may make on the advertising link (Cost-Per-Click).

Hence, on Google websites two different transactions take place: users want information, advertisers want the attention of users which are supposedly interested in their products or services. The lack of a single transaction is the first key difference from two-sided markets, as defined above. As in media markets, these two transactions take place on the same location, that is Google's websites.

For Google and any search engine, operations on both search and search advertising markets are a winning business strategy, not a structural feature (Grimmelmann 2007). Even though in these days the Google model seems to be the sole strategy available, from a

[18] This interaction between Google and websites can hardly be considered an economic transaction as there is not any exchange, only a one-sided retrieval of information. Google can freely crawl websites and retrieve contents in accordance with the machine-readable limits imposed by website owners (the so-called robots). This non-economic interaction is similar e.g. to that between map providers and properties/locations; or between restaurant guides and restaurants.

structural point of view it needs not to be the case. In addition to the advertisement-based model, search engines could also get revenues from consumers or indexed websites. At the very beginning, Google itself was not operating on the market for advertising: its founders hoped to get enough revenues by licensing Google search technology (Devine 2008).

As stated above, two-sided markets are characterized by reciprocal inter-side network externalities.[19] These externalities create the "chicken-egg" dilemma and the feedback loop between the numerosity of the two sides. In some cases, inter-side network externalities are reinforced by intra-side network externalities. This is the case e.g. for operating systems, where consumers enjoy benefits from both the available applications and the users of the system. Google's markets do not show either reciprocal inter-side or intra-side network externalities. The lack of reciprocal inter-side externalities would suffice to exclude Google from the set of two-sided markets according to the definition proposed. The lack of intra-side network externalities is analysed *ad abundantiam*, because they play quite an important role, although maybe misplaced, in the economic literature on search engines.

Advertisers enjoy positive inter-side network externalities originating from the number of searchers, as the audience for their advertisements increases. They also appreciate that searchers are profiled with the highest possible level of precision, as Google does. Nevertheless, stating that searchers enjoy benefits originating from the number of advertisers is much more questionable. If this were not the case, the reciprocity of inter-side network externalities would be missing. Let me dwell upon this issue.

Google searchers look for information, and together with this information they are shown advertisements. I claim that in most cases these advertisements do not deliver additional benefits to the users, as they are not consistent with the aim of the search. Broder (2002) proposes the following taxonomies of search queries:

1. Navigational queries, if the searcher wants to know the location of a certain resource on the Internet. E.g., the query "Wikipedia

[19] See footnote 8 above.

Italiano" may be typed into Google to know the exact URL of the Italian edition of Wikipedia;

2. Informational queries, if the searcher wants to access information on a certain issue. E.g., the query "net neutrality" may be typed into Google to retrieve a list of websites which provide information on this topic;
3. Transactional query, if the searcher wants to access a website to perform a transaction. E.g., the query "flight Rome-Brussels" may be typed into Google to find a website selling that flight.

It may be quite safely assumed that when searchers type a transactional query, they enjoy positive externalities from the search advertisements. Nevertheless, these queries are estimated to represent about 10% of all search queries (Jansen *et al.* 2008). Besides, search ads can cause positive externalities only to the extent to which the information is not delivered via the organic search results too.[20] Anecdotally, if the search "flight Rome-Brussels" is performed on Google.com, the first and the third paid advertisements correspond to the first and the second organic results.[21]

More questionable is whether searchers typing informational or navigational queries, which represent 90% of all queries,[22] enjoy any kind of positive externalities from advertisements, or if they are indifferent, or if advertisement creates negative externalities. At best, this is a set of empirical propositions whose truth needs to be tested (Manne and Wright 2011). Some scholars (Evans 2008b; Pavel 2009) consider that there is a self-reinforcing loop between the number of searchers and advertisers, and therefore conclude that the Google platform is best described as a two-sided market. I rather argue that, as illustrated above, there are solid theoretical arguments to believe that, for most of the queries performed on Google, inter-side positive network externalities from advertisers to users are absent or at best

[20] "[S]earch advertising is a partial substitute for search rankings." (Grimmelmann, 2007).

[21] Search performed on google.com from an IP located in Brussels on the 27th of March 2012.

[22] 80% of queries are estimated to be informational, and 10% navigational (Jansen *et al*. 2008).

negligible.[23] Therefore, the Google platform cannot be considered as a two-sided market according to the definition provided in Section 2.

The lack of intra-side network externalities among the advertisers on the Google platform seems not to be an open question. The higher the number of advertisers, the more intense the competition for advertising space, therefore prices are higher and the salience of an advertisement is lower (Manne and Wright 2011). It may be stated that the higher the number of advertisers, the more accurate the match between advertisements and research queries. But this result can be achieved also by advertisers bidding for more accurate keywords.

Google searchers do not enjoy positive intra-side externalities due to the numerosity of their class. True, a large number of search users, and therefore of search queries, improves the quality of the search mechanism. But this is not a network externality. As Katz and Shapiro (1986: 824) clearly put it (emphasis original):

> *Network Externalities have two fundamental effects [...]. First, the relative attractiveness today of rival technologies is influenced by their sale history. In effect, they are "demand-side economies of scale" [...]. Second, and perhaps more important, in the presence of network externalities, a consumer in the market today also cares about the* future *success of the competing product. [...] Network externalities share the first type of increasing return to scale with learning by doing. The second source of demand-scale economies is, however, peculiar to industries with network externalities.*

In the same way, Economides (1986, 2004) describes the network externalities effect as the fact that a good is more valuable when the *expected* sales are higher. From the literature, it appears clearly that when there is no correlation between consumer utility and *future* numerosity of users, we should not talk of network externalities, but only of other kinds of demand-side economies of scale, such as learning economies.

As said, scholars and competitors claim that Google deliver better search results because it handles many more search queries and many more tail search queries (Grimmelmann 2007; Evans 2008b;

[23] On a similar line, see Argenton and Prüfer (2011) who also review several other contributions on this issue.

Pavel 2009; Cave and Williams 2011). Therefore, Google is able to better and more speedily adjust its search results to what users really search, and to better perform other tasks such as spelling corrections. Nevertheless, *today* quality of search depends on the number of *past* queries and users; therefore this phenomenon cannot be considered a network externality. Indeed, the same happen in the aircraft industry, which is the classic illustration for learning economies: Boeing and Airbus make better aircrafts at lower costs because have made more aircrafts in the past. Economists would never say, and have never said so far, that aircraft buyers enjoy network externalities; analogously, economists should not say that Google searchers do (Manne and Wright 2011).

In analysing the relationship between number of queries and quality of search, Argenton and Prüfer (2011) and Etro (2011) use the term (indirect, inter-temporal) network externalities, although they acknowledge the difference with "classical" network externalities and rather stress the similarities with learning economies. Devine (2008) bases the feedback loop on the consideration that additional advertisers deliver benefits to searchers because they provide additional funds for Google to market better search tools or more products. Still, according to such a wide definition, network effects and feedback loops could be found in any market in which firms re-invest their revenues, and this is not the case in the economic literature.

To summarise, this section has shown how Google differs from a two-sided market. In particular, two differences are relevant for the present analysis:

1. two transactions with two distinct objects take place on the Google platform;
2. there are no reciprocal inter-side network externalities, because the number of advertisers does not create a positive externality to searchers, at least for a large set of queries;

Given these differences, Google operates in two markets – rather than in a two-sided market – to pursue its business strategy. Therefore, in the next section, I propose a construction of the Google platform as a one-sided value chain with Constant Unidirectional Network Externalities, in short a CUNE-vertical chain.

# 4 A Construction of Google as a One-Sided Market

After having proposed a definition of two-sided markets in Section 2 and analysed in Section 3 why the Google platform does not fit in it, the paper now aims at sketching a possible construction of the Google platform as a vertical chain. The vertical chain would be composed of two one-sided markets, search and advertisements, with Constant Unidirectional Network Externalities (CUNE) from the number of searchers to advertisers. The goal of this theoretical effort is to understand whether changing the underlying economic theorisation has an impact on the Google antitrust case. Probably yes, as it will be shown in Section 5,

In this model, the Google platform is a particular kind of retailer, buying personal information - which is used to profile users much more accurately than most of other medias – and processing it to match users and advertisers willing to deliver targeted messages.[24] Google acquires personal information from other intermediaries and end users either by monetary payments or providing an in-kind payment, that is search results.[25] Advertisers make monetary payments to Google to be matched with users on the basis of the personal information collected.

To begin with the analysis of the upstream market, I am not the first suggesting that search results are actually a price paid by Google to end users. Etro (2011) recognises that platforms typically attract consumers by "providing free services that deliver utility for consumers and can be seen as a price paid to them". As wages are the medium for households to buy goods and services in the offline world, in the online world search results are necessary to access resources online. Whilst in the offline world households supply their working force in exchange for wages, in the online world households supply their personal information in exchange for search results,

[24] The supermarket metaphor should not be intended as if the personal data were re-sold to advertisers. Advertisers get access to the users they are interested into without directly accessing its personal data.

[25] Again, I leave outside the scope of the analysis all the other services provided by Google. Their inclusion in the analysis would not change the outcome, as they are not bundled or tied to Google search: users may decide to use Google only as a search engine, and not for its other services.

allowing Google to perform profiling and matching users and advertisements.

This construction may not be totally convincing at first sight, as we are used to think of search services as products demanded by consumers for a 0 price. Nevertheless, Google's behaviour in the market for personal information comes closer to that of a retailer if it is considered that it actually **pays** other websites, and even consumers[26], for a large chunk of its traffic, as any other firm pays for its supplies in the upstream market.

Focusing on the business relationships between the search engine and other IT players, Google acquires search traffic via agreements with other websites, software producers or Original Equipment Manufacturers (OEMs) (Evans 2008b; Pavel 2009; Etro 2011). Minor (or former) search engines, such as AOL or ask.com, deliver their users' queries, and therefore personal information, to Google. Large websites sell to search engines the opportunity to include a search box in their webpages, and Google has agreements with the bulk of most popular websites. In addition to that, OEMs and browsers receive substantial revenues from search engines for installing dedicated search toolbars. Google, as its main competitor Bing, is willing to incur in substantial Traffic Acquisition Costs (TACs) to acquire this traffic. TACs usually consist of a fixed fee and a share of ads revenues tied to the search queries. For example, in 2011 Google entered in an agreement with Mozilla to be the default search engine in its Firefox browser search box for $300 million.[27] For the last financial quarter of 2011, Google TACs totalled $2.45 billion, or 24% of total advertising revenues.[28] According to its main competitor,

[26] Since March, 1st 2012, under the new programme "Screenwise", Google pays up to 25$ per year to end users which allow sending more detailed information about their behaviour on the Internet, i.e. which allows to be better profiled. See http://www.google.com/landing/screenwisepanel/ (last accessed on 29 March 2012).

[27] Cf. http://www.portfolio.com/views/blogs/daily-brief/2011/12/22/google-to-remain-default-browser-in-mozilla-for-300-milllion-dollars-per-year (last accessed on 29 March 2012).

[28] Cf. http://investor.google.com/earnings/2011/Q4_google_earnings.html (last accessed on 30th of March 2012)

Microsoft, Google receives at least 624 million search queries from its partners.[29]

To summarise, the Google platform operates in the upper part of the value chain by acquiring personal information. A part of the supply of personal information is acquired directly from end users and it is paid in kind, by providing search services. The remaining part of the supply is acquired from "wholesalers", that are large websites, other search engines, software producers, especially browsers, and OEMs, and it is paid cash, as any production input in any other industry.

On the downstream market, advertisers can be constructed as buyers of targeted ads, aimed at matching products/services and users, based on the personal information retrieved upstream. Advertisers' surplus function of the number of users does not have a point of maximum: given a certain price, they aim at accessing as many users as possible. Marginal utility of audience, albeit diminishing, is never negative. To put it bluntly, advertisers will always prefer reaching 1,000,000 viewers than 1,000 for the same budget.[30] Since the marginal cost to reach an additional viewer, that is its price, is 0, advertisers' surplus increases indefinitely when the number of users increases. Formally, Gossen's second law is verified only for x approaching infinity, where is the audience (number of accessed users). Gossen's second law states that:

$$\frac{\partial U_x}{\partial U_y} = \frac{p_x}{p_y}$$

In our case, x is the audience (number of accessed users) and y is a basket representing all other goods. As $p_x$=0, for the equation to be verified $\partial U_x$ is to be equal to 0. Nevertheless, the marginal utility of a viewer of an advertisement, as stated above, is never nihil, if not approaching the limit to infinity: $\lim_{x\to\infty}(\partial U_x) = 0$.

