
The Relationship between Competition Law and Sector Specific Regulation: The case of electronic communications

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Abstract – *This paper studies the convergence and the remaining divergences of European competition and sector regulation in the electronic communications sector. It shows that (1) antitrust authorities are justified to intervene more intensively in the electronic communications sector than in the other sectors of the economy; (2) the remaining divergences between antitrust and sector regulation should determine the scope of later, hence sector regulation should be applied when there are structural (economic or legal) entry barriers or network effects; (3) contrary to the European practice, it is better to base sector regulation on an independent economic concept linked to the objectives of regulation (like the concept of “bottleneck”); (4) NRAs should be cautious not to automatically extend a regulatory approach suited for infrastructures laid down under legal monopoly conditions to new Schumpeterian infrastructures and should be less hypocritical about their actions.*

Keywords – *Telecommunications, competition policy, regulation, European Union.*

1 INTRODUCTION

In the European Union and thus in Belgium, there are two main instruments to guarantee effective competition in the electronic communications sector (i.e. the infrastructures for the services of the Information Society like fixed and mobile telephony networks, Internet connections, cable TV, satellite connections) that have converged over time, contrary to what happened in the US (Geradin and Sidak,

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2005). On the one hand, there is the antitrust law that has been applied extensively to become a sort of 'regulatory antitrust'. On the other hand, there is the sector regulation whose mode of intervention has been aligned on antitrust law methodologies to become a sort of 'pre-emptive competition law'.

Such evolution is interesting because it questions the (remaining) differences between both instruments and their optimal coordination. This is an important question at a time when the Commission has just tabled proposals to reform the electronic communication sector regulation¹. This is also important for Belgium where the relationship between the competition authority and the sectoral regulators is one the tightest in Europe (see Devroe, 2007 and Valcke, 2007) and the recent governmental agreement of Leterme I seeks for an optimal allocation of competence between both types of authorities.

The paper is divided in the following way. Section 2 gives a quick view of the system. Section 3 goes in more details on the application of both branches of anti-trust law (ex-post and ex-ante) since the last fifteen years. Section 4 deals with sector regulation since its last modification in 2003. Section 5 tries to propose an efficient balance between both instruments. Finally, Section 6 concludes.

2 A QUICK VIEW OF THE SYSTEM

In the European electronic communications sector, public authorities rely on several instruments to discipline competitive behaviours, as shown in Table 1. (1) Competition law that applies to electronic communications like to any sector of the economy and that may be divided into two branches: ex-post competition law that punishes anti-competitive behaviours (agreements and abuses of dominant position)², and ex-ante competition law that prevents anti-competitive concentrations³; (2) Sector regulation that always applies ex-ante to prevent anti-competitive behaviour⁴.

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1. The proposals were tabled in November 2007 and are available of the website of the Commission: http://ec.europa.eu/information_society/policy/ecomm/tomorrow/index_en.htm
 2. Articles 81 and 82 EC and Council Regulation 1/2003 of 16 December 2002 on the implementation of the rules on competition laid down in Article 81 and 82 of the Treaty, O.J. [2003] L 1/1. In Belgium: Competition Act coordinated on 15 September 2006, M.B., 29.09.06.
 3. Council Regulation 139/2004 of 20 January 2004 on the control of concentrations between undertakings, O.J. [2004] L 24/1.
 4. Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (*Framework Directive*), O.J. [2002] L 108/33; Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services (*Authorisation Directive*), O.J. [2002] L 108/21; Directive 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on access to, and interconnection of, electronic communications networks and services (*Access Directive*), O.J. [2002] L 108/7; Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (*Universal Service Directive*), O.J. [2002] L 108/51. Those Directive have been transposed in Belgium by the Electronic Communications Act of 13 June 2005, M.B., 20.06.05.

Table 1: Competition law and sector regulation

	Competition Law – Ex post	Competition Law – Ex ante	Sector Regulation/ SMP regime
Objective	Maintain competition Increase competition → Market structure is broadly satisfactory		Increase competition Mimic competition → Market structure is not satisfactory
Burden of proof to intervene	1. Market definition 2. Dominant position 3. Anti-competitive conduct: agreement or abuse of dominance (high)	1a. Notified concentration 1b. Market definition 2. Significant impediment to effective Competition (low) (Conduct presumed)	1a. Market selection (very high) 1b. Market definition 2. SMP=dominant position (Conduct presumed)
Remedies	Mainly behavioural Fines Private damages	Mainly structural	Mainly behavioural

Note: The shadow area is the triggering factor for each legal instrument.

