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Structural Separation or Integration in Italian Fixed Tlc: Regulatory and Competition Issues

Alberto Prandini*

Abstract

In this paper we investigate the restructuring process of the Italian fixed TLC industry, which the recent debate has deemed as far from being satisfactorily completed. We will focus on the feasibility and desirability of alternative vertical structures for the Italian fixed communication industry, considering in particular the structural separation – as opposed to integration – of the former monopolist.

After a introductory discussion of the most critical characteristics of the sector and a brief portrait of the Italian industry for fixed telecommunication services, we focus on the regulatory framework currently in force. This body of regulation is inspired by facility-based competition, in line with EU directives, and characterised by vertical integration coupled with accounting separation between network and commercial costs: the analysis stresses both its (actual and potential) advantages as well as drawbacks from the point of view of regulatory as well as competition policies, finding substantial empirical evidence of anticompetitive behaviour.

We will then consider an alternative industry design, implying structural separation of the network from incumbent's commercial divisions, as inspired by service-based competition. In the final section we conclude arguing in favour of ownership unbundling of the network.

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Vertical Integration, Unbundling, Telecommunications, Italy.

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INTRODUCTION

Following technological and theoretical developments, in the Nineties many previously monopolized network industries were gradually opened to some form of competition: among the others, telecommunications undoubtedly represents a seminal example of liberalized utility.

In the European context, the liberalization process has often been driven by EC directives, with the main exception of the pioneering experiences in the United Kingdom. Within the boundaries of the framework depicted by European Institutions, several solutions have been adopted throughout the Continent to regulate the same industry, according to country-specific industrial needs and socio-political perceptions.

Policy makers, scholars and regulated firms seems to have quite different opinions with regard to the degree of efficiency achieved by the (still ongoing) process of liberalization of European telecommunications; such differences are only partially explicable considering the different interest they represent.

The European paradigm of facility-based competition appears to have slowed down the pace towards full competition, instead of gaining momentum. In Italy, in particular, dissatisfaction is mounting about the degree of effective competition achieved in fixed telecommunications and, inevitably, the regulatory design adopted in the Nineties is subject to harsh criticisms.

Several real life events (in Italy as well as in other Member States) confirm the theoretical predictions of strategic behavior on the part of the vertically integrated incumbent in order to deter entry. Both the National Regulatory Authority (Agcom) and the Italian Competition Authority (Agcm) have played a major role in the promotion and protection of competition, mitigating or eliminating the anticompetitive effects of incumbent's conducts. Notwithstanding the considerable efforts of Italian Authorities, the market of fixed telecommunications in Italy still show the highest incumbent's market share all around Europe. For this reason, in recent times advocates of structural separation have grown both in number and in determination.

In this paper we build over the recent debate on the feasibility and desirability of alternative vertical structures for the Italian fixed communication industry, considering in particular the structural separation of the ex-monopolist. After a brief introduction to the industry of fixed telecommunications, the analysis will first focus on the regulatory framework currently in force, characterized by vertical integration with accounting separation between network and commercial costs, stressing both its advantages and its potential drawbacks from the point of view of regulatory as well as competition policy. The study will then consider alternative industry design, in particular structural separation of the network from incumbent's commercial divisions. In the final section we conclude.

1. INDUSTRY CHARACTERISTICS

Telecommunications¹ are undoubtedly an example of network industry. Fixed Tlc, in particular, imply the existence of an ubiquitous network of lines and switches (or, more recently, routers) capable of reaching each user and to interconnect her with all other customers; furthermore, for many years the prevailing technology for the development of Tlc networks has been the deployment of copper wires or other wire-line technologies; only in recent times wireless technologies have represented a substantial breakout in the quite consolidated market of tlc network equipments. The creation of such a network implies huge investments and hence fixed and often sunk costs. Given these characteristics, it is no surprise that Tlc networks have long been considered as non competitive activities², whose duplication is not economically feasible on the one hand, and socially desirable on the other hand, since a monopolist could meet the market more efficiently than any combination of competing firms: for this reasons, the network represents a so-called *essential facility* for any Tlc operator aiming to compete against the incumbent owner of the infrastructure.

Furthermore, Tlc represents the academic example of sector enjoying demand-side scale economies, or network effects, which means that the value of Tlc services (hence, demand for the Tlc company) is increasing in the number of customers (hence, in the consumption of her services).

The need for costly wired infrastructure, especially at the local level, and the presence of network effects often lead to the claim that fixed Tlc networks have to be considered as natural monopolies; this is the one of the main reason why Tlc were State-owned monopolies in the majority of European Countries up to the late Eighties. However, the emergence of technological innovations on the one side, and continuous refinements of economic literature on the other side, eventually forced economists and policy makers to revisit traditional natural monopoly theories and to re-examine policy implications stemming out from them. The liberalization wave which took pace in Europe in the last decade could thus be considered as an aftermath of such technological innovations and changes in the mainstream intellectual and scientific climate³.

¹ Tlc, henceforth.

² Any economic sector is made up of activities or 'components'; many of them produce intermediate goods or services which are used as input in other activities. It is often difficult to assess the actual nature of the components of the sector, since in the vast majority of the cases several specific factors have to be considered on a case by case basis, such as demand level, income level and distribution, geography, etc. On this point, compare also OECD [2001], p. 3, § 12.

³ Admittedly, the process of liberalization should be read in conjunction with the privatization one. Under this broader perspective, several other factors played a role, such as dissatisfaction for the economic and financial performance of state-owned companies, the resulting pressure on public expenditure and in several cases, such as in Italy, the need for curing unsustainable structural imbalances in public finance.