[29] Cf. http://www.cresse.info/uploadfiles/2011_JEAN-YVES%20ART.pdf (last accessed on 30th of Mach 2012)

[30] Of course, to buy advertising space on media platforms with a certain audience advertisers need a minimum budget. The larger the expected audience, the higher the budget. But in this Section I keep on focusing only on the Google platform and not on media markets in general. The argument would apply also to any other media, *mutatis mutandis*.

This phenomenon happens because advertisers do not pay for a certain amount of users, but of clicks. Once the Cost per Click (CPC) is fixed via the auction mechanism, advertisers would buy as many clicks as possible, within their budget, as long as their expected profit per click is higher than the price (and 0 clicks otherwise) (Evans 2008b). This is the reason why advertisers enjoy Constant Unidirectional Network Externalities based on the numerosity of the audience: the higher the audience, the better.

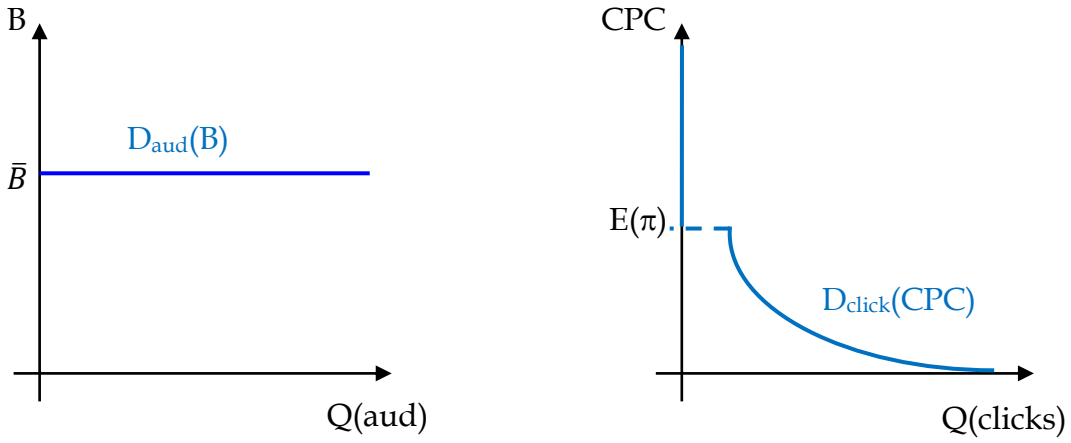
With the old economic toolbox, the advertisers' demand function for audience ($D_{aud}$) can be constructed as an infinitely elastic demand curve. This assumption is common in the literature on the economics of advertisement (Spence and Owen 1977; Anderson and Gabszewicz 2006). Infinite elasticity of the demand for audience is given by the fact that the demand of click "saturates" the budget (B) as long as the expected profit per click E(π) is higher than the CPC. The demand function for clicks in function of the CPC ($D_{click}$) is sloped downward for prices lower than the expected profits (Eπ), and 0 elsewhere.

In formulas and figures:

$$D_{aud}\,(B) = \bar{B}$$

$$\begin{cases} D_{click}\,(CPC) = \dfrac{\bar{B}}{CPC} & E(\pi) \geq CPC \\ D_{click}\,(CPC) = 0 & E(\pi) < CPC \end{cases}$$

**Figure 7 – Demand curves in Google platform downstream market**



After the *pars destruens*, in which I have shown why Google needs not to be constructed as a two-sided market, this section provided the *pars construens* of this paper: a construction of the Google platform as a CUNE-vertical chain. The next section will be devoted to the analysis of the allegations against Google based on this theorisation of the platform.

# 5 Competition Analysis of Google's Vertical Chain

This section deals with the goal of this paper, that is to understand what would happen to the Google case if the underlying economic analysis were not based upon the two-sided market theory. On the basis of the theorisation proposed in the previous Section, I try to apply the idea that Google is a retailer of personal information rather than a two-sided platform. The aim is to show that if the analysis switches from the two-sided model to the CUNE vertical chain theory, a clear criterion for the definition of the relevant market can be formulated, overcoming the incongruities arisen so far. As a consequence, however, we need to give up a product-based market definition, i.e. based upon the services provided (ads and searches), to adopt an approach which considers that Google's market is based upon the personal information collected. Besides, it will be hopefully clarified which Google conducts can be constructed as alleged violations of competition rules.

This section cannot be considered definitive, as the major antitrust case so far, initiated by the European Commission, is still ongoing and the statement of objections, i.e. the detailed allegations against Google, have not yet been made public. A more thorough analysis of the Google case from the point of view of EU competition will be the object of a future research, but here I want to make clear if and how the alleged abuses of dominant position can be constructed over a vertical value chain.

### Definition of the Relevant Market

In my construction, Google operates in the relevant market for users' personal information. As it was already suggested, the market definition is no longer product-based and consequently does not

depend on the features of the service sold by Google, that is search results and ads. It means that I no longer propose to classify the market for ads based upon the media-type, that is offline or online media, or the online advertising delivery model, that is display, search and classified ads. On the contrary, what is relevant to draw the boundaries between the markets is the degree of user profiling.

So far, economic literature and the case law have considered the market for online advertisements as distinguished from the market for offline advertisements in most cases (Pavel 2009; Ratliff and Rubinfeld 2010; Etro 2011; Van Loon 2012).[31] In my interpretation, this amounts to say that the level of profiling in online advertising is so much higher that online and offline ads are not substitutable from the point of view of advertisers.[32]

The open question is whether the level of profiling is also different enough between search advertisements on the one hand and other kinds of online advertisements on the other. So far the European Commission could escape taking any stance on this issue.[33] On the contrary, the French Competition Authority identified a separate relevant market for search advertising in an opinion on the Google operations.[34] The construction here proposed suggests assessing whether, from a theoretical and empirical point of view, the personal information collected by search engines allows for a level of profiling similar or different compared to ads sold by other internet websites.

If the level of profiling - that is, the amount of personal information collected - is the criterion to define the relevant market, it becomes clear that Google's competitors are not only other search engines. On the contrary, other intermediaries of personal information would be part of the same relevant market. Even though a proper market definition would need an empirical test, it is already possible to reasonably state that at least two other classes of operators compete

[31] Cf. European Commission Decision of 11/03/2008 Case No COMP/M.4731 – Google/DoubleClick, §§45-48; Decision Microsoft/ Yahoo! *supra* note 2.

[32] Cf. Cave and Williams 2011.

[33] Cf. note 31 above.

[34] Autorité de la Concurrence, Opinion No 10-A-29 of 14 December 2010 on the competitive operation of online advertising

on this market: social networks and email providers. Both classes of intermediaries collect a large amount of users' personal information, as search engines do, and use it to deliver targeted ads on the same page in which their services are delivered. Other websites which require registration to keep track of users' behaviours and deliver ads on the basis of this information could also be part of this relevant market if the level of profiling were similar. In addition to those, it should also be considered that the level of profiling in display advertising is becoming higher, and therefore the profiling gap is becoming closer, possibly leading this form of advertisement to be included in this market.[35]

From the CUNE model it emerges clearly why Google is competing e.g. with Facebook, something which was already suggested by some authors (Devine 2008; Alexandrov *et al.* 2011; Renda 2011), but, most of all, appears clearly from the strategies of the two companies. Clearer than any reasoning is The Economist's cover on December, 1st 2012 reproduced at the beginning of this article. Indeed, advertisers want to deliver granular targeted ads based on a large amount of personal information and are likely to consider both Google and Facebook as competing platform. From the point of view of supply substitution, it is worth noting that Google entered the social network market with Google+, and that Microsoft's Bing entered into an agreement to supply search services on Facebook.

Rather than only on search queries or search-based advertisements, the dominance of Google has to be assessed in relation to this additional class of competitors, and market shares are going to be lower. Based on Commission decisions, the definition of the relevant markets will be likely done along national or linguistic borders. In addition to that, detailed information on the share of revenues from high-profiled advertising will need to be retrieved from firms and is not publicly available. Whether Google will be dominant in this market is still an open question: many other players will be included, but Google will likely dwarf their advertising revenues. Only as a matter of comparison, in 2011 Google advertising revenues amount

[35] As argued by the European Commission in the Google/DoubleClick Decision, §§11.-13

to $36.5 billion, whilst Facebook advertising revenues to $3.2 billion.[36]

It is worth noting that one of the sides of the "former" two-sided market, that is the market for search, can no longer be construed as a market in which Google sells its services, as it becomes the input market in which end users and large intermediaries supply personal information to Google. As it will be shown below, this does not imply that Google's conduct on this market is not relevant from a completion law perspective, but the analysis becomes radically different. Countervailing buyer power, sometimes an UFO in antitrust analyses, must come into play.

**Exclusive Agreements for Traffic Acquisitions**

Google has been accused[37] to have "entered into exclusive syndication agreements with certain high-traffic online publishers, foreclosing access by competitors" (Manne and Wright 2011). In my model, these are not exclusive distribution agreements for search services, but exclusive purchasing agreements for users' personal information, large websites, software producers and OEMs being the suppliers and Google the retailer.

At first glance several specific abuses could be at least in theory imputed to Google:

1. raising rivals' costs, by preventing them to achieve the efficient scale;
2. exclusive dealing in force of the exclusivity clause (and here the duration of the contract and the analysis of the barriers to entry in the supply market would be crucial);
3. predatory pricing or, conversely, predatory bidding, if Google offered such a high price to acquire traffic that other as-efficient competitors could not replicate its bid.

These agreements allegedly have a foreclosing effect, and possibly also foreclosing intent, because they deprive competitors from

[36] Google financial statement for 2011; Facebook Prospectus for the Initial Public Offering.

[37] TradeComet.Com LLC v. Google, Inc., 693 F. Supp. 2d 370 (S.D.N.Y. 2009) (No. 09Civ.1400(SHS))

accessing inputs and reaching an efficient scale (Evans 2008b; Pavel 2009). Although the concept of dominant position may be applied also to the buyer's – other than the supplier's – position, the case law in this field is quite limited. The relevant U.S. Supreme Court case is Weyerhaeuser,[38] whilst, to my knowledge, the Court of Justice of the European Union never dealt with a buyer's dominance case.

In the Weyerhauser case, the Supreme Court stressed the similarities between predatory pricing and bidding, although acknowledging that the latter present lower risks for end-consumers. Therefore, the predatory pricing test needs to be applied. The test has two prongs: in the first prong, the plaintiff needs to prove that predatory bidding raised costs so much that the firm is operating at a loss. In the second prongs, the plaintiff needs to prove that there is a dangerous probability of recouping.

Commentators raised two main issues concerning this judgment. First of all, unlike predatory pricing, predatory bidding presents a lower risk of chilling price competition, and therefore the test should be not as strict. Secondly, prohibition of predatory bidding allegedly protects competitors and suppliers rather than consumers, which may not be hurt by the conduct. This would be especially true if the dominant buyer did not enjoy downstream market power (Kirkwood 2005; Salop 2005; Noll 2005; Zerbe 2005; Levin 2007; Rosch 2007; Werden 2007).

Although there are no precedents, I claim that predatory bidding would be sanctioned under EU Competition Law. First of all, EU Competition law is more severe against predatory pricing, whereas there is no need to prove the probability (let alone a dangerous probability) of recouping when the price is lower than the average variable costs. Secondly, protection of the competitive process as a whole, and thereby of competitors, is less of a hectic debate on this side of Atlantic.

Nevertheless, if the market is constructed as a CUNE-vertical chain, it may be simpler to resort to the category of vertical agreements of exclusive distributions than to involve an analysis of a firm dominant

[38] Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co. - 05-381 (2007),

on the buyer side.[39] Since under the EU law, after the recent reform, both supplier's and buyer's market power has become relevant, as long as Google's share in the market for users' personal information is higher than 30%, and there are strong indications that this is the case, these agreements would not be covered by the block exemption[40] provided by Regulation 330/2010.[41] Importantly, it would be no longer relevant to demonstrate that Google holds a dominant position. Google would be barred from entering into these agreements if their anti-competitive effects were proved by the European Commission, and if the defendant could not justify them in terms of efficiency under the four cumulative conditions set out in art. 101.3 TFEU.