On the one hand, competition law has one main objective which has become prevalent over time and is the maximisation of consumer welfare. This implies that competition law aims at efficiencies (allocative, productive and dynamic) on the market by ensuring the competitive structure is maintained and possibly strengthened (see Ehlermann and Laudati, 199 and Huveneers, 2008).

To achieve this goal, an antitrust authority applies *ex-post competition law* in several steps: (1) It starts by defining the relevant market according to the Small but Significant Non-transitory Increase in Price (SSNIP) or the Hypothetical Monopolist Test⁵. (2) It then determines whether one or several undertakings have sufficient market power (in particular a single or joint dominant position, which is a level of market power sufficient to behave to an appreciable extent independently of competitors, customers, and ultimately consumers). (3) Finally, the authority determines whether the undertakings with market power have committed an anti-competitive practice (agreement or unilateral abuse). If it is this case, the authority imposes a fine and/or behavioural remedies (to put an end to the anti-competitive practice) or structural remedies if necessary and proportionate. A national Court may also provide for private damages to the injured competitor, customer or consumer. Thus, an intervention under *ex-post competition law* is triggered by an anti-competitive conduct.

5. Commission Notice on the definition of relevant market for the purposes of Community competition law, O.J. [1997] C 372/5. For an application to the electronic communication sectors, see Commission Guidelines of 9 July 2002 on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services, OJ [2002] C 165/6, para 33-69.

Antitrust authority applies *ex-ante competition law* in several steps. (1a) First, a concentration should be notified when it has a so-called Community dimension (i.e. in principle total worldwide turnover of more than 5 billions EUR and single European turnover of more than 250 millions EUR for at least two companies involved). (1b) The authority then defines, according to the SSNIP economic methodology, the relevant markets affected by the concentration. (2) It also determines whether the concentration would significantly impede effective competition (in particular by creating a single or collective dominant position). Such assessment is done in two phases with strict deadlines⁶. If the authority has doubts or thinks that the concentration would indeed significantly impede competition, the notifying parties may propose remedies that should remove all competitive concerns (the remedies should preferably be structural). Otherwise, the authority prohibits the merger. Thus, an intervention under *ex-ante competition* is triggered by a notified concentration which significantly impedes effective competition.

On the other hand, *sector regulation* has three (possibly contradicting) objectives: promotion of effective competition, the internal market, and the users' interest⁷. However, the European as well as the Belgian laws give important margin of discretion to the regulatory actors on the ranking of those objectives and on the means to achieve them. In particular, the laws do not decide whether the regulators should actively promote the development of infrastructure competition as a soft industrial policy marker or merely control the market as a hard trustbuster (on those ambiguities, see Granham, 2005 and Hocepiéd and de Streel, 2005). However, it is generally admitted that the part of sector regulation that deals with market power mainly aims to ensure efficiency by favouring competitive market structure or by mimicking the results of a competitive market structure⁸.

To achieve those goals, a regulatory authority follows three steps when imposing obligations on the operators. (1a) It starts by selecting markets where sector regulation would be more efficient than antitrust to solve competition problems. In practice, it does so according to three cumulative criteria (high permanent and non-strategic entry barriers, no competitive dynamics behind these barriers and inefficiency of antitrust remedies to solve the competitive problems)⁹. (1b) Then, it delineates the boundaries of the selected markets according to antitrust methodologies (the SSNIP test). (2) It determines also whether an operator enjoys a single or collective dominant position or could leverage a dominant position from a closely related market. (3) If it is the case, it imposes proportionate regulatory remedies to be chosen from a menu provided in the Access and Universal Service

6. After the first phase (of 25 or 35 working days), the authority decides if it does not have serious doubts that the concentration would impede effective competition, or conversely, it opens a second phase of investigation. After this second phase (of 95 or 105 working days), the authority decides whether the concentration would significantly impede effective competition or not.

7. Article 8 of the European Framework Directive; Articles 6 to 8 of the Belgian Electronic Communications Act.

8. European Regulators Group Revised Common Position of May 2006 on the approach to appropriate remedies in the new regulatory framework, ERG(06) 33, Chapter 4.

9. Recital 27 of the Framework Directive, as interpreted by Article 2 of the Commission Recommendation 2007/879 of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation, OJ [2007] L 344/65.

directives (transparency, non-discrimination, accounting separation, compulsory access and price control), or any other type of remedy with the prior agreement of the Commission. In brief, an intervention under sector regulation is triggered by a market that has the characteristics where competition law remedies would be insufficient to solve competition problems.