2. THE ITALIAN MARKET FOR FIXED TLC

The Italian case constitutes an example of late liberalization: indeed, it took five years to implement the European Directive n. 90/388/Cee (Competition in Tlc services market) with D.lgs. n. 103/1995. Two years later, D.p.r. n. 318/1997⁴ implemented six European Directives on electronic communications⁵. Legge 31 luglio 1997, n.249 provided economic agents with the necessary legal certainty and guarantee of political independence by establishing the *Autorità per le garanzie nelle comunicazioni*⁶, which became fully operative in the second half of 1998.

Under this settings, it is clear that any valuation of the Italian market has to be carefully carried out and that it is hardly impossible to discern clear cut conclusions from this still ongoing process, due to the short period of time we can observe⁷. However, several critical issues have emerged in recent years which deserves analytical study, given the potentially enormous harmful impact they could have on the competitive process.

As it will emerge in the following of the paper, a number of competitive problems have risked to jeopardize the efforts towards the creation of a competitive market. As a first approximation, the weakness of the liberalization of the Italian fixed Tlc market could be derived by the analysis of incumbent's market share⁸. In particular, the dynamics of Telecom Italia's market share is quite peculiar when compared with other major European Country incumbents' ones: whilst all around the Continent liberalization has provoked a progressive erosion of the ex monopolist's share, the Italian incumbent was successful in her winning-back strategy over the last two years, after an initial decline down to 83% of the market in 2001.

⁴ In order to avoid infringement procedures by the European Commission, the Parliament enacted Legge n. 650/96 which simplified directive implementation procedure by merely requiring a Ministry Regulation.

⁵ Namely: n. 95/51/Ce (Liberalization of cable television networks); n. 95/62/Ce (Application of Open Network Provision to voice telephony); n. 96/2/Ce (Liberalization of mobile and personal communications); n. 96/19/Ce (Implementation of *full competition* in Tlc markets); n. 97/13/Ce (Authorizations and individual licensing), n. 97/33/Ce (Universal service and interoperability).

⁶ Agcom, henceforth.

⁷ The international comparison suggests that a longer period is necessary for achieving full liberalization: for example, it took almost ten years to appreciate the emergence of substantial competition against British Telecom. Similarly, PROSPERETTI [2004] reports that in 2001, 18 years after the AT&T split, the ex-incumbent still retained 37% of the long-distance call market and the C3 ratio was approximately 0.7; again, Baby Bells still retained 85% of access to the physical network.

⁸ We are fully aware of the imperfections inherent in a scientific approach based on market shares; furthermore, liberalization processes around Europe began in different moments, so that the comparison at a certain point in time could be, at least to a limited extent, misleading. For this reason, we would like to make clear the data presented in this section should merely be read as a signal rather than an evidence.

Figure 1. Dynamics of fixed Tlc incumbent's market share

	2000	2001	Δ	2002	Δ	2003	Δ
British Telecom	73.0	69.0	-4.0	64.0	-5.0	62.7	-1.3
Deutsche Telecom	90.0	82.5	-7.5	76.3	-6.2	73.0	-3.3
Telecom Italia	89.0	83.0	-6.0	83.4	+0.4	85.0	+1.6
Telefonica	90.0	87.0	-3.0	86.0	-1.0	83.5	-2.5

Source: PONTAROLLO [2004]

The aggregate data contained in Figure 1 necessarily ignores the different trends experienced by distinct Tlc services: by way of example, Telecom Italia has been facing a quicker deterioration of her market share in the business submarket rather than with residential services. Notwithstanding this drawback, the figures are interesting in so far as they capture the atypical trend of Telecom Italia share of the market, as compared with other European incumbents.

In order to refine the market share approach for the evaluation of the efficacy and effectiveness of the liberalization process, we propose a further indicator which compares the Italian fixed Tlc market with the average of other Member States. The reasoning behind this indicator is that the existence of a high incumbent market share may be due either to partial opening of the national market (in terms, *inter alia*, of services available, population and geographic area) or to the persistence of a super-dominance situation in a market that appears fully opened to competition. Under this perspective, '*formal*' liberalization in terms of legal provisions and technical requirements (value [a] in Figure 2.) may differ from the '*substantial*' ability of new entrants to constitute a serious and credible competitive constraint on the incumbent and hence to gradually erode her share of the market (value [c] in Figure 2.), within the boundaries of the existing '*formal*' competitive environment⁹.

The comparison between the Italian and the average EU experience highlights a relative weakness of the former with respect to the results achieved by the latter. In the local call market, the value added of this indicator is maximized: at first sight, incumbent market share is very similar in both Italy and the EU, leaving other licensed operators¹⁰ with about 10% of the market for local calls; however, in the EU the average share of population which is enabled to choose among three or more Tlc companies is far lower than in Italy (39% against 85%). Although with less evident proportion the same reasoning applies to both long distance calls and international calls.

Summing up, this means that in Europe a relatively large proportion of the rather small share of 'competition-enjoying' population address to entrant Olo. On the

⁹ The same view is expressed in FROVA AND PONTAROLLO (eds.) [2004], p.38: "*garantire il diritto 'legale' di accesso a un mercato dominato da un operatore ex monopolista è una condizione necessaria ma non sufficiente, perché si crei una situazione di concorrenza effettiva*".

¹⁰ Olo, henceforth.

contrary, in Italy the vast majority of the population, notwithstanding the formal possibility to switch to another Tlc operator, found it preferable to remain with the incumbent.

Figure 2. Formal and substantial opening to competition in fixed Tlc calls.