**Manipulation of Search Results**

Google has been allegedly manipulating its search results (Manne and Wright 2011; Cave and Williams 2011; Balto 2011; Van Loon 2012) with two aims: promoting its own-produced content; and demoting its competitors' content, especially in the case of vertical search engines.

This seems to me the most difficult allegation to be framed as an antitrust violation. First of all, it is difficult to distinguish biased search from unbiased (or low-quality) results. Secondly, Google has its own good reasons to modify its search algorithms to prevent frauds, and it would be very difficult to distinguish "good" from "bad" manipulation (Grimmelmann 2007; Balto 2012).

Beyond a difficult probation, the most important issue is whether inclusion of certain websites in the search results creates an economic or legal relation between the search engine and the website, or not. I am inclined to consider it not to be the case, and to stress the content

[39] "In an exclusive distribution agreement, the supplier agrees to sell its products to only one distributor for resale" (Commision 2010).

[40] The application of the block exemption would also be prevented by the inclusion of any of the so-called hardcore restrictions (Commission 2010).

[41] Commission Regulation (EU) No 330/2010 of 20 April 2010 on the application of Article 101(3) of the Treaty on the Functioning of the European Union to categories of vertical agreements and concerted practices. OJ L 102, 23.4.2010, p. 1–7

(informational) aspect of this relation (Urso 2011). The content-informational aspect is so prevalent that in the US the doctrine of free speech has even been invoked to defend the freedom to provide subjective search results (Grimmelmann 2007). Besides, the FTC actually privileged this aspect when initiating an investigation on search manipulation practices on the basis of Section 5 of the FTC act, which forbids unfair and deceptive competition, and not of the Sherman Act (Renda 2012).

Considering Google as a retailer of personal information excludes the construction of a relevant market in which it sells search results, and therefore helps in clarifying why this conduct can hardly be considered a violation of any antitrust rule. To draw an analogy, in other media markets Competition Authorities cannot probe TV channels for the content provided to viewers, as much as it would be very difficult for a restaurant owner to claim antitrust violations in case he feels defrauded by the non-inclusion or the bad review published in a guide. Possibly, these allegations could fall under the prohibition of unfair competition rather than under antitrust law.

The controversy of applying competition law to search results appears clearly from a recent French judgment.[42] Google was accused of abusing its dominant position in the search market by leveraging into the online map service market, where it offered Google Maps at a 0 price, therefore eradicating competitors via predatory prices. The Court confirmed the accusation and imposed a fine of €500,000 on Google. The judgment is at best controversial, especially in the definition of the relevant markets. In particular, the judgment only defines linked markets, "*marches connexes*", never clarifying what is the rather convoluted relationship between the market in which Google is dominant and the market in which the alleged abuse takes place. It does not refer to two-sided market analysis, nor to any other economic model (Pardolesi and Urso 2012; Fleischer and Smith 2012).

There is no need to resort to the two-sided market toolbox to support the legitimacy of this Google conduct. The CUNE model excludes the

[42] Tribunal de Commerce De Paris - 15ème Chambre (31/1/2012). Société Bottin Cartographes c. Société Google France e Société Google, Inc.

relevance of the content of search results for competition law. Search results are not anymore the object traded in a relevant market, but constitute the in-kind payment for end users in exchange for personal information. If searchers could trade their personal information with another search engine which delivered a higher utility (i.e. a higher and non-biased search quality), they would have every incentive to do so, as much as workers can leave a firm if it offers lower wages than its competitors.

It has already been stressed that Google is not Microsoft: it cannot rely on network externalities, both intra- and inter-side, to lock in consumers, and this ensures a better alignment of Google's and consumers incentives. For this reason, Google has strong incentives not to dilute the quality of its search results - at least to a certain extent - because users could migrate, therefore shrinking ads revenues (Balto 2012). Finally, I tend to consider search results as experience rather than credence goods (unlike Pavel 2009), since searchers can check whether the links provided take to the information/transaction they were looking for. Therefore, searchers can assess the quality of search results when deciding in which search engine they input their next query.

That said, I am aware that search engines are nowadays the gateway to the Internet. Websites "do not exist" if they are not indexed by search engines. I am also aware that Google in this moment holds the key of this gateway, and that no competitor seems to threaten its position in the medium term. Therefore, there may be more than solid ground to require some form of "search neutrality" and the prohibition to promote or demote certain content for illegitimate reasons. In addition to strong economic considerations, other values such as plurality in the Internet are at stake here. Nevertheless, I would suggest that these practices call for sectoral regulation rather than antitrust law. I am also aware that the technical limitations may render such a regulation impracticable.

**Allegations in the downstream market**

Google has been accused to i) restrict data portability for advertisers between different advertising platforms; ii) lower the quality score / increase the reserve price for competitors, therefore increasing their

CPC (Manne and Wright 2011; Cave and Williams 2011; Balto 2011; Van Loon 2012).

Assuming that Google has a dominant position in the market for personal information, restrictions of data portability is a restriction to interoperability. If strong enough, these restrictions could lead to integrate an exclusivity clause, and therefore exclusive dealing. At first glance, I feel that authorities will have a long way to go to demonstrate unlawfulness, and that these restrictions need to be very severe to integrate an abusive behaviour, but I defer to further research on this issue as soon as the allegations become public.

As for manipulation of quality score/reserve price for advertising competitors, this fact can be constructed as a discrimination: Google would be applying different prices for its search advertisements depending on whether a customer is a competitor or not. The difficulty here would be to prove the abuse, since discrimination, as other exploitative abuses, often falls in a grey area between legitimate subjective decisions on the price, which is the key variable from which competition authorities usually voluntarily abstain, and anticompetitive behaviours (Frignani and Pardolesi 2006; Osti 2007). Grey is even greyer for search engines, as it would be incredibly difficult to tell whether a line of code of the algorithm is discriminatory or it is just enhancing the quality of search. The task of Competition Authorities in proving the abuse would be much easier if Google refused access to its advertising platform to its competitors, or asked for a price so high which could amount to a refusal. Nevertheless, this seems not to be the case. Again, I defer to further research on this issue as soon as the allegations become public.

**Degradations of Access to Owned Content**

In its complaint, Microsoft accused Google to degrade Bing's access to YouTube.[43] Although the technicalities of the allegations are not

[43] Cf. http://www.telegraph.co.uk/technology/news/8423490/Why-Microsoft-filed-a-formal-complaint-about-Google-and-the-search-giants-reponse.html (last accessed on 30th March 2012)

yet known, a quick check of YouTube's Robots.txt file shows that the Google search engine has a larger access to YouTube's resources.[44]

This is the only allegation which is independent on whether the Google platform is considered a two-sided market or a CUNE-vertical chain, as it is factually perpetrated by another entity, YouTube, a video website owned by Google since 2006. It is impossible to know whether this degradation amounts to a full refusal to deal, i.e. is severe enough to prevent Bing to *de facto* index YouTube's content. If this were not the case, this practice would still amount to raising rival's costs. It could be the case that YouTube is considered as an essential facility, given that it is one of the most visited websites (Tarantino 2011). Differently from the other conducts, it is difficult to see in this case any legitimate business justification for such behaviour: by degrading indexation, YouTube, and therefore Google which owns it, is intentionally losing traffic without any direct benefit.

## 6 Conclusions

Convincing the reader that Google, and therefore any media market, is not a two-sided market is a *vaste programme*, as general de Gaulle would say. Having the reader making an additional step, that is considering Google as a retailer of personal information rather than a media platform, seems even harder. It would be indeed necessary to give up the mainstream opinion, supported both by scholars and competition authorities, and the two-sided market toolbox. Nevertheless, I hope to have instilled a sprinkle of doubt in the readers, by showing what are the reasons to come along this way, and the benefits brought by this theorisation in terms of a better understanding and explanation of firms' behaviours and, consequently, of the antitrust allegations.

[44] Robots.txt files are machine-readable files which make known to search engine crawlers which parts of the website are indexable and which are not. All websites use robots.txt instruction, and it is free to decide which part of the website can be indexed by which search engine. Cf. www.youtube.com/robots.txt (last accessed on 30th March 2012).

Firstly, it has been that the economic literature on two-sided markets has not yet drawn clear boundaries between what is a two-sided market and what is not. The current definition, as many scholars already claimed, tends to over-inclusiveness, and to apply two-sided logic to one-sided markets. For this reason, I propose a new definition on what is a two-sided market, relying on two criteria: i) the uniqueness of the transaction among two distinct groups of users; ii) the reciprocal flow of inter-side positive network externalities. This definition leaves out media markets, which, as other scholars had already realised, are *sui generis* (non-transaction) two-sided markets.

Then, I have analysed how the Google platform does not possess the features of a canonical two-sided market. Under the definition proposed, the Google platform is not a two-sided market because: i) two transactions take place on the Google platform, that is searchers demanding search results and advertisers demanding access to well-profiled users; ii) externalities flow only from the numerosity of searchers to advertisers, and not the other way round.

That said, I realise that the Google platform has its own peculiarities, in particular the Constant Unidirectional Network Externalities which run from the numerosity of the searchers to advertisers. Therefore, I propose a theorisation in which Google is considered as the pivotal element of a CUNE-value chain. The platform buys personal information from end users and other IT industry players, and process it to match ads and users. Search results are the in-kind payment which Google provides to its suppliers (together with monetary payments for large "wholesalers"). Constant Unidirectional Network Externalities can be modelled as the advertisers having an infinitely elastic demand for audience, which is actually what happens in the online advertising industry.

I used this model to analyse the allegations against Google. To a certain extent, considering the Google platform as a CUNE-value chain rather than a two-sided market has deep implications on the antitrust analysis. First of all, the dominance of Google in the market for personal information should be assessed against other competitors, such as social networks. Indeed, social networks do what Google does: get users' personal information and monetise it

via advertisements. If we keep our focus on the markets for search and search advertisement, which are the two sides of the Google platform, we could miss this competitive relationship.

Then, most of the competition allegations can be constructed differently than in a two-sided market. The section devoted to the antitrust analysis is only a long sketch, as more in-depth and target research would be needed, ideally if and when the European Commission issues its Statement of Objections. Nevertheless, it is already possible to see that, at least in one case (traffic acquisition agreements), the vertical chain theorisation allows to verify the lawfulness of the conduct without having to demonstrate Google's dominance. As for search manipulation, the new theoretical framework explains why certain conducts would need specific regulation rather than antitrust enforcement.

This paper was born out of the feeling that the literature on two-sided markets was not the proper tool to analyse the Google case. Therefore, I tried to leave the old road to see the Google case from another perspective. Without claiming for the exhaustiveness or absoluteness of this perspective, I hope that it can help to better understand the peculiarities of the Google platform and to push a bit forward the daunting task that Competition Authorities across the world are and will be facing in disentangling this dilemma.

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# THE LAW AND ECONOMICS OF INTERMEDIARIES OF PERSONAL INFORMATION

Giacomo Luchetta*

**Abstract**

This paper explores a class of firms: the intermediaries of personal information. In the economics of personal information, scarcity is no longer the only, and foremost, determinant of value. The most important determinant of value becomes connection. Adapting what Gervais (2012) claims to be the first law of an information-flooded cloud-modelled economy, value is not derived from scarcity but rather from the fact that those who value it most will find it. Personal information is the raw material to create connections. Intermediaries collect personal information in exchange for goods or services, regardless of whether they actually need that information to perform their main activity, and use this information to connect other goods and services with the users who value them most, e.g. via personalisation or targeted advertising. Many firms in many different sectors are, or could become, intermediaries of personal information, from Google to supermarkets, from telecom operators to insurance companies.

The descriptive analysis of this industry has consequences in terms of business model and regulatory approach. As for the former, it is worth exploring the conditions for which a firm could profitably become an intermediary of personal information and thereby exploit untapped resources for revenue generation. As for the latter, an imperfect understanding of the economics of personal information creates the risk for misaligned norms, and therefore for an uneven competition.