As we see, the sector regulation is aligned to antitrust methodologies. This alignment was decided in 2003 because according to one senior Commission official (Buiges, 2004) it was supposed to meet several good governance principles. It makes the regime more flexible and based on solidly grounded economic principles that ensure regulatory decisions closer to the reality of the market. And this increased flexibility should not be at the expense of legal certainty (as decisions will be based on more than forty years of antitrust case-law), nor harmonisation (as NRAs' decisions are based on legal principles that are strongly Europeanised). The system was also deemed to ensure a progressive removal of regulatory obligations as competition develops in the different markets (market-by-market sunset clauses) and facilitates the transition towards the mere application of competition law when sector regulation will no longer be necessary.

3 THE APPLICATION OF BOTH BRANCHES OF COMPETITION LAW TO THE ELECTRONIC COMMUNICATIONS SECTOR

3.1 Ex post competition law

The mode of intervention and the type of cases taken

At the European level, the mode of intervention of the Commission in the electronic communications sector was based on broad sectoral approach, which is different from the interventions in the other sectors of the economy based on a case specific approach. In fact, the Commission behaves more like an industrial regulator than a mere antitrust authority. Thus, it adopted three general guidelines that explained how antitrust rules would apply to some competitive problems and that were not based a stock of previous individual cases: in 1991 on the application of competition rules to the telecommunications sectors, in 1998 on the application of antitrust rules to access agreement, and in 2000 on the application of antitrust rules to the compulsory access of the local loop (i.e. the last mile of the fixed telecom network where the economies of scale and scope are the largest).

The Commission conducted also six sector enquiries or quasi-sector enquiries where the Commission sent questionnaire to all the operators to better understand the dynamics of the marketplace and possibly identify anti-competitive practices (see Choumelova and Delgado, 2004): in 1997 on the high prices for international

calls, in 1998 on the high prices for fixed-to-mobile calls, in 1999 on the delivery conditions of leased lines, in 2000 on the high prices for mobile international roaming, and on the access to the local loop, in 2004 on the sales of sports rights to 3G and Internet.

In a second stage and on the basis of the information collected during the sector (quasi) enquiries, the Commission opened several individual cases (see Garzaniti, 2003: Chapter 6). So far, all cases cover pricing practices that were either exploitative (excessive prices) or exclusionary (price squeeze or predatory pricing). Up to now, only three formal decisions have been adopted: *Wanadoo* in 2003 for predatory pricing on the ADSL market, *Deutsche Telekom* in 2003 for price squeeze between wholesale access price to the network and retail broadband tariffs, and *Telefonica* in 2007 for similar price squeeze. However, this should not hide the fact that Commission has been more interventionist in the electronic communication sector than in the other fields of the economy. Indeed, the Commission opened many cases that were either passed to the NRAs when they had competence to act (e.g. cases of excessive fixed retention and termination rates) or settled informally between the Commission and the involved operators (e.g. cases of excessive prices for international leased lines).

At the national level, more decisions have been taken than at the European level, although the interventions of the NCAs vary a lot across countries (see International Competition Network, 2006). For instance, the French Competition Council has been extremely active, in particular in opening of the local access market to stimulate broadband development and condemning cartel in the mobile segment. In general, most national cases also relate to exclusionary pricing practices.

The remedies imposed

In the majority of the cases, the Commission imposed behavioural remedies in the form of reducing of excessive price or ending a price squeeze and very few fine. In some cases, the Commission went further and used ex-post antitrust cases to speed up liberalisation in the Member States that were reluctant to open their markets. For instance, the Commission closed in 1996 one case against *Deutsche Telekom* (for an alleged anti-competitive price squeeze between interconnection charges and retail business tariffs) on the conditions that the German government opened its telecommunications markets. Interestingly, neither the Commission nor a Member State has ever imposed a full structural separation of the incumbent into a network and a service divisions, but the United Kingdom has recently in an unprecedented move imposed a quasi-structural separation of BT¹⁰.

10. Ofcom Final statements of 22 September 2005 on the Strategic Review of the Telecommunications and undertakings in lieu of a reference under the Enterprise Act 2002.

3.2 Ex ante Competition Law: Mergers and joint ventures

The type of cases notified

In the electronic communications sector, many concentrations have been notified and decided by the Commission due to the re-shaping of the industrial landscape in the aftermath of liberalisation (see Garzaniti, 2003: Chapter 8). In the mid-nineties when telecom markets were progressively opened to competition, national incumbents set up joint ventures to offer enhanced international services to multi-nationals (e.g. *Concert* joint venture between BT and MCI or *Atlas* joint venture between France Telecom and Deutsche Telekom).