	Population (%) having choice opportunity among three or more Tlc operators [a]		Incumbent market share (%)		Olo market share (%) [b]		Olo market share (%) for 'competition- enjoying' population [c] = [b] / [a]	
	Ita	EU	Ita	EU	Ita	EU	Ita	EU
	Local	85	39	93	90	7	10	8
Long-dist.	100	83	76	77	24	23	24	28
International	100	83	60	75	40	25	40	30

Source: elaborations on AGCOM [2002a]

We recognize that the data presented above do not capture entirely the complexity of the phenomenon; indeed, it would be rather utopian to extract a serious and exhaustive comment on the liberalization of fixed Tlc by simply relying on a couple of synthetic indexes¹¹. It is obvious that such aggregate figures should not be interpreted as ultimate and unquestionable evidence, but merely as some clues that may suggest the existence of critical issues. To put it in clinical terms, the preceding discussion is not the diagnosis of the disease, but the assessment of some symptoms which deserves further investigation. Once the symptoms have been carefully scrutinized, a conclusive analysis can be drawn and, possibly, appropriate remedies suggested. This is exactly what we are going to carry out in the following of the paper.

3. VERTICAL INTEGRATION VS. STRUCTURAL SEPARATION

There is no need to remember that in past decades network industries were often characterized by a purely monopolistic structure, in the shape of either public monopoly or private undertaking granted exclusive rights. Under this setting, the

¹¹ We are also prepared to acknowledge that the figures are now quite outdated and thus may not represent the current market trend: again, they still provide the reader with useful insights about the competitive environment that Tlc operators were facing in the recent past.

attention of the regulator¹² was primarily focused on final prices, since the main concern was: on the one hand, to prevent the exploitation of monopoly power at the expenses of final consumers by fixing a ‘fair rate of return’ on the capital invested that the incumbent could not exceed and, on the other hand, to ensure the universal provision of the service at uniform and affordable price.

During the last forty years, technological advances have weakened the natural monopoly argument, encouraging many States to proceed towards the creation of competitive Tlc markets. Notwithstanding technical progress, some elements of natural monopoly are still present, hence preserving the scope for some form of public intervention. In the Tlc sector, the role of the Government and other public bodies has often been in the shape of regulation of the conditions for the access and interconnection to the vertically integrated incumbent’s network, rather than in direct ownership or operation of the non competitive (i.e. network-related) activities.

In the following, we present the different approaches to Tlc regulation which may be adopted by policy makers. In the first part, the analysis starts from the concept of facility-based competition which inspires the current EU regulatory framework. Under this setting, structural separation has no value added in terms of efficiency, leaving to access regulation and antitrust enforcement the main role of pro-competitive policy instruments. Indeed, the industry structure prevailing in the European continent is characterized by vertically integrated incumbents competing with entrant Olo in the downstream Tlc service markets.

Integration bring about several advantages but, unfortunately, generates perverse incentives on the part of the incumbent in order to raise structural entry barriers and engage in anticompetitive strategic behaviors: both *ex-ante* sector-specific regulation and *ex-post* competition law have to deal with these drawbacks, limiting or eliminating socially costly restrictions of competition. The benefits and limits of this approach are studied under both the theoretical and empirical perspective, presenting relevant real-life case studies which involved allegations by the Competition Authority of anticompetitive conduct on the part of the Italian incumbent, Telecom Italia, and regulatory difficulties incurred by the National Regulatory Authority.

Although the time period elapsed since the opening of Tlc markets is too short to draw clear-cut uncontested conclusions, it is nevertheless undeniable that some worrying trends towards ‘re-monopolization’ have emerged¹³. For this reason, in the second part the analysis focuses on alternative regulatory design, namely a structural approach relying on structural separation and inspired by the service-based competition paradigm. Again, theoretical predictions are confronted with real-life experiences or with the debate arising from disintegration proposals.

¹² The term regulator is used in a broad sense, not confined to sector-specific Authorities, but including also ‘political’ regulators such as the Ministry or the Government.

¹³ FROVA AND PONTAROLLO (eds.) [2004], p. 35, considers the expression ‘re-monopolization’ as not representative of industrial reality, since it implies the existence of a truly competitive market which tends to concentrate (again) in a few-firm oligopoly.

3.1. Facility-based competition and vertical integration

When coming to the design of the liberalization process of fixed Tlc, a basic choice has to be made between two competitive paradigm, namely *facility-based* and *service-based* competition. In the first case, competing networks progressively emerge as a result of investments by entrant Olo. In the second case, competition is achieved by creating, as far as possible, a level playing field for entrants relying (almost) solely on the incumbent's network. Since regulatory and competitive concerns differ quite radically in the two cases, the subsequent policy must be coherent and consistent with the adopted competitive paradigm.

The designers of the present European regulatory framework, since the *full competition* Directive n. 96/19/Ce, have decided to pursue the more ambitious goal of facility-based competition. In their view, this is the only sort of competition which is sustainable in the long term, since entrant Olo are released from dependence on the incumbent's essential facilities, and the incentive to interconnect eliminates incentives towards strategic behaviors¹⁴.

Admittedly, the distinction between the policy actions inspired by one or the other of these two approaches is not so clear-cut; in particular, it is often argued that service-based competition, in the short and medium term, could be instrumental to achieve the more genuinely sustainable facility-based competition in the long term: in fact, granting Olo the right of access on a fair, non discriminatory and cost oriented basis to the existing incumbent's network is nearly a necessary condition to enable them to invest in the development of their own network. Indeed, this is the position of the European Commission in the Access Directive¹⁵, and recently confirmed by European Competition Commissioner Mario Monti¹⁶.

From the point of view of the regulator, a circular problem is likely to arise: cost-oriented access for entrant Olo is a precondition for raising profits and thus for finance infrastructure investments; however, the low level of access charges may provide a distorted incentive on entrants to free-ride on incumbent's essential facilities, hence hindering the intended transition from service-based to facility-based competition. It is clear that, in a dynamic perspective, regulatory interventions needs to be finely tuned, both in timing and in asymmetric favorable treatment, in order to trade off the short term competitive benefits flowing from

¹⁴ In the early days of EU Tlc liberalization, the orientation was towards service-based competition, in contrast with the British process which was inspired by the facility-based paradigm. Since the Commission issued the *full competition* Directive, the two approaches have followed the same inspiring criterion.