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# 1 Introduction

I was writing a chapter of my PhD thesis on Google business model when I received a not-so-longed-for letter at home, letting me know that my car insurance was about to expire. So I went to my insurance dealer to hear the ominous amount that I was due to pay. I weakly resisted the quasi-robbery by renouncing to some benefits, and eventually accepted the final deal. Once agreed on the conditions, I had to deliver (or re-confirm) a bulk of personal information to finalise the contract. The reader will be surely familiar with that. Sex, age, place of residence, domicile, brand and model of car, equipments, mileage so far, expected mileage per year and so on and so forth. Then, of course, my insurance company knows even more about me. From my event history, it knows that I use my car both in Brussels and Italy. It knows that I am not a mechanical guy, as I call for the insurance assistance whenever I have a problem, at least when I am not around my hometown. It knows that I am willing to resort to legal actions if needed, as I sued a Belgian insurance for refusing to pay damages. Not all this information is strictly necessary for the insurance company. It is used to pool and segregate risks, to **match** the right premium to my risk profile and my event history. This data allows the insurance company to do a *better*, more tailored and more efficient job.

My insurance company, I realised, is sitting on a mine of personal information which is not fully monetised. That's a pity, as this could be another source of revenues which in turn could maybe, very maybe, lower the price of my car policy. An insurance company could sell targeted ads for mechanic shops, and I would actually appreciate to have a hint about where to go in Brussels in case of problems. It could sell targeted ads for car dealers, knowing which cars I drove so far, my equipments, my mileage and so on and so forth. It could sell targeted ads for insurance-specialised lawyers.[1]

[1] This paper deals with "positive matching" between users and goods or services. I am aware that the same information could be used to my detriment. E.g., it could be communicated to the Belgian government for registration and tax purposes; or to other insurance companies to raise my premium because I am a legal troublemaker. Still, the focus of this paper is in exploiting matches that

After signing the check, I went home and texted my girlfriend about how much I had to pay, the lack of any meaningful competition in the Italian insurance market, tax increase and so on. My telephone company, had it accessed my SMS, would have acquired a valuable information, which could have used to sell targeted ads to other insurance companies. Had I written an email through my Gmail account rather than an SMS, Google would have accessed that information and actually used to deliver targeted ads. Why such a different use of personal information across companies? Is it only a business model choice? Or are companies in different sectors regulated differently from the point of view of use of personal information? And which companies are better suited, from a business and regulatory perspective, to profit from personal information, and why?

Begging the reader's pardon for such a digressive introduction, I would like now to provide a more formal map to **the structure of the paper**. The independent variable of this research is the intermediation of personal information. It is claimed that externalities and irrational choice patterns in the "market for privacy" may justify the economic regulation of the intermediation of personal information. The market for privacy is organised along vertical value chains in which intermediaries of personal information play the pivotal role. The intermediaries operate as retailers of personal information, buying information from users and employing it to match the same users with goods and services. To compare units which are similar from the point of view of how they intermediate personal information, a taxonomy along five dimensions is introduced. Once the "left side" of the logical relation is set, the economic regulation of personal information and privacy, the dependent variable, is brought under the spotlight. This paper aims at answering whether the economic regulation of personal information and privacy is currently treating similar companies in a consistent way or not. I claim that both privacy regulation and

create value. How to counter the risk of detrimental matching is a topic worth the same, if not more, attention, but which would take me out of the current research. Having an agnostic stance, in this paper I never intend to argue for a laxer or stricter regulation of personal information, only for a more consistent one.

competition policy currently neglect the intermediaries of personal information as such, and thereby fail to provide a level playing-field. The same investigation is applied to cloud computing providers, to verify whether the current EU legal framework allows them to become, as predicted, the new class of "dominant" intermediaries.

As shortly sketched above, intermediaries of personal information harvest personal information from users and monetise this information matching users with their own or third-party goods and services. Matching, also called "behavioural targeting" in the online ecosystem (ENISA 2012), takes place e.g. through personalisation, recommendations (Linden *et al.* 2003), targeted advertising (OFT 2010), or dedicated deals. Many firms in many different sectors are intermediaries of personal information. The king is obviously Google with its portfolio of services. Facebook and any social networks are major players too. But many other firms are or at least could be intermediaries of personal information: online sellers, supermarkets offering loyalty programmes, email providers, airlines with or without offering fidelity cards, telecom operators, media companies, financial institutions and insurance companies. They all collect, track, harvest personal information and generate value out of it through matching consumers and producers.

Raising revenues through matching users and consumers is neither revolutionary nor the only commercial reason to exploit personal information. It has been claimed that firms would have exploited personal information for price discrimination (Odlyzko 2003), although this possibility has not materialised so far. For the future, another promising avenue of exploitation seems to be predictive analytics.[2] Other uses include e-commerce safety, or enhanced business processes (Acquisti 2010; BCG 2012). Nevertheless, so far matching, especially through targeted ads, is the most widespread way to monetise personal information, and this will be the focus of this paper.

[2] For a panoramic view of this issue, cf. ftp://129.35.224.15/software/kr/data/pdf/forpred.pdf (last accessed on December 2012).

In the current socio-technical environment, matching has become of paramount importance. For intermediaries of personal information, scarcity is no longer the only, or most important, determinant of value. Rather, *connection* is. Adapting what Gervais (2012) claims to be the first law of an information-flooded cloud-modelled economy, *value is not derived from scarcity but rather from the fact that those who value it most will find it*. If this holds, prices, the Hayekian transmitter of information about scarcity, no longer suffice. Connections crate value and personal information is the raw material to create connections.

To be successful, it is no longer necessary for a mechanical shop to be the only one in town able to fix Volkswagen Golfs. The succession of Kondratiev waves made scarcity much less relevant than before. For three centuries space has been undergoing progressive miniaturisation; for at least a century industrial standardization has been becoming the norm; and for the last two decades Internet has been spawning an incredible amount of information, information which can be processed via ubiquitous computers. Uniqueness or scarcity became close to impossible for a vast range of product and services.[3] Rather than upon scarcity, value can be created connecting producers with users, e.g. by letting know all possessors of a Golf that there is a specialized technician nearby. To do so, the technician needs to know who the possessors of a Volkswagen Golf in town are. Personal information creates connections.

Intermediaries are the key actors in the economy of personal information, rightly because they have the capacity to create connectivity (Picker 2009, Gervais 2012). Intermediaries collect personal information in exchange for a good or service, regardless of whether they actually need that information to perform their main activity, and use this information to connect other goods and services with the users who value them most. The connection can take different shapes: it can be Amazon suggestions, Groupon daily mails or Google's targeted ads.

[3] Interestingly, in the developing economies, where these three factors have not played the same prominent role, the importance of scarcity would be higher. Being the only mechanic shop in Lusaka able to repair a Volkswagen Golf and possessing the specific spare parts does create value.

Intermediaries are worth exploring on two levels of analysis: their business model and the economic regulation to which they are subject. As for business model analysis, personal information economics is a possible theory for firm behaviours, and consequently for business strategies (mainly in the online sector, but also for brick and mortar companies). Scarcity and price still lead the markets in many sectors. Scarcity, or uniqueness, push consumers to pay a premium for certain products/services/brands, as Apple masterly does. And many companies conquer market shares through a low-price strategy, Ryanair or H&M to name a couple. Still, personal information-based firms are playing a bigger and bigger role in our economy, and it is therefore a territory worth exploring. Most importantly, it is worth exploring the conditions for which a firm could profitably become an intermediary of personal information and thereby exploit untapped resources for revenue generation. Indeed, one of the most successful low-cost companies, Ryanair, raises revenues also by matching customers with car rentals, suitcase manufacturers, and hotels.

Then, from a law and economics perspective, it is worth exploring the implications for economic regulation. I would claim that an imperfect understanding of the economics of personal information creates the risk for misaligned norms. In particular, I fear that different categories of intermediates currently face different regulatory frameworks, because norms are devised over other parameters. For example, a telecom operator may face more difficulties in accessing its customers' communication compared to Google, although in both cases they are trying to access the same kind of information with similar methods. Besides, as far as competition policy is concerned, "an uneven playing field – allowing one firm to use the information that it sees while blocking others from doing the same thing – crates market power through limiting competition" (Picker 2008).

Finally, one Section is devoted to those which are predicted to be the most important intermediaries of the near future: providers of cloud computing. As Picker (2008, 2009) put clearly, cloud providers are the "new web intermediaries at the heart of Web 2.0 hav[ing] access to an enormous datastream about their users." Although I embrace

most of his seminal analysis, ads-based model is not the only, and for some services not the dominant, business model for cloud computing. A closer look to these intermediaries will be a ground for applying the theoretical framework reviewed and constructed earlier in this article**.**

Before the usual scrolling of the paper chapter-by-chapter, I would like to clarify a last point. First, this is a positive-science descriptive paper. No normative judgments on whether more and deeper harvesting and processing of personal information is or is not desirable should be inferred. I personally have a mixed opinion on that. This position may seem unrealistic, but it is necessary to this first attempt to provide an analysis of this class of firms. Of course, further research will need to relax this assumption, as usual, and integrate the dark side of targeted ads. In any case, the assessment of the consequences due to the unprecedented use of personal information in the age of computer networks deserves much deeper reflections, such as Lessig's (2006) or Kang's (1998), than my quick walk through existing and possible business models and regulations of intermediaries of personal information.

And now the usual scrolling. Section 2 deals with the microeconomics of personal information. First, the behaviour of consumers in the "market for privacy", i.e. consumers' choices over privacy attributes, is reviewed. Then, the market for intermediation of personal information is described as a value chain in which intermediaries operate as retailers of personal information, buying information from users and employing it to match the same users with goods and services. Section 3 provides a taxonomy of intermediaries along five dimensions. In Section 4 two example of economic regulation of intermediaries of personal information are discussed: whether the regulation of privacy and competition policy in the EU creates a level playing-field. Section 5 assesses the same question with respect to the EU legal privacy legal framework for cloud computing providers. Section 6 briefly concludes.

# 2 Microeconomics of Personal Information

In this section, the microeconomics of personal information will be explored in some details. Firstly, by reviewing the existing stream of literature, I will discuss how individual decision-makers behave when confronted with choices about disclosure of personal data. It will be shown that individuals are quite erratic in matching preferences and behaviours with respect to personal information. The inconsistencies reported have consequences in terms of the economic analysis of different policies. Then, the market for personal information, i.e. the theoretical framework in which intermediaries operate by collecting and selling information, will be analysed. I try to conceptualise this market without resorting to a two-sided structure, analogously but what I did to define the relevant market of a specific intermediary, Google (Luchetta 2012).

## *2.1 The Consumer-Side: Personal Information Decision-Making*

The economics of privacy analyses the behaviour of individual decision-makers when choosing whether to disclose or not personal information, and its policy implications.

First, some definitional fuss is required. Privacy is a multidimensional, as privacy protects different aspects of life. Hirshleifer's (1980) economic analysis contends that privacy can be split into three elements: secrecy, that is the right to keep information private; autonomy, that is the freedom from societal constrains and observation within one's own sphere; and seclusion, that is the right to be left alone. The extensive legal and philosophical review by Solove (2002) juxtaposes three additional aspects to Hirshleifer's ones: limited access to the self; control over personal information; and intimacy. Kang (1998) discusses privacy in terms of shielding one's own physical space; preserving one's own ability to make choice; and controlling the processing of information about oneself. This article focuses on the control over personal information, in Solove and Kang's meaning.

Still the right to control over his own personal information not only deals with market-based and thereby voluntary disclosure. It also deals with the limitation of the right of the government or the judicature to access personal information, i.e. to coercive disclosure.

The focus is here restricted to voluntary disclosure of personal information. Finally, each legal system must define what information is personal information. For the moment, I do not need to be more specific, and this section refers to all information "about himself" submitted by a user to a private intermediary, regardless of whether they would qualify as personal data under any privacy norm. It is worth mentioning that under EU law, personal information is any piece of information related to an identified or identifiable natural person.[4]

A review of the economics of privacy needs to start from the contributions of the Chicago school (Posner 1979, Stigler 1980). Triggered from a new privacy statute in the USA, these scholars had a narrow focus on assessing the efficiency and the effectiveness of the individuals' right not to disclose certain information. They concluded that any regulation allowing not to disclose personal information in market transactions is ineffective and inefficient from a societal point of view. Absent legal constraints, rational decision-makers would optimally choose both how much information disclose and how much to invest in information discovery. If only the informational aspect of privacy is taken into account, there is nothing new under the sun. Information lubricates the market,[5] and withholding personal information has no better effects than e.g. allowing sellers to conceal product defects.