In the turn of the century when consolidation of ICT industries took place, WorldCom (renamed MCI and then bought by Verizon) was the leader in the restructuring of the Internet market by acquiring many rivals companies (e.g. acquisition of MCI or Sprint). Similarly, Vodafone was the leader of the restructuring of the mobile markets by acquiring many rivals (e.g. acquisition of Airtouch of the US and Mannesmann of Germany). At the same time when convergence was taking place, Internet and telecom companies merge or form joint venture to offer fully converged services (e.g. merger between AOL and Time Warner and between Vivendi and Seagram).

More recently, there has been a consolidation in the pay TV industry (e.g. NewsCorp buying Telepiu to form Sky Italia). Today, incumbents from Western Europe are buying smaller foreign operators (e.g. Telefonica of Spain buying the English mobile operator O2), especially in Eastern Europe.

However, except in the Nordic country (with the aborted merger between Telia of Sweden and Telenor of Norway and later the successful merger between Telia and Sonera of Finland), there has been no fully-fledged merger between fixed incumbents because the customer demand is not yet sufficiently Europeanised, the regulation varies a lot across countries and the governments are reluctant to accept such consolidation for national patriotism reasons.

The remedies imposed

The Commission has been more severe (read interventionist) in the electronic communications sector than in the economy as a whole because between 1990 and 2006, it blocked 2.2% of the ICT operations (instead of 0.6% on average) and imposed remedies in 8.4% of the ICT cases (instead of 7 % on average). This is due to several reasons. The first reason was to prevent a dangerous circle of self-reinforcing market power between related markets, whereby parties to the concentration would leverage their power from established markets (like the local loop) to secure a dominant position on emerging markets (like the digital interactive service) and, in turn, leverage back from the emerging market to strengthen their power on

the established markets. The second reason was to support the liberalisation program of the Commission. For instance, in the early joint ventures between incumbents to provide enhanced international services like *Atlas*, the Member States concerned were encouraged to accelerate liberalisation in order to make possible a clearing under conditions of those alliances. As explained by a senior Commission official (Ungerer, 2001), the dynamics of the process created a parallelism of interest in accelerating liberalisation between incumbents (in order to have their alliances cleared), Member States (in order to allow the development of the potential of their national markets) and the Commission (in order not to be obliged to block new services and new technologies). The third reason of the strict stance of the Commission was to ensure non-economic policy objectives (like pluralism in the media) in particular for the mergers involving content related services like the *AOL/TimeWarner* merger in 2000.

The types of remedies imposed by the Commission to accept concentrations have been diverse. The Commission imposed structural remedies (like cable divestiture) that stimulate infrastructure competition for the parties to lose their dominant position on the traditional markets and their ability to leverage and foreclose entry in emerging markets. As the effects of these measures could only take place with time, they were complemented by behavioural remedies aiming at forcing access to key facilities (like content, fixed telecom infrastructure, mobile infrastructure, technical services for pay-TV or interactive-TV services). Interestingly, many ex-ante antitrust remedies have paved the way for the future regulation. For instance, compulsory access to local loop was imposed in 1999 in the *Telia/Telenor* Decision and taken over by sector regulation in the 2000 Unbundling Regulation.

Note however that sector regulation has been taken into account when deciding the appropriate remedies. Thus the Commission imposed more lenient remedies or no remedy when the behaviours of the parties to a joint venture were under strict control of a sector specific authority and there were less risk of abuse and leverage. For instance, the Commission imposed less remedy in *Concert* Decision of 1994 (joint venture between BT and MCI that were strictly controlled by the British and American NRAs) than in *Atlas* Decision of 1996 (joint venture between France Telecom and Deutsche Telekom that were not sufficiently controlled by their respective NRAs).

3.3 Appraisal of the extensive application of antitrust in the electronic communications sector

The extensive use of antitrust in the electronic communications sector has been criticised by many. Veljanovski (2001) argues that the merger approach has been too stringent because economic literature shows that anti-competitive leverage is more rare than the Commission (lawyers) would think. Larouche (2000) argues that competition law has been stretched beyond its reasonable limits and the institutional and legitimacy settings of antitrust do not justify its quasi-regulatory role. More generally, American authors like Audretsch et al. (2001), Evans and Schmalensee (2001), Katz and Shelanski (2004) remind the dynamic characteristics of the industries and the necessary adaptation of antitrust policy.