¹⁵ Directive 2002/19/Ce, paragraph (19) of the opening considerations: "*The imposition by national regulatory authorities of mandated access that increases competition in the short-term should not reduce incentives for competitors to invest in alternative facilities that will secure more competition in the long-term*".

¹⁶ MONTI [2004], p. 3: "*Sono convinto che sia necessario offrire i corretti incentivi ai nuovi entranti, soprattutto nel medio e nel lungo periodo, affinché cerchino di costruire il proprio vantaggio competitivo attorno all'esistenza di proprie infrastrutture. Ma sono anche convinto che l'accesso sia nel breve termine indispensabile per poter arrivare gradualmente e progressivamente a forme di concorrenza più sostenibili, come quella basata sulle infrastrutture alternative*".

access rights to essential facilities with its potential long term drawback, namely the disincentive to invest in alternative infrastructure¹⁷.

Looking at the European context, the choice of the facility-based competition paradigm is justified *inter alia* by the presence of a relatively widespread network of cable television operators. Hence, the alternative infrastructure already was in place and ready to exert competitive pressures on the incumbent network, requiring (relatively) small investments for technological modifications of physical facilities. On the contrary, the Italian starting situation was quite different since cable television network did not exist and are still lacking. This may be one of the factor which contribute to explain the delay in the decline of incumbent's market dominance.

The policy implication for the liberalization process of fixed Tlc logically flowing from the facility-based competition strategy is the preservation of a vertically integrated incumbent operator, thus saving the efficiency benefits generated by the integrated supply of network and commercial services. In fact, in the long-run competition will be secured by competing infrastructures whose owners find it mutually advantageous to interconnect, thus leaving no room for gains from structural separation. Indeed, advocates of facility-based competition deeply rely on innovation and appropriate regulatory and competition policies in order to facilitate the transition towards a genuinely competitive market for fixed Tlc¹⁸.

¹⁷ This is just a particular application of the broader issue related to the proper timing of regulatory intervention in a dynamic perspective. The general view on this important topic is often summarized as an evolutionary approach to network industry regulation: in the first phase the market is monopolistic and regulators struggle to prevent exploitation of market power in retail markets. In the second phase, competition is progressively introduced and regulation is mainly focused on retail and interconnection prices, universal (or public) service obligations; in order to promote competition, regulation is often asymmetric, i.e. more favourable to entrants, and quite pervasive: indeed, it is often claimed that during this phase deregulation is carried out by means of more regulation. In the third phase, when the competitive process is well established, heavy regulation is gradually abandoned in favour of light-handed regulation and competition law; remaining regulation will deal with specific issues such as allocation of scarce resources (spectrum frequencies, numbers, rights of way, etc.). On the contrary, the argument was made by several authors (compare LAROCHE [2002], p.141) that in the Tlc sector it is not possible to rely on competition law alone; this scepticism originates from the peculiar characteristics of the Tlc industry, namely the presence of huge fixed and (often) sunk costs, localized bottlenecks and network externalities. The 2002 regulatory framework seems to be aware of this matter: in fact, although it generally adheres to the evolutionary approach delineated above, it does not give up the possibility of retaining *ex ante* regulation in markets that in the long run appear unable to achieve and sustain a satisfactory degree of competition, according to the results of periodic market analyses carried out by national regulation Authorities.

¹⁸ This view is clearly testified in PROSPERETTI [2004], p.3, where doubts are shed over the (uncertain) social benefits achievable by means of structural separation, as compared to the (assured) social costs, and the lack of alternatives for public policy other than finely tuned regulatory and antitrust interventions: “[T]rovo di limitato interesse pratico l’idea che occorra imporre una separazione strutturale obbligatoria della rete di accesso. Il dibattito sul tema credo abbia convinto i più che ai costi, certi, di una tale separazione si contrapporrebbero benefici certi per i concorrenti, ma assai incerti per la società. Insomma davanti alla public policy non ci sono allettanti scorciatoie, ma un’attività onesta, poco eccitante forse, ma in pratica utilissima alla collettività, di regolazione e di intervento antitrust”.

Preserving the vertically integrated structure of an incumbent network operator competing in the provision of liberalized Tlc services implies a major role for access regulation and antitrust enforcement; for this reason, it is often considered a behavioral approach, in contrast with the structural nature of vertical ownership or operational separation. The debate around the most appropriate vertical structure for fixed Tlc industry is quite lively, since both options have several advantages and drawbacks which make it almost impossible to determine an objective hierarchy; further, country-specific and market-specific factors may reverse the relative superiority of an alternative over the other one.

From the point of view of the social planner, vertical integration in network industries such as Tlc may result beneficial in terms of efficiency, assuming the incumbent does not engage in anticompetitive behavior. In fact, retaining a monopolistic structure in the upstream network-related activities may enhance the exploitation of economies of scale, especially at the level of the local loop. On the other hand, the regulator must guarantee that network effects are not forgone by the refusal to interconnect, since the incumbent find it rational to deny access to the network to competitors. Furthermore, vertical integration ensures that economies of scope are exploited: scope economies may arise because of the removal of potential hold-up problems with reference to relationship-specific investment in infrastructures; further, they may improve information availability, thus reducing the scope for free-riding and by consequence enhancing the efficiency of incentive contracts. Another possible source of economies from integration is related to the elimination of double marginalization problems due to the exercise of market power at subsequent levels of the industry, or the (downstream) use of inefficient input mix due to imperfect competition in an input market.