Chicagoans' original but narrow framing misses at least two important points. First, individuals do benefit from sharing certain personal information, but full disclosure is not in their best interest. A consumers "will rationally want certain kind of information about

[4] Art. 2 of Directive 95/46/EC of the European Parliament and of the Council on the protection of individuals with regard to the processing of personal data and on the free movement of such data. OJ L 281/31 23.11.1995. The new Commission proposal for a regulation on data protection changes the definition, possibly enlarging the class of personal information. Cf. Art. 4 of the Proposal for a Regulation of the European Parliament and of the Council on the protection of individuals with regard to the processing of personal data and on the free movement of such data (General Data Protection Regulation). Regulation of the European Parliament and Of the Council. COM(2012)11, Brussels, 25/1/2012.

[5] Please remember that in the same decade the seminal articles on asymmetric information had been published.

themselves to be available to producers", as "the transaction is made more efficient if detailed information about the consumer's tastes is available", but at the same time he would rationally conceal some data, as "he doesn't want the seller to know how much he is willing to pay" (Varian 1996).

Secondly, and possibly most importantly, if the focus is widened from a single transaction to the whole set of transactions with different counterparts, the analysis leads to very different results. Transaction after transaction, disclosure after disclosure, the individual:

> *loses control of the personal information, and that information multiplies, propagates and persists for unpredictable span of time [...]. Hence, the negative utility coming from future potential misuses of offline personal information is a random shock practically impossible to calculate.* (Acquisti 2004)

Through a wit metaphor, disclosing data is signing a blank check: it may never come back to the consumer, or it may come back with an arbitrary low or high figure on it (Acquisti 2010).

Recognising that disclosing personal information in a certain transaction may result in costs for the data subject unrelated to that transaction means that the exchange of personal information is subject to a negative externality. More precisely, companies collecting personal data do not internalise future expected costs borne by individuals (Huang 1998; Lessig 2006). This externality implies that, compared to the societal optimum, individuals may over-disclose information and companies may over-invest in collecting information.

Later contributions which complexify the previous analysis introducing second-best scenarios (Hermarlin and Katz 2006) showed that disclosure of personal information may both increase and decrease overall welfare, depending on the initial conditions. Although the sign of the efficiency effect is unclear, privacy norms will always result in distributional effects.

The likelihood and amount of expected losses for data subjects had been skyrocketed by IT technologies. Personal data are nowadays collected, transferred and searched at a pace which was unthinkable before, creating additional and more dangerous threats to one's own sphere. Namely, IT technologies stretch the possible future state of

the worlds along two dimensions: probability and expected damages. We are faced with high-probability negligible-cost risks, such as spam; and high-cost low-probability risks, such as identity theft (Acquisti 2010; Brown 2010; LRDP Kantor 2010).

High-cost low-probability risks can induce erratic and "irrational" choice patterns, as demonstrated by behavioural economists in many fields (Kahneman 2011). Numerous authors (Acquisti 2004; Acquisti and Grossklags 2004; Berendt *et al.* 2005; Hui and Png 2006; Compañó and Lusoli 2010, Jolls 2010) show indeed that there are inconsistencies between individuals' preferences and actual information disclosure. Acquisti and Gross (2006) show that while privacy attitudes matter in the decision to whether to join Facebook or not – but only for the age cohorts and social groups for which Facebook is not a must-have platform – the amount of information actually disclosed by Facebook users is uncorrelated with their preferences for privacy.

In general, privacy policies and statements are likely neglected by both privacy-savvy and privacy-reckless consumers. Very small, even nihil, rewards suffice for spurring disclosure. Acquisti and Grossklags (2004) identify several reasons to explain inconsistencies, such as: limited information on privacy issues; the complexity to compare certain upfront costs and uncertain future benefits; bounded rationality; psychological biases, in particular limited self-control, hyperbolic discounting and underinsurance. Other inconsistencies noticed in privacy behaviours consist of the endowment effects, significantly stronger than for average goods, non-normal distributions of preferences, and order effects (Acquisti *et al.* 2009). It is interesting to see how these features match Sunstein and Thaler's (2008) criteria to identify when rational actors may fail to take self-maximising decisions; therefore external intervention, such as some form of nudging, may be justified.

Taken the behavioural analysis into account, it is quite difficult to predict the effect of different privacy policies. Acquisti (2010) concluded that "the market equilibrium will tend *not* to afford privacy protection to individuals", and this can be a ground for privacy regulation. The empirical analysis shows (Bonneau and Preisbuch 2010) that the plethora of different privacy policies

proposed by social networks make hardly any difference in terms of user behaviours Certainly, claims that opt-in and opt-out policies make no difference to the user (as in Lacker 2002) can be rejected. Using the *homo oeconomicus* as the role-model for privacy economics would indeed prevent understanding the much ado about default settings, which indeed spark fire among online companies. For example, while in principle online advertisers do not oppose the Do Not Track IP header – which, in short, prevents websites from tracking user behaviours – they did fiercely oppose Microsoft decision to have Do Not Track on by default on Internet Explorer 10.[6] Had we been rational in our privacy decisions, online advertisers would not go to war for the default option.

Even assigning property rights on private information to individuals is considered at risk of falling short of ensuring an effective privacy protection, especially if bounded consumers' rationality is accounted for (Varian 1996; Schwartz 2000; Hui and Png 2006; Lessig 2006; Prins 2006). Indeed, under EU law, personal data are protected by a property rule, in Calabresi and Melamed's (1972) sense: the right to data collection and processing can be acquired by the counterpart only upon the user's consent.[7] But even under a property rule, intermediaries face no real constraints in obtaining personal information from users.

Lastly, the economic analysis of privacy norms should not forget that regulation may have an expressive function, regardless of its effectiveness, thereby raising users' awareness about their privacy rights. With respect to this function, one may argue that property rights are more "expressive" than regulatory norms (Lessig 2006), or, rather the opposite, that a human right-based regime will reduce the

[6] See The New York Times 'Do Not Track? Advertisers Say "Don't Tread on Us"', published on 13 October 2012. Available at: http://www.nytimes.com/2012/10/14/technology/do-not-track-movement-is-drawing-advertisers-fire.html (last retrieved on October 2012).

[7] I am not claiming that the EU approach is property-based. Clearly, it is human right- (or dignity-) based. Nevertheless, in the strictest technical meaning, art. 7 of the EU Privacy Directive (*infra* note 37) confers the user a property rule-type of protection for collection and processing of personal data. See Kang and Buchner (2004) for a wit account of the similarities between a consent-based or property-based regime; and Prins (2006) for the similarities of a property-based regime and the current EU legal framework.

push for trading and disclosing personal data (Kang and Buchner 2004). Still, this expressive function of law may have an impact on user attitudes, but no factual relevance has been shown in the literature as far as actual behaviours are concerned.

In conclusion, most users will disclose most information in most cases, adopting no or low privacy protections, regardless of whether this is efficient from a static, dynamic, individual or societal point of view.[8] This is due to both negative externalities and inconsistent behaviours. Both grounds can justify, and consequently should shape, pubic intervention to protect privacy.

### 2.2 *The Supply-Side: the Market Structure for Personal Information*

The markets in which intermediaries operate can be framed like a retail value chain, namely retailers of personal information. Intermediaries operate in an upstream market, collecting personal information from users, and in a downstream market, selling "matching" (broadly speaking: ads, suggestions, emails etc.) between the "right" users and goods and services to advertisers.

Users enter into contact, and often into a contract, with the intermediary to obtain goods or services. When this happens, intermediaries acquire users' personal information. In some cases, provision personal information is a *condicio sine qua non* for the performance of the contract. For example, buying books on Amazon requires delivering personal data for registration and about one's own purchase history (as purchases take place). In some cases, users can decide whether submitting some of the data requested. For example, to use Gmail, users have to submit a set of personal information for the registration of a Google account, but can refuse to allow indexation of their email content. Finally, in some cases users are free to choose whether to disclose personal information at all. For example, individuals can shop in supermarkets with or without subscribing to its loyalty programme.

[8] Sure, there is a non-determined quota of non-users, i.e. of individuals deciding not to enter into a transaction with the intermediary because of privacy concerns.

The intermediary offers his goods and services "in exchange" of users' personal information. In some cases, personal information is all that the intermediary asks. E.g. most email providers deliver free services in exchange of access to personal information. In other cases, submission of personal information allows the users to enjoy additional benefits, e.g. frequent flyer programmes, or lower prices, e.g. dedicated discounts in supermarkets.

Whichever benefit is traded for personal information, consumers' data is an asset, sometimes the core asset, owned by the intermediary of personal information (Acquisti 2010). The consumer itself, or more precisely his/her personal information, becomes the product. Indeed, intermediaries bear a cost to harvest personal information. In other words, collection of personal information represents a cost for the intermediary, as the acquisition of any other input would.

Based on the personal information retrieved, intermediaries build user profiles and use them as a mechanism to trigger matching, e.g. via targeted advertisements. Profiling users and connecting them with advertisements can either be done by the intermediary itself, that is "first-party advertising", or be outsourced to specialised firms, such as advertising networks, that is "third-party advertising"; third-party ad networks collect data from several websites and merge them into a single user profile (FTC 2009; Art29WP 2010; Beales 2010; OFT 2010; ENISA 2012).[9] Delivery of the advertisement can take place either alongside of the delivery of intermediary's goods and services, e.g. Google search or Facebook, on a dedicated *medium*, such as Groupon emails or supermarket snail mails, or on the *medium* of another entity, such as in the case of advertising networks.

On the downstream market, advertisers can be constructed as buyers of access to personal information-based profiles, which are used to deliver targeted messages. In most cases, personal information does not leave either the intermediary, in case of first-party advertising, or

[9] For this reason, third-party advertising is considered potentially more dangerous for users' privacy. Indeed, in first-party advertising personal information does not ever leave the intermediary; on the contrary in third-party networks data is collected by several websites/publishers and then transferred to the ad platform, which merges it into a single user profile. This user profile is much "deeper" than in case of first-party ads, and mixes information from various sources.

the advertising network, in case of third-party.[10] Advertisers just buy the right to deliver an ad to certain class of profiled users. For example, a mechanic shop can asks Facebook to deliver an ad to all users who like Volkswagen and live in Brussels, but would not know the identities of targeted individuals.

Advertisers can buy ads based on two pricing schemes: cost per impression or cost per click (Ratliff and Rubinfeld 2010). The former scheme is the most widespread across old media: advertisers pay a fixed price, usually expressed per thousand or million viewers (Cost per Million - CPM), to reach a certain amount of audience. Cost per click (CPC) is typical of online ads. In this case, advertisers pay a price each time a viewer clicks on the ads, thereby accessing the advertiser's premises, i.e. its website. The CPC scheme is replicated, to some extent, also on the offline world. For example, clubs use PRs as a marketing strategy. PRs give potential customers a coupon, which is uniquely signed. The club then pays each PR based on the amount of customers who actually accessed its premise.

The two schemes are not *ex ante* Pareto-superior one to the other for advertisers. Assuming that, regardless of the pricing scheme, the same share of customers accessing the advertiser's premises subsequently enters into a transaction, an advertiser is indifferent when

$$\alpha * CPM = CPC$$

where $\alpha$ is the share of ad viewers accessing the advertiser's premises.

However, the CPC scheme is superior on other dimensions. First of all, it creates information. The advertiser knows exactly and in real time how many targeted viewers acceded its premises, rather than having to estimate $\alpha$. Therefore, CPC solves, partly, the conundrum for which firms "waste half of the money spent in advertising, but do not know which half".[11] Secondly, risk is shifted from advertisers to

[10] E.g. "For Google's paying customers—its advertisers—the information will be in a black box" (Picker 2009). He also rightly points out that if Google disclosed the private information, it would allow the advertiser to reach targeted viewers without passing through it, self-destroying its business model.