However, given the history of the sector, an interventionist stance of antitrust in the electronic communications sector might be justified on static grounds (because dominant position is pervasive in the sector) as well as on dynamic grounds (because these dominant positions are often the result of past legal protection and not of private investment decisions taken in a competitive environment and whose incentives should be preserved). Moreover in sectors where effective competition does not yet exist but is possible in the future, there may be a case for antitrust to actively promote entry of competitors that are equally efficient - or even less efficient- than the incumbents for two related reasons: on a overall market perspective, it may pay in the long run to have many actors competing, and on a individual entrant perspective, efficiency may increase over time as the customer bases and the operation scale increases. Therefore, there may be an economic case for a 'different antitrust' in sector where dominant position due to previous incumbency is prevalent. Yet, it should always be justified with sound economic reasoning (which was not always the case in the merger cases so far) and it should be strictly limited to the network industries that were developed under legal monopoly protection and not extended to other sectors of the economy.

4 THE APPLICATION OF ELECTRONIC COMMUNICATIONS SECTOR REGULATION

4.1 Ex-ante Sector regulation

The market segments regulated

As already explained, the markets selected for possible regulation should be those where antitrust would be inefficient to solve possible competitive problems, which has been interpreted by the Commission as markets fulfilling a test of three cumulative criteria: high permanent and non-strategic entry barriers, no competitive dynamics behind these barriers and inefficiency of antitrust remedies to solve the competitive problems.

Applying this test in 2003, the Commission recommended the NRAs to analyse 18 markets¹¹. This list comprised 7 retail and 11 wholesale, hence is mainly made of upstream access markets because there is no or low barriers to enter the retail markets when wholesale regulation is efficient. On the fixed voice segment, the Commission identified two retail access markets (for residential and business customers), four retail services markets (same segmentation residential/business and segmentation between local/national and international services), and three wholesale markets (call origination, transit and call termination) adding up to the whole

11. Commission Recommendation 2003/311 of 11 February 2003 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation, OJ [2003] L 114/45.

connection between two customers. On the fixed broadband data segment, the Commission identified two wholesale access markets: access at the local loop level and access at the bitstream level which is a bit further up in the network. On leased lines segment, the Commission identified one retail market (the minimum set of leased lines which corresponds to five types of leased up to 2Mbits), and two wholesale markets (terminating and trunk segments) which adds up to the whole connection between two customers. In the mobile segment, the Commission identified three wholesale markets: access and call origination as well as termination which are the two extremes of the mobile network, and international roaming which presents specific economic problems. In the broadcasting segment, the Commission identified only one wholesale market for broadcasting transmission. In general, the NRAs followed such market definitions, sometimes segmenting further the market defined by the Commission (in particular for the broadcasting market) and sometimes adding new markets¹².

Re-applying the three criteria test in 2007¹³, the Commission reduces the list of markets to be analysed from 18 to 7 markets (1 retail and 6 wholesale). The Commission maintains and merges the retail access markets. It removes the 4 service markets because competition has increased on those markets and will continue to do if the regulation of retail access markets and of wholesale markets is efficiently applied. The Commission removes transit and trunk segments because they are potentially competitive given the intensity of traffic on those markets. It removes the mobile access and call origination market as it was found to be effectively competitive in the vast majority of the Member States. The Commission also removes international roaming and broadcasting markets for very specific reasons (the roaming market is regulated by a particular European Regulation since 2007 and the broadcasting market touch upon content issue, outside of the scope of the SMP regime). It remains to be seen how the NRAs will react to this shorter list.

The remedies imposed

Although, the NRAs had the choice between a list of five remedies (transparency, non-discrimination, accounting separation, compulsory access and price control) and the obligation to only choose the proportionate ones, they imposed in general the full suite of them on all markets recommended by the Commission. In particular, they imposed price control at Forward Looking-Long Term Incremental Cost. Most regulators applied also the ladder of investment which, as explained by Cave (2006), consists of regulating the different rungs of an imaginary investment ladder along the network (i.e. retailing, IP Networks, backhaul, DSLAM, local loop) and only removing regulation of one rung when new entrants have climbed that rung. Thus the policy aims not only to create a level playing field but also to actively support entrants.

12. Communication from the Commission of 11 July 2007 on market reviews under the EU Regulatory Framework (2nd Report), COM(2007) 401.