Under a dynamic perspective ¹⁹, vertical integration and the related third party access regulation is also beneficial since it should induce efficient investments in infrastructure by entrants, provided that access charges are set to the socially optimal level²⁰. Furthermore, optimal incentives to invest in technological innovation are preserved, because of the long-run competition between networks.

Under this setting, the most appropriate policy strategy consists in the regulation of (mandated) access conditions: accounting separation should provide the regulator with the required information to fix access tariffs and conditions on a fair, transparent, non-discriminatory and cost-oriented basis, leaving *ex post* competition law a supervision role. This is indeed the orientation of the European

¹⁹ Before turning the attention to dynamic advantages, from a static point of view it should not be omitted that vertical integration avoids one-shot costs arising from separation. However, this should be considered more as a disadvantage of structural separation rather than a genuine advantage of integration.

²⁰ As it will be soon demonstrated, information asymmetries between the Regulator and the incumbent make it almost impossible to set such optimal access charge, potentially giving rise to regulatory failures which may prove very costly for society. For a general discussion of regulation under asymmetric information settings the reader could refer to MARZI *et al.* [2001], ch. V and Appendice 3., and to CHURCH AND WARE [2000], ch. 26.

Regulatory framework for electronic communications, which considers accounting separation the proportional measure for ensuring non-discrimination and cost orientation in access conditions individually negotiated or proposed in the annual Reference Interconnection Offer by undertakings designated as having significant market power and approved by the National Regulatory Authority.

The assumptions underlying the preceding discussion do not consider the existence of information advantages for the incumbent and the incentive for her to exploit such asymmetries by behaving strategically in order to restrict competition in the market. Anticompetitive conducts of this kind result in both regulatory and antitrust concerns, whose interplay eventually leads to serious damage to the opening of the market. It is quite obvious that *ceteris paribus* the effectiveness of the regulatory supervision is greater the easier the observation of actual capacity and quality of the non-competitive activity.

Before turning the attention to each of this strategic conducts separately, it is useful to stress that such abuses do not only hinder competition in the competitive activity, but make also more difficult the creation of alternative infrastructure at the ‘naturally monopolistic’ stage, since the integrated incumbent have no incentive to cooperate and interconnect with other (developing) networks.

With reference to the Italian case, the incumbent behaviors related to crucial issues (such as interconnection offers, local loop unbundling, rented lines, broadband services, etc.) present such blatant empirical regularity that they could be modeled in a three-step stylized archetype, aptly named 3D behavior model: deny, detail and delay²¹.

According to the 3D strategy, the incumbent in the first place refuse to satisfy entrants’ demand (*deny*). Hence, the Regulatory Authority is forced to intervene but the incumbent may unduly exploit her remaining discretion within regulatory boundaries to submit for approval highly-detailed economical conditions or technical requirements that the Authority has to scrutinize (*detail*). When the preceding strategy cannot be further implemented, the incumbent engage in delaying tactics, in order to postpone as far as possible the implementation of regulatory measures (*delay*).

In general terms, the vertically integrated firm has a strong incentive to deny access in the first place and to discriminate between her downstream subsidiary and independent operators in the second place. In particular, it has to be stressed that discrimination may be in price as well as in quality: the latter is especially difficult to unveil, but surely is at least as effective as the former in terms of anticompetitive effects.

Furthermore, the integrated incumbent has no incentive to invest in new network capacity whenever this amount to an essential facility for competitors. For example, the incumbent are likely to defer upstream investments for the implementation of carrier pre-selection, since it increases competition downstream; unfortunately, the Regulator may face dramatic difficulties to

²¹ FROVA AND PONTAROLLO (eds.) [2004], p. 81.

provide the incumbent with the right incentives to invest because of action and information asymmetries²².

All the anticompetitive features highlighted above come up when analyzing Telecom Italia behavior with reference to interconnection offers. The regulatory framework imposes an obligation to publish a Reference Interconnection Offer²³ on undertakings designated as having significant market power, which is subject to revision and approval by the National Regulator, in accordance to the principles of transparency, non-discrimination, cost-orientation and service unbundling²⁴. Following approval, the terms and conditions are applied to past transactions which took place during the time period the Rio was initially referred to.

Figure 3. Time elapsed between approval and (retroactive) entry into force of Rio.

	1998	1999	2000	2001	2002	2003
Delay months	16	14	20	15	15	9

Source: FROVA AND PONTAROLLO (eds.) [2004], p. 83.

Without need to go into details, the data provided in the Figure 3. are self-explaining: it emerges clearly in the table that the average ‘delay’ between the approval date of the Rio and its entry into force (January, 1) amounts to 15 months, thus generating great uncertainty in business planning for actual and potential competitors.

In this case, the 3D strategy proved highly effective in delaying the emergence of competition. It should be noted that delaying tactics do not involve the trespass of legal (formal) deadlines, but more subtle (substantial) obstructing behavior, such as instrumental interpretation on favorable terms of regulatory recommendations, partial misapplication of norms and decisions, or adding technical and economic details in order to increase the complexity of the document²⁵. The endorsement of each Rio, hence, required subsequent Authority resolutions and related implementation measures on the part of Telecom Italia.

The discussion of Rio approvals is also illuminating with respect to the antitrust implications of incumbent’s 3D behaviors. In several occasion not only the extended time period have constituted a competitive problem, but also the very substance of the interconnection conditions has been deemed as anticompetitive.

²² Compare OECD [2001], p.17, § 65.

²³ Rio, henceforth.

²⁴ Up to today, the prevailing market conditions have lead the Authority to deem Telecom Italia as having significant market power in several Tlc markets: from local access to connectivity for Internet Service Providers, from business to residential users services, from voice to data transfer services, from narrow to broadband markets, etc.

²⁵ It should be recognized that also Agcom reaction time played a role.