[11] John Wanamaker, quoted in Picker 2009.

the intermediary. If the campaign is unsuccessful, i.e. delivers no additional visitors, under CPM the advertiser bears the full cost, while under CPC the advertiser pays nothing and the intermediary bears the opportunity-cost of missed ad revenues. This in turn creates incentives for the intermediary to ensure that ads are channelled towards the mostly interested viewers (ENISA 2012), i.e. that *those who value the good or service most will find it* (Ratliff and Rubinfeld 2010). Under CPC, the advertiser is therefore sure that the intermediary will keep on its promises of looking for the most interested viewers, a promise which, as user profiles are not made public, would be hardly monitorable otherwise.

For these reasons, I will assume that advertisers will opt for CPC when possible, although I am aware that there are specific reasons for which in some cases an advertiser prefers to opt for CPM scheme, e.g. to build brand recognition or in case of widespread consumer goods.[12] Furthermore, as I will try to show in Section 3, CPM is *de facto* the only possible option when buying ads from intermediaries which have only statistical information about their users, rather than punctual individual profiles.

Advertisers' surplus as a function of the number of users does not have a point of maximum, because marginal utility of audience, albeit diminishing, is never negative. Since under CPC the marginal cost to reach an additional user, that is its price, is 0, advertisers' surplus increases indefinitely when the number of viewers increases.[13]

This happens because advertisers do not pay for a certain amount of viewers, but of clicks. Advertisers would buy as many clicks as

[12] For example, Facebook offers both options. Cf. http://www.facebook.com/help/?page=219791638048948 (visited on September 2012).

[13] Formally, Gossen's second law is verified only for x approaching infinity, where is the audience (number of viewers). Gossen's second law states that: $\frac{\partial U_x}{\partial U_y} = \frac{p_x}{p_y}$.In our case, x is the audience (number of viewers) and y is a basket representing all other goods. As $p_x$=0, for the equation to be verified $\partial U_x$ is to be equal to 0. Nevertheless, the marginal utility of viewers is never nihil, if not approaching the limit to infinity: $\lim_{x\to\infty}(\partial U_x) = 0$.

possible, within their budget, as long as their expected profit per click is higher than the price (and 0 clicks afterwards) (Evans 2008). For this reason, advertisers enjoy Constant Unidirectional Network Externalities based on the numerosity of the audience: the higher the audience, the better (Luchetta 2012).

In other words, the advertisers' demand function for audience is infinitely elastic. This assumption is common in the literature on the economics of advertisement (Spence and Owen 1977; Anderson and Gabszewicz 2006) and becomes a key feature of the market under the CPC pricing scheme. Indeed, infinite elasticity of the demand for audience is given by the fact that the demand of click saturates the budget as long as the expected profit per click is higher than the CPC.

## 3 A taxonomy of Intermediaries

All intermediaries follow a comparable business model. They harvest personal information from users, compile user profiles (either in-house or via outsourcing) and match users' profiles with targeted advertisements. Nevertheless, they are, at first sight, very dissimilar companies, ranging from search engines to supermarkets, from financial institutions to social networks. In this section, I provide some coordinates of a tentative map of the world of intermediaries: a taxonomy which allows comparing entities which are similar as far as the intermediation of personal information is concerned

First of all, intermediaries differ in the relative significance of the matching activity. Groupon gets all of its revenues from matching consumers and dealers. Google search engine gets most of its revenues from advertising,[14] and so does Facebook.[15] LinkedIn is a social network as Facebook, but only 26% of its revenues come from advertising.[16] Television channels may be fully or partially funded by

[14] Cf. Google financial statement for 2011

[15] Cf. http://techcrunch.com/2012/05/03/stats-facebook-made-9-51-in-ad-revenue-per-user-last-year-in-the-u-s-and-canada/ (visited on September 2012)

[16] Cf. http://techcrunch.com/2012/05/03/linkedin-beats-the-street-q1-revenue-up-101-percent-to-188-5m-net-income-up-140-percent/ (visited on September 2012)

ads, or ads-free (in the latter case, they do not belong to the category of intermediaries). Other intermediaries get much lower revenues, as they basically do intermediation on top of their main business activity, For example, supermarkets get very low revenues directly from ads, because they usually deliver internal ads only.[17] It may be useful to broadly identify four categories of intermediary models along this dimension:

1) pure intermediary model: share of revenues from matching activity: 81-100%;
2) significant intermediary model: 51-80%
3) partial intermediary model: 15/20-50%
4) marginal intermediary model: <15/20%.

Another distinction which can be made is between online and offline intermediaries. Online intermediary are facilitated in harvesting and processing personal information, and in real-time matching of visitors and advertisements, but they are not the only relevant category. Off-line intermediaries feature notable examples, such as providers of communication services, financial institutions, old media, and supermarkets. Truly, the relevance of the intermediary model is higher in the online economy. Most offline intermediaries are either marginal or partial intermediaries, with the exception of media.

Intermediaries can collect either statistical or punctual information about their users. Statistical information is typical of old media: by buying a certain newspaper or watching a certain TV programme, I reveal statistical information about myself. Namely, I am more likely to have a certain age, education degree, political orientation, interests and so on and so forth (Picker 2009). Punctual information consists of collecting specific data about each user. Both statistical and punctual profiles are used to channel advertisements, although the underlying ad logic is quite different. A hotel in Rome will prefer matching its ad to punctual profiles of individuals travelling to Rome, while producers of mass consumption goods may find efficient to broadcast ads to a large but only statistically profiled audience. Statistical information is usually associated to CPM pricing schemes

[17] In theory, one could measure the additional revenues due to targeted own-promotions through loyalty programmes.

and allows for different marketing strategies, such as raising brand awareness.

Intermediaries can differ as for the relevance of the personal information to which they have access to their productive process, In general, the literature distinguishes between functional and non-functional information, i.e. between information which is necessary for delivering the good/service and the rest. Information relevance is taken into account in devising data protection policies by several authors (Kang 1998; Novotny and Spiekermann 2011). Given the technological and market development, we propose a more granular taxonomy of information into four categories:

1. Information is *non-functional* when it is irrelevant for the good or service that the intermediary delivers. For example, a telephone company could access the content of my SMS, but this information is irrelevant for its task, that is delivering my SMS to the receiver. The same goes with email content *vis-à-vis* my email provider, or Internet traffic with regards to my Internet Service Provider (ISP).

2. Information is *functional* when it is used by the intermediary to improve the quality of its service. For example, Google search engine uses search history to improve the quality of search results;[18] insurance companies collect as many data as possible for a better pooling; and financial institutions ask for credit history to match the conditions of a loan with its riskiness.

3. Information is *necessary* when the good or service cannot be delivered otherwise. For example, a telephone company needs to know to whom I am sending the SMS; Google search engine needs to know my search query.

4. Finally, for some intermediaries information is itself the object of the transaction, therefore the last category is labelled

[18] Cf. Article 29 Working Party on Data Protection: Opinion 1/2008 on data protection issues related to search engines. "While search engine providers inevitably collect some personal data about the users of their services, such as IP address, resulting from standard HTTP traffic, it is not necessary to collect additional personal data from individual users in order to be able to perform the service of delivering search results and advertisements."

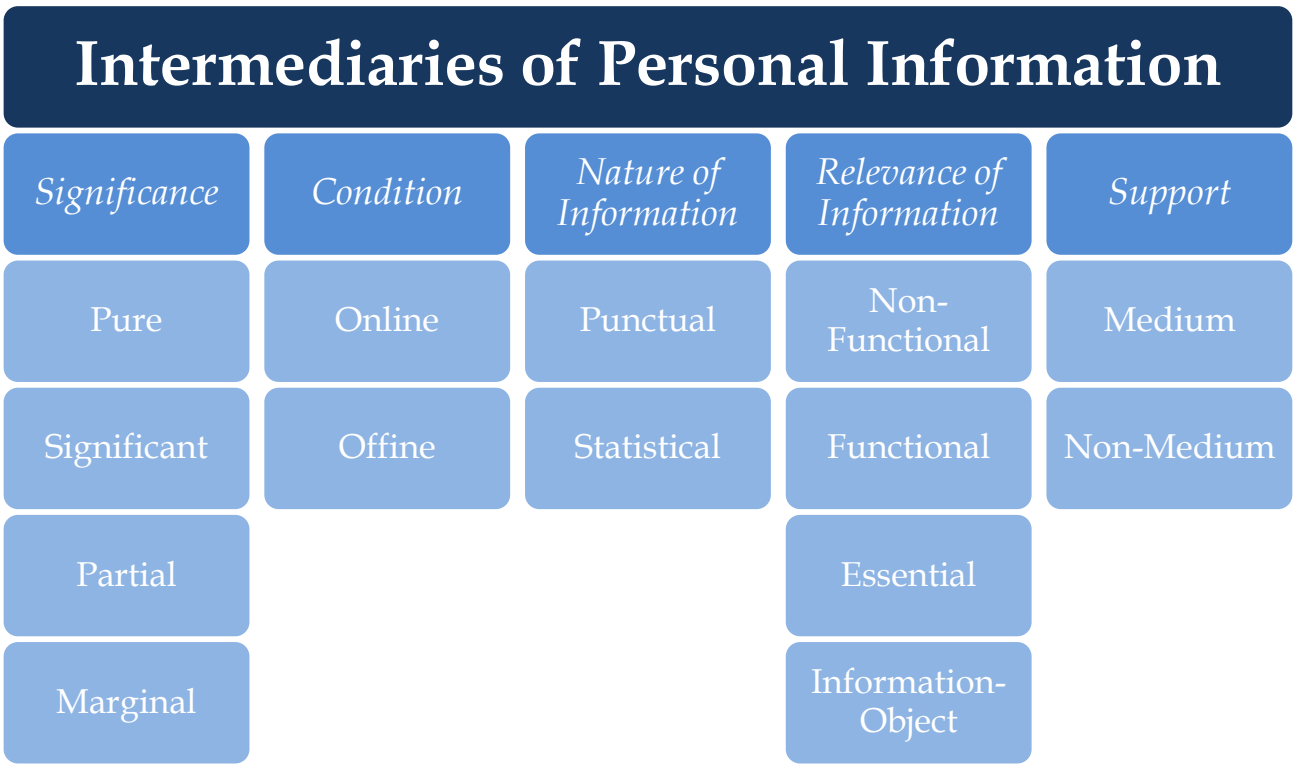
*information-object*. This is the case of social networks, where the personal information sharing is itself the service offered, rather than an ancillary condition. Belonging to the class of intermediaries of information-object implies that prevents anonymisation is not a viable strategy to protect personal information. A Google search or a phone call can be anonymised; an anonymous social network would be of no use (Picker 2009).

Finally, it is worth mentioning that a single intermediary can access one or more classes of information.

Finally, a last distinction should be made between intermediaries having a medium on which carrying out the matching activity, e.g. delivering advertisements, and intermediaries without such a medium. Old media, Google and Facebook can transmit advertisements alongside of their content. Supermarkets, Groupon and telephone companies cannot, and have to create dedicated supports (emails, snail mails, telemarketing etc.) to deliver targeted ads.

Figure 8 below summarises the typologies of intermediaries.

**Figure 8 – Taxonomy of Intermediaries**



The position of the company over these five dimensions is important to develop the intermediary business model in details. First of all, the company should understand whether it can be a pure or marginal intermediary. This depends on business strategies, i.e. whether intermediation is the only activity undertaken or just a way to raise additional revenues from an untapped resource (i.e. from personal information collected for other purposes). The degree of intermediation also depends on the amount of personal information collected: if a company collects personal information at the margin of its activity, such as supermarkets, insurance companies or banks, it will not be in a position to become a pure or significant intermediary. The degree of intermediation also depends on whether the company is brick and mortar only or has an online presence too. In the latter case, it will be easier to directly and indirectly harvest personal information, and the online presence will also provide a channel to deliver ads. If the company has not a medium to deliver ads, it must create one in order to profit from intermediation or sell its information to a medium-endowed company, and that must be addressed *ex ante* in devising the strategy. Finally, consumers are more likely to relinquish personal information when it is necessary or functional to the provision of goods or services. Submission of non-essential information, especially in the offline world, may be resisted as an excessive intrusion of privacy. For example, consumers strongly reacted to the decision of British Telecom to carry out a pilot project for retrieving personal information from subscribers' Internet traffic (Person 2010), whilst they mind much less when a telephone company reviews our traffic pattern (which is an information necessary for billing) to offer a better tariff plan.