13. Commission Recommendation 2007/879 of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation, OJ [2007] L 344/65.

Table 2: Markets susceptible to sector regulation under the 2003 and the 2007 Commission Recommendations

	Retail markets	Wholesale markets
Fixed Voice	1. Access for residential 2. Access for non-residential 3. Local and/or national services for residential 4. International services for residential 5. Local and/or national services for non-residential 6. International services for non-residential	8. Call origination 9. Call termination on individual public networks 10. Transit
Fixed Narrowband Data		Idem 8
Fixed Broadband Data		11. Unbundled access (including shared access) to metallic loops and sub-loops 12. Wholesale broadband access
Fixed Dedicated access	7. Minimum set of leased lines	13. Terminating segments 14. Trunk segments
Mobile Voice		15. Access and call origination 16. Call termination on individual mobile networks 17. International roaming
Broadcasting		18. Broadcasting transmission services

Note: the markets crossed are those present in the 2003 Recommendation by removed in the 2007 Recommendation

4.2 Appraisal of the application of Sector regulation and its alignment on competition law methodologies

After more than four years of implementation, the sector regulation which was more based on theoretical thinking than practical experience has not fully delivered the good governance principles it aimed for (flexibility, transparency, technological neutrality, harmonisation, proportionality, and legal certainty)¹⁴. In particular, the principles of proportionality and legal certainty are not achieved. Indeed, there is an increase of regulation as more market segments are regulated and more operators are regulated on each segment. At this stage, I can not prove that regulators have

14. For an overview of the state of implementation of the sector regulation: Communication from the Commission of 19 March 2008, Progress Report on the Single European Electronic Communications Market 2007 (13th Report), COM(2008) 153.

intervened beyond the optimal level because that would require a clear and articulated definition of optimal regulation as well as a full cost-benefit that is outside the scope of this paper. However, it is a fact that the never-ending expansion of regulation does not match the deregulatory rhetoric of the European and national legislators and regulators. Also the strategies of the regulatory actors are not sufficiently clear, in particular for the emerging markets: Do they want to strive for infrastructure-based competition *or* service-based competition? Do they want short-term competition *or* long term competition? Do they want to do industrial policy *or* not ?

One reason of such failure is the lack of clear objectives in the law (see *supra*) and the inability or unwillingness of the regulators to arbitrate between conflicting priorities. The legislator tried to hide the question of objectives and escape those conflicts by aligning sector regulation with antitrust methodologies. However, such methodologies do not evacuate the fundamental regulatory questions and worse, they add difficulties.¹⁵ The main difficulty is that standard antitrust principles were developed for antitrust practice in stable industries and need adaptations to be applicable in the context of the sector regulation for dynamic markets. First as pointed by Larouche (2000, pp. 203-211) and Richards (2006, pp. 206-209), standard antitrust principles are mainly suited to horizontal markets but need to be substantially modified to deal with vertical chains of production (which is the main focus of sector regulation). For instance, standard antitrust principles would not by themselves be capable of defining a derived non merchant wholesale market and there is risk that the different services making a production chain are choked up in numerous artificially narrow antitrust markets. Second as pointed by Audrestch et al. (2001) and Evans and Schmalensee (2001), standard antitrust principles are suited to stable industries where competition is mainly in price but need to be adapted to deal with innovation and the Schumpeterian creative destruction competition. Third as pointed by Evans (2003) or Wauthy (2008), standard antitrust principle are suited to one-sided markets but need to be adapted to deal with two-sided markets where there are strong interactions between each side of the markets.

In addition to this difficulty, there are several other drawbacks and risks with the alignment on antitrust principles. First, the use of a legal concept is always linked to the objective of the legal rule for which it is used. As the objectives of antitrust and sector regulation may differ (recall that the objective antitrust is the maximisation of long term consumer welfare whereas the objectives of sector regulation may be broader), the interpretation of a same antitrust concept may also differ creating legal confusion and uncertainty. Second, antitrust principles are complex and have been under significant reform recently moving from a legalistic form-based approach towards a more economic effects-based approach. Third and linked to institutional issues, antitrust principles do not constrain the NRAs very much in their actions (as many NRAs adapt them quite flexibly) but they do constrain the

15. Note also that antitrust principles are insufficient to base sector regulation because they detect all kinds of market power and are not able to screen the subset among them –hard core market power- that justify regulation. Thus, mere antitrust principles should be completed by other elements that have nothing to do with antitrust principles, i.e. the test of three cumulative criteria.

Commission in its review of NRAs' draft decisions (as the Commission always looks at the impact of its comments on its pending and future antitrust cases).

Therefore, critics like Larouche (2000:359-403) and Richards (2006:220) propose to base sector regulation on the concept of "bottleneck"¹⁶. Indeed, the first best would be to base sector regulation on specific concept (like bottleneck) linked to the goals of sector regulation. This would not evacuate the fundamental regulatory questions as it is the case today and alleviate confusion between antitrust and sector regulation objectives.