The first example dates back to the early days of liberalization²⁶: Albacom, an entrant Olo, was refused supply of leased lines on grounds other than technical impossibility: in fact, Telecom Italia held that the supply of the requested lines was not possible because the relevant Ministry Decree²⁷ lacked any explicit provision for transmission capacities other than 64Kbps and 2,048Kbps, while at the same time supplying her own business customers with intermediate capacity lines. The Autorità Garante della Concorrenza e del Mercato²⁸ dismissed the argument and condemned Telecom Italia for refusal to supply²⁹.

Albacom also claimed that Telecom Italia applied discriminatory conditions since she supplied only her own customers with a cheaper alternative transmission means (namely, the D channel of Isdn network) and failed to publicize it as required to undertakings having significant market power. The Agcm ruled that this anticompetitive behavior constituted a serious breach of competition law³⁰.

In a second trial³¹, the plaintiff³² claimed that the incumbent operator engaged in several strategic behaviors: predatory pricing (prices below average total cost and even average variable cost), cross subsidies and internal/external discrimination. More precisely, Agcm upheld the argument that predation in the competitive market for access to the internet (to both residential and business users) was made sustainable by cross-subsidies from monopolized (by law or by fact) services of Pstn and Isdn networks³³. It also maintained the plea against loyalty rebates scheme and targeted discounts, which constituted an abuse because of the dominant position of Telecom.³⁴

Further, Telecom behavior was sentenced³⁵ as abusive with regard to unjustified requirements of renegotiation of a (not yet expired) interconnection agreement³⁶,

²⁶ Provvedimento n. 5248 [A178] *Albacom / Telecom Italia – Circuiti dedicati*, October 30, 1997, Bollettino n. 44/1997.

²⁷ At that time of the trial, rental fees for leased lines were regulated by the Decreto Ministeriale September 20 1996.

²⁸ Agcm, henceforth.

²⁹ Provvedimento n. 5248 [A178] *Albacom / Telecom Italia – Circuiti dedicati*: at § 98, letter a), this refusal to supply is deemed capable of limiting entry and hindering technical progress.

³⁰ Provvedimento n. 5248 [A178] *Albacom / Telecom Italia – Circuiti dedicati*: at § 99 this discrimination is considered particularly detrimental to competition in view of the immediate competitive advantage it confers to the dominant undertaking. At § 94, the Authority makes clear that discrimination is enabled by the integrated nature of Telecom: “*Telecom in qualità di gestore unico della rete pubblica di telecomunicazioni, si è avvalso della possibilità di impiegare un mezzo alternativo ai circuiti dedicati per offrire servizi di trasmissione dati liberalizzati a condizioni di costo più vantaggiose di quelle gravanti sui concorrenti*”.

³¹ Provvedimento n. 7978 [A255] *Associazione Italiana Internet Providers / Telecom*, January 28, 2000, Bollettino n. 4/2000.

³² Italian Association of Internet Providers (Aiip).

³³ Provvedimento n. 7978 [A255] *Associazione Italiana Internet Providers / Telecom*, § 89 and 173 with reference to business customers and § 112 and 191 about residential customers.

³⁴ Provvedimento n. 7978 [A255] *Associazione Italiana Internet Providers / Telecom*, § 173.

³⁵ Provvedimento n. 8481 [A280] *Tiscali – Albacom / Telecom Italia*, July 13, 2000, Bollettino n. 28/2000.

³⁶ Provvedimento n. 8481 [A280] *Tiscali – Albacom / Telecom Italia*, § 135.

and to the fixation of contractual conditions in new interconnection agreements intended to exclude competitors by squeezing their margins³⁷.

Again, Telecom behavior was sentenced on allegation of market pre-emption by Infostrada and other Olo³⁸: the plaintiff argued the incumbent engaged in strategic conduct in order to strengthen her dominant position on the upstream market for local access network and then leveraging it on the markets for data transmission and internet access services. According to the ruling, the exclusionary strategy was pursued by means of refusal to supply competitors (while providing the service to downstream commercial subsidiaries) and by violating non discrimination obligations³⁹.

This last chapter of this impressive anticompetitive record was written in 2004 by Agcm⁴⁰, which imposed 152 million Euros fine on Telecom Italia for exclusionary and discriminatory abusive conducts in several markets for fixed Tlc services to business customers and during the tendering procedure for the provision of a bundle of Tlc service to Public Administration. The alleged exclusionary effect was achieved by offering retail prices that equally efficient competitors cannot replicate for the very reason of the marginally lower level of interconnection charges. Telecom Italia was partially successful in challenging the ruling, since the Tar del Lazio decided to suspend the payment of the fine and to reject some of the Authority's argument⁴¹. Apparently, it would be necessary to wait in order to know the final word on the subject, since the Tar's decision could be appealed before the Consiglio di Stato.

In the preceding discussion of real-world antitrust cases, it emerged neatly that anticompetitive behaviors often involved practices such as predatory pricing, cross-subsidies, price and margin squeezing and violation of parity-of-treatment obligations: all of these have been made possible by the incumbent's vertical integration, enabling cost or revenue shifting from *quasi*-monopolistic upstream activities to competitive downstream ones (or *vice versa*)⁴². Looking at the dynamics of market shares in Tlc markets, the incumbents has succeeded in preventing the development of genuine competition at both the infrastructure and service levels, notwithstanding the best effort of the Competition and Regulatory

³⁷ Provvedimento n. 8481 [A280] *Tiscali – Albacom / Telecom Italia*, § 141.

³⁸ Provvedimento n. 9472 [A285] *Infostrada / Telecom Italia –Tecnologia Adsl*, April 27, 2001, Bollettino n. 16-17/2001.