## 4 Competition and Regulation of Intermediaries

So far we investigated the independent variable of the logical relation between intermediation of personal information and its economic regulation. Namely, we investigated the behaviours of actors in the market for privacy, both consumers and firms, and the proposed a taxonomy to coalesce similar entities. Now, it is time to investigate the dependent variable, that is the economic regulation of intermediaries of personal information. The question is whether

economic regulation takes into account the independent variables, i.e. provides a level playing-field to intermediaries which adopt the same business model (Picker 2008).

Intermediaries of private information span through different industries. Therefore, they are subject to different sectoral regulations and, for competition law purposes, operate in different relevant markets. I claim that regulation and competition policy have so far overlooked intermediaries of personal information as a group of firms adopting the same business model and therefore competing among each others. Legal analysis has not yet been able to keep the pace with the evolution of business models, especially, but not only, in the online ecosystem (Renda 2011a).

Currently, firms carrying out the same activity are subject to different norms and constrains. This may put some of them at a disadvantage, up to preventing the implementation of an intermediary business model. In short, some firms can make money by using personal information to raise ad revenues; some others cannot, or can but only at a higher cost. Usually, brick and mortars firms and infrastructure providers are regulated more strictly than online companies (Picker 2008). E.g., financial institutions in the US have to obtain users' opt-in content to employ their personal (non-sensitive) information for advertising, and must send a yearly summary of their privacy policies.[19] These requirements are much higher than those imposed on other US companies, such as Google or Facebook.

Below, I provide two more detailed cases, one for regulation and one for competition law. In the former, I try to demonstrate that the same behaviour is regulated differently depending on the type of intermediary, with obvious consequences in terms of the ability to raise ad revenues and therefore on the relative competitive position. In the latter, I try to show how competition policies failed to understand competition mechanisms, and thus to properly define the relevant markets, when dealing with a search engine intermediary such as Google.

[19] Gramm-Leach-Bliley Act 15 USC, Subchapter I, Sec. 6801-6809

### *4.1 Email scanning vs. Deep Packet Inspection*

Most email providers deliver their services for free to consumers.[20] Or, as I tried to argue in this paper, they provide email services as an in-kind payment for users' personal information. Email providers generate revenues from ads and by providing professional services to business customers. Although disaggregated revenue data is not available, as the most widespread providers are part of largest conglomerates, it is fair to consider email providers as pure or significant intermediaries.

Email providers have access to essential, functional and non-functional information. Essential information is e.g. the addressee of my email, or my IP address. Functional information is e.g. the contacts to whom I write most, so that the provider can highlight for me mails from these contacts as "important". Non-functional information is the content of my emails. The providers need not to know what I am writing about, but this can be a precious source of personal information. And two of the three largest web-based email providers,[21] that are Gmail and Yahoo!Mail, scan email content to deliver targeted ads.[22] This is acknowledged in their privacy policies, and an opt-out is offered to users.[23]

Internet Service Providers (ISPs) would be in a comparable position, but it is harder for them to access the data they transmit for intermediation purposes. ISPs sit over a mine of personal information, as whatever we are doing on Internet is conveyed through their "pipes", i.e. their fibre, cable and copper

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[20] I chose to compare email providers and telecom operators because of the similarities of their services. The same analysis could be extended, *mutatis mutandis,* to compare tracking cookies and deep packet inspection, as they both aim at tracking browsing behaviours.

[21] Cf. http://litmus.com/blog/email-client-market-share-stats-infographic-june-2012/email-client-market-share-june-2012 (visited on September 2012)

[22] Hotmail (Microsoft's), the other member of the "big three", pledged not to scan emails content. It delivers targeted ads based only on cookie technologies. Cf. http://www.microsoft.com/privacystatement/en-gb/core/default.aspx and http://blogs.computerworld.com/15898/microsoft_bets_youre_scared_of_google (visited on September 2012)

[23] Cf. http://info.yahoo.com/privacy/uk/yahoo/mail/ymail/ and http://www.google.com/intl/en/policies/privacy/ads/#toc-personalize (visited on September 2012)

infrastructures. Very few ISPs, unlike email providers, attempted to access non-functional information, that is to observe their subscribers' Internet traffic in some details. This is to some extent surprising, as the depth and breadth of this potential source of personal information makes email content and search queries appallingly smaller (Person 2010).

Real-time access to IP packets as they are travelling on the net is possible via the Deep Packet Inspection (DPI) technology. This technology is actually mandatory for American ISPs, to allow government surveillance of IP traffic for security reasons. On top of that, DPI can be used for network security, network management, and targeted advertising (Collins 2010; Daly 2011). I will restrain my focus to the latest purpose.

In principle, the mechanism is the same as for email scanning. Both email providers and ISPs wish to access the content of my communication and use this information to match targeted ads. Always in principle, I am entitled to confidentiality both concerning my emails and my Internet traffic. Still, under EU law, the two situations are treated differently.

Art. 5.1 of the ePrivacy Directive[24] requires Member States to ensure confidentiality of communications and the related traffic data, and prohibits surveillance without the user's consent. Email scanning amount to communication surveillance and as such is to undergo user's consent. The issue is what constitutes legitimate consent. Email providers can do so on an opt-out basis: first you get an email address and then, should you wish, you can opt-out from content analysis.

Differently, providers of public communication networks wishing to process traffic data, such as ISPs using DPI technology for advertising purposes, are subject also to art. 6 of the ePrivacy directive. This article prohibits storage of traffic data for non-

[24] Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications). OJ L 201, 31.07.2002, p. 37. See also Opinion 2/2010 on online behavioural advertising of the Article 29 Working Party on Data Protection.

functional purposes, as long as data are not used to provide value added services. Value added services are defined (sic!) as any service requiring processing of traffic data, thereby the exception covers targeted advertising. Nevertheless, art. 6 exception requires opt-in consent. The failure of the United Kingdom to require opt-in consent for DPI led the European Commission to open an infringement procedure,[25] the most serious legal action that the Commission can undertake against a Member States allegedly non-compliant with a Directive (Daly 2011). The United Kingdom later promulgated an act requiring opt-in consent for DPI (OFT 2010), and the infringement procedure was subsequently dismissed.[26]

As it has been argued in Section 2.1, opt-in and opt-out policies are not equivalent, an opt-in policy requires more effort from ISPs and lowers participation rate, thereby reducing collection of personal information and hence ad revenues. Clearly, DPI is quantitatively different from email scanning: more data are harvested from consumers. Still, there is no qualitative difference between the two behaviours. In both cases a communication provider wants to access non-functional confidential information, that is content, to deliver target ads. In both cases, the user is to waive the right of confidentiality to allow access to this information. Why email content is considered less confidential and private than Internet traffic (or SMSs, or voice calls or any other communication service), such as to require opt-in over opt-out, is yet to be fully explained.

### *4.2 Google vs. Facebook*

Competition authorities have considered Google as operating in a two-sided market, whose sides are online advertising and search results.[27] Although the European Commission has not yet cleared this stance, it is also possible that the online advertising market will eventually be split, and that Google relevant markets will be defined

[25] Cf. http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/570 &format=HTML&aged=0&language=EN&guiLanguage=en (visited on September 2012)

[26] Cf. http://europa.eu/rapid/pressReleasesAction.do?reference=IP/12/60&type=HTML (visited on September 2012)

[27] European Commission Decision of 19/02/2010 Case No COMP/M.5727 - Microsoft/ Yahoo! Search Business, §47.

as search results and online search advertising.[28] Basically, at least in Europe, Google relevant market will be Google itself.

On the contrary, in the real world Google perceives to have threatening competitors. Surprisingly, it is not about other search engines, but about Facebook. Indeed, they both do money in the same way: collecting personal information and hence matching users and ads. Therefore, they are threats to each other.

Facebook and Google both are intermediaries of personal information. They are very similar along most of the dimensions of intermediation. The share of ad revenues qualifies them as pure intermediaries;[29] they operate online collecting punctual information, and they both have a *medium* to convey ads to the user. They differ only as to the kind of information collected, as Facebook deals with the information-object type while Google search engine does not.[30]

If competition analysis considered Facebook and Google as intermediaries of personal information, it would emerge clearly that they are fighting in (for?) the same relevant market, something which was already suggested by few authors (Picker 2009; Alexandrov *et al.* 2011; Renda 2011a). In a nutshell,[31] advertisers want to deliver targeted ads based on a large amount of personal information and are likely to consider both Google and Facebook as competing intermediaries.

Competition and regulatory authorities failed so far to grasp the mechanisms of platform completion, which is the main competitive force in the Internet ecosystem. Therefore, they hence failed to ensure regulatory symmetry, in particular pressing on infrastructure providers or software producers, while being looser with over-the-

[28] Cf. the non-binding opinion from the French Competition Authority: Autorité de la Concurrence, Opinion No 10-A-29 of 14 December 2010 on the competitive operation of online advertising.

[29] The share of revenues from advertising in 2011 amounts to 96% for Google and 85% for Facebook. Cf. Google Financial Table, available at: http://investor.google.com/financial/tables.html (last retrieved on November 2012); Facebook Prospectus for the Initial Public Offering.

[30] Of course Google+ does, but we focus on the search engine only to keep the case simpler.

[31] For a more detailed analysis cf. Luchetta 2012.

top players, such as content providers (Renda 2011a). Were it acknowledged that many players of the Internet ecosystem are indeed intermediaries of personal information fighting for the same market, competition analysis would become sounder. In particular market definition needs no longer to end up in single-product-markets,[32] and, most importantly, platform competition can finally be taken into proper account as the main explananatory variable of market conducts.

## 5 Cloud Computing Providers

I continue exploring the logical relationship between intermediation of personal information and its economic regulation by focusing on cloud computing providers. Cloud computing providers are very important actors with respect to intermediation of personal information because it has been predicted (Picker 2008, 2009) that they will be the most important intermediaries of the near future. Cloud providers are the "new web intermediaries at the heart of Web 2.0 hav[ing] access to an enormous datastream about their users."

Cloud computing has already started to change the way in which consumers and firms employ IT technologies. Word processing, data storage, apps development, and many more tasks are, or at least can be, transferred to the cloud. And, according to quasi-unanimous consent, the best has yet to come.

Cloud computing providers are clear candidates to implement the intermediary business model, and several, such as Google's Gmail are. The mine of data to which cloud providers have access is very rich, possibly the richest so far (Picker 2008; Gervais 2012). Indeed, the more our activities will take place in the cloud, the larger datastream we will produce. In perspective, it may be even bigger than traffic data available to ISPs: file storage and document compilation will disclose private information which is currently only

[32] For example, in the competition cases brought about by the Commission against Microsoft, Intel and Google itself. For Microsoft, Cf. Commission Decision of 24.03.2004 relating to a proceeding under Article 82 of the EC Treaty Case COMP/37.792; for Intel, cf. Commission Decision of 13 May 2009 COMP/37.990 Intel.

marginally conveyed through the Internet (Picker 2009). Cloud providers score, across all dimensions, as potentially successful intermediaries: pure and main intermediation has been shown to be a viable strategy in this industry; they may have a *medium* over which ads are conveyed, i.e. the thin cloud client; they operate online; and they have access to punctual information. In addition to that, for the vast majority of cloud providers, this datastream will consist of functional or essential information, i.e. the cloud provider will need to access it to perform its task. This is likely to bring about lower resistance to its harvesting.

Currently, intermediation of personal information, funded via advertising, is not the only, and for some services not the dominant, business model for cloud computing. Therefore it is important to understand whether this is a business strategy or, rather, depends on the privacy legal framework applicable to cloud computing providers.