A second reason of the regulatory failures is that the institutional design has not been sufficiently thought through by the European legislator. In general, regulatory authorities have an incentive to over regulate (because of the well-established problems of state bureaucracy implying that authorities have a tendency to increase their activities), and the regulatory brakes in the current law (Commission review of the NRAs draft decisions and possible national appeal against NRAs' decisions) are not efficient enough to counter-balance the tendency to over-regulate. More critically, NRAs do not have incentives to take into account dynamic side of competition (investment, innovation) but only the static side (evolution of price, number of competitors) because the indicators on which they are evaluated are mainly static (level of price, concentration index)¹⁷. In other words, NRAs are performing relatively well with regard to their incentives, but such incentives are not aligned with today long term welfare of the consumers. Those incentives should be changed by reinforcing the regulatory brakes and by evaluating the NRAs on more dynamics indicators.

5 OPTIMAL BALANCE BETWEEN RULES

After having presented the system of competition law and electronic communications sector regulation as well as its application during the last years, it is now time to take a more normative approach determining what is the optimal balance between both sets of rules.

Rationale for public intervention in electronic communications

Public authorities should aim to maximise the welfare of their citizens and markets are supposed to be the best means to ensure such welfare maximisation. Thus,

16. Note that in the current sector regulation, there is already an implicit notion of bottleneck during the market selection step with the three criteria test.

17. See the yearly Commission implementation reports, available at http://ec.europa.eu/information_society/policy/ecomms/implementation_enforcement/index_en.htm
More dynamic indicators are currently being designed by the British NRA to evaluate the impact of the Strategic Review: Ofcom Statement of 8 February 2006 on evaluating the impact of the Strategic Review of Telecommunications.

governments should intervene only when the mere functioning of the markets does not deliver this objective.

Economists distinguish three types of market failure. (1) The first market failure is the presence of excessive market power (like a monopoly operator) which may lead to excessive price or too little innovation. Excessive market power is caused by legal and economic entry barriers or by anticompetitive behaviours¹⁸. (2) The second market failure is the presence of an externality (like network externality or tariffs-mediated externality) which may lead to under-consumption in case of positive externality and over-consumption in case of negative externality. For instance, less than the optimal number of customers may decide to join a network if new customers are not compensated, when joining the network, for the increase of welfare they create to the already existing customers. (3) The third market failure is the presence of information asymmetries (e.g. the absence of knowledge of the price) which may lead to under or over consumption.

In telecommunications, the two first categories lead to the standard distinction between (1) the one-way access (or access model) which concerns the provision of bottleneck inputs by an incumbent network provider to new entrants and (2) two-way access (or the interconnection model) which concerns reciprocal access between two networks that have to rely upon each other to terminate calls (Armstrong, 2002, Laffont and Tirole, 2000, Vogelsang, 2003).

In addition, each type of market failure may be structural and result from the supply and demand conditions of the market, or may be behavioural and artificially (albeit rationally) 'manufactured' by the firms, leading to the two-by-two matrix below. Since the decline of the Structure-Conduct-Performance paradigm in industrial economics, it is now recognised that non-strategic and strategic market failures are closely linked together and that structure influences conducts as much as conducts influence structure. However, it remains possible (and useful when choosing between the different instruments of public intervention) to identify the causes of the non-efficient market results and to distinguish between structural and behavioural market failures.

18. The concept of economic entry barriers is controversial in the literature with two opposing views explained in McAfee et al. (2004). The narrow (Stiglerian) view limits the barriers to the absolute cost advantages of the incumbents (e.g. access to best outlet in town, or consumer switching costs) but excludes all entrants' costs that have also been borne by the incumbents (e.g. high fixed and sunk costs). The broad (Bainian) view extends the concept of barriers to all factors that limit entry and enable incumbents to get a supra-normal profit, hence includes absolute cost advantages but also economies of scale and scope.

Table 3: Market failure susceptible to public intervention¹⁹

	Structural/non-strategic	Behavioural/strategic
Excessive market power	<p><i>Cell 1</i></p> <ul style="list-style-type: none"> - Bainain entry barriers: High and sunk fixed with uncertainty - Stiglerian entry barriers: Important absolute cost advantages (e.g. switching costs) - Legal barriers <p>→ <i>One way access (access model)</i></p>	<p><i>Cell 2</i></p> <ul style="list-style-type: none"> - Reinforcement of dominance - Vertical leveraging - Horizontal leveraging
Externality	<p><i>Cell 3</i></p> <ul style="list-style-type: none"> - Network effects - Two-sided markets <p>→ <i>Two way access (interconnection model)</i></p>	<p><i>Cell 4</i></p> <ul style="list-style-type: none"> - Strategic network effects (e.g. loyalty program or tariff mediated externality)
Information asymmetry	<i>Cell 5</i>	<i>Cell 6</i>

Choice between competition law and sector regulation

To tackle these different market failures, public authorities dispose of several legal instruments (in particular competition law, sector regulation, consumer law) that they must combine in the most efficient way. Specifically to find the appropriate balance between competition law and sector regulation, regulators should determine the main differences between both instruments, confront them with the market failures to be dealt with and accordingly decide which instrument is the most efficient in solving the market failure.