³⁹ Provvedimento n. 9472 [A285] *Infostrada / Telecom Italia –Tecnologia Adsl*, § 209; compare also § 219 about abuses in traditional analogic leased lines market and § 262-263 about abuses in emerging broadband service markets (Adsl, x-Dsl and Sdh).

⁴⁰ Provvedimento n. 13752 [A351] *Comportamenti abusivi di Telecom Italia*, Novembre 16, 2003, Bollettino n. 47/2004.

⁴¹ Compare Tar Lazio, Sezione Prima, Registro delle Ordinanze 835/2005 and Tar Lazio, Sezione Pria, Dispositivo n.47/2005.

⁴² In this respect, the retail offers *Teleconomy 24* and *Teleconomy 24 Affari* constitutes a seminal example: in the first place, it was commercialized without properly informing the Authority; in the second place, it put into place a vertical squeezing strategy between (possibly below-cost) retail price and (relatively high) wholesale price. On April 1, 2001, in response to the petition by 26 Olo, the Agcom issued Resolution 179/01/Cons, sentencing Telecom Italia for abusive behaviour. Eventually, the issue has led to the issue of Resolution 152/02/Cons, discussed *infra*.

Authorities. Although the ineffectiveness of *ex-post* antitrust intervention may be quite obvious, it is remarkable, and remarkably sad, that even *ex-ante* regulation have proved to be only partially effective: despite theoretical remedies, action and information advantages on the part of the incumbent enable her to erect behavioral entry barriers and to strengthen the structural ones intrinsic in network industries.

By way of example, since the early days of liberalization several Agcom resolution have addressed competition concerns with reference to economic and technical requirements presented in annual Rio, in order to promote unbundled access to the local loop or guarantee non-discrimination⁴³ and cost orientation. Resolution n. 1/Cir/98 issued on November 25, 1998 promotes unbundling by eliminating restrictions on call termination, expanding carrier selection, modifying interconnection levels in multi-gateway metropolitan areas, etc. It also pursued cost orientation by requiring interconnection conditions to be aligned to the European best practice.

On the same token, Resolution n. 1/00/Cir issued on February 15, 2000 modifies 1999 Rio conditions according to the current best practice⁴⁴. Further, it started public hearings to define new accounting methods based on current costs to be implemented in the 2001 Rio; abandoning historical cost accounting was considered necessary for the adoption of a system based on long-run incremental costs, more capable of granting the correspondence between interconnection prices and the effective cost borne by the incumbent.

Resolution 4/02/Cir issued on March 1, 2002 approved the 2001 Rio, for the first time based on current cost and thus not linked to the best practice criterion. In this occasion, the impact on tariffs was quite unexpected, resulting in small decreases (15% on average) or even increases (“doppio Sgt” service). This fact highlighted once again the need for reliable accounting data and for long-run incentive mechanisms for improving incumbent’s efficiency. With reference to the first issue, transparency obligations have been pursued by obligations of accounting separation between network and service activities, and by the request of an independent auditor review of balance figures. Despite this, the strong incentive on the incumbent to retain relevant information (deny tactics) and to retard or misapply separation or auditing obligations (delay and detail tactics) have continually led to potential and actual harms of competition. The incentive towards productive efficiency is provided by a price-cap mechanisms, i.e. a constraint over the revenues the incumbent can obtain from the sale of a fixed amount of services⁴⁵. The Italian regulatory framework imposes service-specific

⁴³ It should be borne in mind that discrimination may be pursued not only by means of different downstream price or quality conditions between internal subsidiaries and external competitors; it could also be achieved by putting competitors at disadvantage by denying supply of a particular service, hence pre-empting the market.

⁴⁴ Namely, in accordance with Commission Recommendation n. 98/195/Ce and subsequent modifications.

⁴⁵ It is often referred to as *(Rpi - X) regulation*, since the annual price increase may not exceed the $(Rpi - X)$ ratio, where Rpi represents the retail price index and X the efficiency gains the incumbent is supposed to achieve.

price-caps⁴⁶ and a network cap covering interconnection and unbundling of the local loop.

The introduction of the abovementioned network-cap is due to Resolution n. 152/02/Cons issued on May 15, 2002 in response to a suit against Telecom Italia filed by 26 Olo, alleging price discrimination and margin squeeze⁴⁷. To cope with this competitive concerns, the Resolution imposed current account costing and (hopefully) more effective accounting separation, requiring evidence of transfer charge and volume for each service and imposing formal audit verification⁴⁸. To ensure the principle of non-discrimination and parity of treatment to be applied systematically with reference to both economic and technical conditions, the Resolution also imposed on Telecom Italia the formal obligation to ensure and certify the separation between the Network and Retail Unit information system; further, it impose the organizational splitting of the Wireline division into Wholesale and Retail business units. Resolution 152/02/Cons addresses the problem of cost orientation, and related problems of vertical price and margin squeeze, by adopting two price test that Rio offers have to comply with. To pass the price floor test, the offer must allow the incumbent full cost recovery; the replicability test requires the offer to be set at a level that a satisfactorily efficient competitor could achieve cost recovery⁴⁹. Agcm supported the attempt to increase transparency and reduce uncertainty, however the two tests have been criticized on two grounds: firstly, they do not provide incentives to efficiency and thus reap neither the technical efficiency gains of the integrated incumbent nor the cost savings of entrants; secondly, the price-formation verification system appears intrinsically affected by incentives not to disclose relevant information⁵⁰.

Summing up the preceding extensive discussion of competitive and regulatory problems arising when maintaining a vertically integrated Tlc incumbent, it appears that even the utmost competent and proactive Competition and Regulatory Authorities face great difficulties in preventing and adequately punishing strategic behaviors by the incumbent. This is especially true in sectors such as Tlc, where innovation rapidly enable supra-competitive profits to be earned in new markets while at the same time making currently dominated

⁴⁶ Namely: Access services (Rpi), with a sub-cap on residential access services (Rpi – Rpi); National calls (Rpi – Rpi); Retention of fixed to mobile calls (Rpi – 6%). On the contrary, international calls are not subject to price-caps constraints.