The importance of cloud providers among the inhabitants of the Internet ecosystem is set to grow. Cloud services are likely to reinforce the tendency for revenues to move into the upper layers of the ecosystem, extracting value from players whose products have been to some extent, commoditised, such as infrastructures and software (Renda 2011b). Nevertheless, cards are re-shuffling across all layers, since firms from lower layers are becoming cloud providers, such as infrastructure providers, software manufacturers or business service providers. Internet players can build upon their core competences and customer relationships to sell cloud services to users, and in doing so can move from commoditised to higher value layers. E.g. Microsoft is leveraging its Microsoft Office to enter the cloud, IBM and large telecom operators are leveraging their existing business relationships for the same purpose. Such a strategy could be complemented, even boosted, by an ad-funded model for cloud computing. Although I am not sure whether such a scenario is realistic, it would be interesting to see whether a telecom operator could expand into cloud computing and harvest personal information up to the point of providing free internet connectivity paid by ads.

The technical and economic framework of cloud computing, which is described in Section 5.1, is quite established by now. On the contrary, the legal framework is still puzzling companies and legal scholars. Crucially, the possibility of implementing the intermediary business model depends on the legal regime applicable to personal data and private information in the cloud. Under EU law, but also in other legal systems, privacy, ownership and use of private information in the cloud are far to be clear, therefore a review of these aspects is provided in Section 5.2.

### *5.1 Technical and Economic framework*

The borders of cloud computing are hard to define. As bluntly put by Larry Ellison, CEO of Oracle, "I can't think of anything that isn't cloud computing with all of these announcements".[33] In some cases, cloud computing includes also what had been previously defined as web 2.0, that is any website with user generated content remotely stored, such as YouTube or Facebook. For sake of this paper, web 2.0 operators are considered as a different category of intermediaries (see also Picker 2009). Under the label cloud computing, in this paper I include firms which deliver IT services on demand, be it software, or hardware tasks such as storage and computational power, over a network.

According to the definition of the US National Institute for Standards and Technology:

> *[c]loud computing is a model for enabling 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.*[34]

Authors (Ambrust *et al.* 2009; Wyld 2009; Höfer and Karagiannis 2011; Renda 2011b; Yoo 2011; Gervais 2012) whilst adopting different definitions mostly agree on the main characteristics of cloud computing:

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[33] Quoted in Sluijs *et al.* 2011

[34] Definition retrievable at: http://csrc.nist.gov/publications/nistpubs/800-145/SP800-145.pdf (visited on September 2012)

1. Virtualisation, that is the possibility of running different and multiple virtual machines over a set of physical infrastructures;
2. Scalability, that is the possibility to allocate hardware resources according to users' needs;
3. Multitenancy, that is the possibility for different users to access the same resources;
4. User configurability;
5. Quality-of-service;
6. Accessibility over the Internet by any device;
7. Pay-per-service.

Although there is disagreement among IT experts (e.g. Ambrust *et al.* 2009), cloud computing providers are usually classified in three categories:

1. Software As A Service: providers of finished applications, such as Google's Gmail or Microsoft's Office 365;
2. Platform As a Service: providers of an environment for developing applications, usually including an operating system, programming languages and other software development tools. E.g. Google's App Engine or Microsoft's Azure.
3. Infrastructure As A Service: providers of hardware resources, such as processing, storage or other computing tasks. E.g. Amazon's EC2, Dropbox.

Potential impacts of cloud computing, once the technology is fully developed, are huge. In a fully cloud-based environment, computing power is transformed in a utility (Yoo 2011). Firms only have to install "thin" clients, whilst computing power is delivered on demand by large installations, as electricity is. Indeed, Wyld (2009) claims that it may represent a change as significant as the electrification of factories. Even before computing fully became a utility, economic impacts of adopting cloud computing are manifold: costs reduction; conversion of IT capital expenditures into operational expenditures, and therefore lower barriers to entry; economies of scale, due to lower unitary cost of processing and storage for mega data centres; aggregation of demand, leading to a higher usage ratio of equipments (Ambrust *et al.* 2009; Wyld 2009; Höfer and Karagiannis 2011; Marston *et al.* 2011; Yoo 2011).

Microeconomic impacts and efficiency gains will translate into macroeconomic effects. According to Etro (2011), cloud computing will stimulate economic growth through different channels: increasing business creation and job creation; fostering job reallocation towards more productive sectors; and improving public finance accounts by reducing expenditures and increasing revenues. All in all, cloud computing could increase GDP in the EU by 0.1% to 0.4% per year. For the US, estimates are up to 0.8-1% additional GDP growth per year (Iansiti e Richards 2011).

### *5.2 The legal framework*

Under EU law, cloud providers do not benefit from a dedicated legal framework. As information society services, they are covered by the legal framework on e-commerce (Sluijs *et al.* 2011).[35] Nevertheless, the e-commerce directive aims at ensuring the freedom of providing e-services throughout the Internal Market rather than at comprehensively regulating a class of operators. Namely, it deals with principles such as the freedom of establishment, the applicable jurisdiction, remedies, and with secondary liability. On the contrary, it is not all clear the positioning of cloud computer providers under other EU law branches, that are sectoral regulation and privacy law.

In Europe, sectoral TLC regulation has been tailored over two canonical firms: communication service providers and content providers. Communication service providers undergo a detailed and quite strict regulatory framework, concerning the authorisation regime, access and interoperability of networks, data portability, non-discrimination, universal-service just to name a few.[36]

[35] Directive 2000/31/EC of the European Parliament and of the Council on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market (Directive on electronic commerce). OJ L 178/1 17.7.2000.

[36] Directive 2002/19/EC of the European Parliament and Council on access to, and interconnection of, electronic communications networks and associated facilities (Access Directive) OJ L 108/7 24.4.2002; Directive 2002/20/EC of the European Parliament and of the Council on the authorisation of electronic communications networks and services (Authorisation Directive) OJ L 108/21 24.4.2002; Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services (Framework Directive) OJ L 108/33 24.4.2002, Directive 2002/22/EC of the European Parliament and of the Council on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive) OJ L 108/51 24.4.2002. Commission

Nevertheless, cloud providers seem to escape the legal definition of communication providers. At the same time, they lack "editorial control", which would qualify them as content providers (Sluijs *et al.* 2011). Indeed both frameworks would not fit cloud providers. As they do not (yet?) operate an infrastructure which can be qualified as an essential facility, they need not the detailed regulatory framework for communication providers. Still, some of the issues therein regulated, e.g. interoperability or data portability, are relevant for the law and economics of cloud computing as well. For this reason, they are also unlikely to benefit from the looser regulation on content providers. An undefined regulatory framework, e.g. on interoperability, could create expectations of vendor lock-in, thereby stifling market take-off (Balboni 2010, Marston *et al.* 2011).

EU Privacy law[37] finds direct application for cloud providers. Although many scholars discussed the issue and criticised the indeterminacy of a framework which was not thought for cloud computing and could undermine its development (i.a. Hon *et al.* 2011a, b; Balboni 2011), two points seem hard to contest:

1. Cloud providers process data which are "personal" in the meaning of the directive, thereby falling within its scope of applications;[38]
2. Cloud providers, *a fortiori* if generating revenues via targeted ads, are to be considered as data controllers as they, at least in some occasions, determine the means and the purposes of data processing.

The EU privacy law has important implications in terms of i.a. data security, data treatment, data transferability, but it does not prevent a cloud provider to implement an intermediary business model. Everything it needs to do is obtaining consumers' consent to harvest personal information from users' cloud datastream. To a limited extent, email providers are already doing so. Other operators are likely to follow once a critical mass of users, crucial to attract

Directive 2002/77/EC on competition in the markets for electronic communications networks and services OJ L 249/21 17.9.2002.

[37] Privacy Directive 95/46/EC, *supra* note 4. Directive on e-privacy, *supra* note 24.

[38] The only reasonable exception being the provider of storage-only services requiring users' encryption of data.

sufficient advertisers because of the Constant Unilateral Network Externalities, switches to cloud-based non-mail services (Renda 2011b, quoting Gartner's analysis).

It could be questioned, as Reed (2010) does, whether the provider has any right of ownership on personal information harvested from data that the user has entrusted to the cloud. Reed argues that data created by the user belongs to the user, while data generated by the operator from data created by the user belongs to the operator. Harvested personal information can be used for revenue-generating activities as long as i) it is not disclosed to third parties without the user's consent; ii) it is not used to compete against the user; or iii) to make profits which could have been made by the user. As long as the re-use of personal information is not concealed and as long as the consumer is arguably enjoying lower prices because of the re-use of "his" personal information, *nihil obstat* for the intermediary.

As data harvesting is permitted under privacy law and ownership rights do not prevent cloud providers for making profit out of users' personal information, what happens in the cloud is then a matter of contract law (Reed 2010; Robison 2010; Gervais 2012). The terms of reference of the contracts for the provision of services of cloud computing will dictate what cloud intermediaries will or will not be able to do with personal information. Some commentators (*i.a.* Ozer and Conley 2010) notice that most privacy policies look like a unilateral appropriation of rights on users' data by cloud intermediary. Some kind of competition over privacy exists, but only for goods and services sold at positive price, while zero-price services showed less of variation over privacy policies (Presibuch and Bonneau 2011). The law and economics analysis would say that data usage rights are not "salient" for consumers, and therefore intermediaries will draft "unfair" terms to appropriate as much surplus as possible (in the framework of Korobkin 2003). On top of that, economics of privacy showed that users' behaviours are not responsive to better privacy policy (cf. Section 2.1). Nevertheless, Microsoft is marketing Office 365 as a privacy friendly cloud service, stating that it will never harvest private information from users' documents. It will be interesting to see whether cloud computing, as

e.g. music distribution, will become a battle between brands such as Microsoft and free ad-funded cloud intermediaries.

# 6 Conclusions

Thanking the reader for coming so far, I would like to point out the reason why this research was undertaken and to summarise its main results. We currently miss a holistic analysis of intermediaries of personal information. They represent the most important class of firms in the online ecosystem, and are important actors also among brick and mortar companies. Still, in many cases legal and economic analysis looks at them through scattered lenses. I have tried to stress that this class of firms is characterised by a similar business model, that is collecting information from users to match users with goods and services. This is how intermediaries generate revenues. This similarity is often neglected because both economic and legal studies focus on the different goods and services that intermediaries provide to users in exchange of personal data, rather than on the data themselves.

To build this framework, it is necessary to start from three main pillars. The first consists of realising that, as Gervais (2012) claims, value in the current online ecosystem is built upon connection rather than scarcity. The second consists of understanding the economics of privacy, which explains the micro-behaviour of consumers facing a choice whether to disclose or not personal information. Personal information-intermediaries can exist because, in the current setting, most consumers will disclose most information in most cases; and their business model can thrive because intermediaries can precisely exploit the insights about consumers' privacy choices. Thirdly, the supply side is to be taken into account, acknowledging and framing the business models of intermediaries of personal information. This business model, with some degree of variation, is applied regardless of the goods and services provided to the customers.

Once this framework is laid out, it is possible to cast a taxonomy of personal information-based intermediaries to compare similar entities. Their characteristics vary across five dimensions: i) the share of revenues generated by the intermediating activity; ii) whether

they operate online or offline; iii) whether they collect statistical or punctual information; iv) the relevance of the information collected to the business process; v) whether they possess a medium. Depending on where intermediaries are positioned across these five dimensions, they can adopt different strategies to monetise their personal information.

Nevertheless, regulation and competition policy is still blind to the analysis of intermediation of personal information, and regulates intermediaries exclusively based on their sector of activity. It implies that firms which (are willing to) adopt a similar strategy to exploit their data set face different regulations. This is the case illustrated in Section 4.1, where it is shown that e-mail providers and telecom operators cannot process in the same way the same non-functional information (i.e. the content of the communication they convey) in order to deliver targeted ads. As for competition policy, Section 4.2 shows that the failure to analyse the competitive environment in which both Google and Facebook operate leads to skewed results in the definition of the relevant market, and to considering firms facing real competition from other major operators as monopolists. Finally, the analysis of the cloud computing sector showed that whether the intermediary model can be adopted will depend on the legal framework deemed applicable to cloud computing providers.

This is only a first attempt to explore this sector. Further research could profit by proceeding over two directions. First, from an economic point of view, it would be useful to go further in the description of the market for personal intermediaries, modelling them in a more detailed manner than the fresco provided in this paper. Secondly, from a legal point of view, it would be useful to review and assess all the instances in which regulation is not tailored to the personal information business model and creates disparities among different players.

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