Many authors consider the main difference between antitrust and sector regulation is that the former aims at maintaining the level of competition whereas the latter aims at increasing the level of competition. To me, the difference is not always verified in practice as some antitrust decisions, in particular merger decisions whose some have been endorsed by the Community Courts (in particular in the *Energias de Portugal* case), aimed at strengthening the level of competition in the market²⁰.

19 This table is only a stylised and static view of the market reality that is more a starting point to raise the relevant questions than a check list to provide definitive answers on the scope of public intervention. Telecommunications markets are intrinsically dynamic and a rationale based on static view may lead to inappropriate and over-inclusive public intervention. For instance, a high level of market power does not always lead to long term inefficiencies justifying intervention.

20. On the differences between sector regulation and antitrust law, see also Laffont and Tirole (2000:276-279), Katz (2004).

I think that the two principal and related substantive differences between anti-trust and sector regulation are that (1) sector regulation mainly deals with unsatisfactory market structures whereas competition law deals with unsatisfactory firms' behaviours, and (2) the burden of proof for sector regulation to intervene on the selected markets²¹ is lower than antitrust law.

Because of the *first* difference (related to structure and behaviours), it is efficient that sector regulation deals with structural market failures and competition law deals with behavioural ones. Because of the *second* difference (related to the burden of proof), it is efficient that the factor used to select markets for regulation is set at a very high level because once a market area is selected, intervention is relatively easy. In other words, the regulation should focus on market where the risks of type I errors (false condemnation) are low and the risks of type II errors (false acquittal) are high. This is especially important because the costs of type I errors are large in dynamic markets²². Taking both arguments together, any possible regulation should be limited to cells 1 and 3 of Table 3, i.e. structural market failures due to excessive market power and externalities²³.

6 CONCLUSION

I would like to sum up with four main points that policy makers and authorities should have in mind when intervening in the electronic communications sector.

First, antitrust authorities are justified to intervene more intensively in the electronic communications sector (or more broadly in network industries) than in the other sectors of the economy, but their interventions should always be based on sound economic rationale and the same extensive approach should not permeate those other sectors of the economy.

Second, sector regulation should meet good governance principles: flexibility, objectivity, transparency, harmonisation, proportionality and legal certainty. NRAs should be cautious not to automatically extend a regulatory approach suited for infrastructures laid down under legal monopoly conditions to new Schumpeterian infrastructures and should be less hypocritical about their actions (by not invoking the mantra of de-regulatory rhetoric when they are in practice increasing regulation for good or for bad reasons).

21. The burden of proof for sector regulation to intervene is high when all steps of Table 1 are considered, but is low when steps 1 and 2 are passed.

22. Hausman (1997) valued the delay of the introduction of voice messaging services from late 1970s until 1988 at USD 1.27 billion per year by 1994, and the delay of the introduction of mobile service at USD 100 billion, large compared with the 1995 US global telecoms revenues of USD 180 billion/year.

23. In addition to the two substantive differences between antitrust and sector regulation, the main institutional difference is that sector regulation is only applied by national authorities whereas antitrust law is applied by national authorities but also a European one (the Commission). With that, some consider that antitrust law may apply in addition to sector regulation when NRAs have not performed their tasks adequately. That was the case in the *Deutsche Telekom* Decision in 2003 and of the *Telefonica* Decision of 2007. However, with Larouche (2005) I think it is a better institutional design that regulatory decisions are controlled directly by judicial bodies (a national Court or ultimately the European Court of Justice) instead of an antitrust authority.

Third, sector regulation and competition law are converging but some important divergences remain and those should determine the scope of sector regulation. Thus sector regulation should only be applied when it is more efficient than antitrust to solve market failures, i.e. when there are structural (economic or legal) entry barriers or network effects.

Fourth, it would have been better not to align sector regulation on antitrust principles, but to base regulation on an independent economic concept linked to the goals of regulation (like the concept of bottleneck). In any case, the alignment of methodologies should not necessarily lead to alignment of objectives, and should not evacuate the fundamental regulatory questions to be solved: Do regulators want to strive for infrastructure-based competition or service-based competition? Do they want short-term competition or long term competition? Do they want to do industrial policy or not ?

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