⁴⁷ The following brief discussion of Resolution 152/02/Cons draws heavily on NONNO [2003].

⁴⁸ It is now widely recognized in literature that accounting separation may only play a complementary role to other regulatory techniques. Compare HARDT [1995] and OECD [2001], p. 14, § 52: “[accounting or corporate separation] affect neither the incentives nor the ability of the regulated firm to act in an anticompetitive manner. Although these forms of separation have merit in supporting other approaches, they cannot be used as stand-alone techniques in their on right”.

⁴⁹ Indeed, Olo network costs are 20% discounted in order to provide the entrant with an incentive to build her own network.

⁵⁰ AGCM [2002]: “In definitiva, il sistema di verifica dei prezzi in esame rischia di dar luogo ad una artificiosa protezione dei profitti di tutti gli operatori e, in quanto disincentiva gli operatori alternativi ad investire nella realizzazione di infrastrutture alternative di rete, a una cristallizzazione della struttura di mercato esistente”.

services obsolete (and thus worthless)⁵¹. Under this setting, preemptive motives are likely to guide incumbent's conduct, since exclusionary practices at the expenses of current competitors reduce the threat of competition on both the present and future markets. For the same reason, it is no surprise at all that Telecom Italia have appealed almost every Agcm hostile decision or Agcom unfavorable resolution, thus approximating a model of regulation by litigation.

Given the drawbacks generated by vertical integration, we will now turn to consider forms of structural separation of Tlc incumbent operators. Such structural remedy has been advocated all around the world and sometimes implemented.

3.2. Service-based competition and structural separation

In this section we focus on theories and real-life experiences of structural separation in the Tlc sector⁵². Vertical separation is often associated with a liberalization policy headed towards service-based competition: although less ambitious than network-competition, it is probably more pragmatic, in the light of today serious competitive problems. Indeed, facility-based competition is in the long run the most sustainable and genuine form of competition; however, anticompetitive conduct may block (or at least slow down at an unsustainable pace) the transition from formal to substantial liberalization, despite the best efforts of European and national Authorities; to put it with Commissioner Mario Monti, it is not unexpected that the most hardened advocates of network-competition are the owners of existing essential facilities⁵³.

Apart from this, several influential authors support the view against structural separation, relying on the creative destruction brought about by technological innovation and by improvements and refinements in regulatory practice and antitrust intervention, in order to set up the condition for the development of facility-based competition⁵⁴.

⁵¹ It is important to note that the previous discussion focused mainly on problems related to interconnection, treating only incidentally other crucial issues such as unbundling, broadband services, etc.: the analysis of these issues would confirm further previous findings.

⁵² The headings of the current and the preceding paragraphs may be misleading in so far as the reader draw a direct and objective relationship between each competitive paradigm and the vertical industry structure associated in the title: it is thus useful to stress once again that elements of both paradigms may coexist, especially in the dynamic perspective embracing the transition from monopoly to competition; similarly, hybrid forms of vertical structures may be observed in the analysis of fixed Tlc, according to market-specific or transitional needs. Furthermore, categorizing sectors is often difficult, since regulatory approaches are shades of grey rather than black or white: by way of example, ownership separation does not prevent Tlc operators from building their own network.

⁵³ MONTI [2004], p.3: *“Mi sembra che quanti sostengono che la concorrenza debba basarsi esclusivamente sullo sviluppo di infrastrutture alternative siano, non a caso, coloro che possiedono le nicchie esistenti. Eppure solo le infrastrutture esistenti possono garantire, nel breve e medio periodo, uno sviluppo della concorrenza nel settore”*.

⁵⁴ Compare, *inter alia*, PROSPERETTI [2004], p.3: *“[T]rovo di limitato interesse pratico l'idea che occorra imporre una separazione strutturale obbligatoria della rete di accesso. (...) Insomma*

At the opposite, other prominent authors are in favor of structural separation, arguing it could overcome the competitive problems Tlc liberalized markets have been experiencing so far, giving society a substantial benefit, net of its costs⁵⁵.

Several different industrial structures fall under the general category of structural separation⁵⁶. The rest of the paper will focus essentially on ownership separation and on operational separation, although other forms of structural separation have interesting features (and are thus briefly introduced); by way of example, one could mention club ownership and separation into reciprocal parts⁵⁷.

Ownership separation represents the extreme form of structural separation, requiring line-of-business restraints or other controls to prevent re-integration. It eliminates the incentive to discriminate against downstream competitors. Apart from price or quality discrimination, it also eliminates cross subsidisation and thus margin squeeze. Hence, separation lightens (but does not remove completely) the need for active regulation; this is a major advantage, since the preceding section demonstrated that in real life regulation is often costly and only partially effective. Further, by reducing incentives to withhold information and to delay implementation, it is likely to improve the quality and effectiveness of remaining regulation. On the other hand, scope economies are completely lost: this may constitute a huge drawback. Further, one-shot costs from separation may offset competitive benefits.

Joint (or Club) ownership of the non-competitive component by downstream competitors also eliminates incentive to discrimination, while preserving (at least partly) pressures for the upstream activity to operate efficiently and scope economies. However, this approach is likely to result inconsistent with the goal of competition promotion, since it provides downstream firms with a powerful means to deter new entry and to facilitate collusion.

Operational separation is a lighter form of structural approach, since it implies the control of the non-competitive activity by an entity which is independent by the owner. This is often considered as an hybrid approach, somewhere in between structural separation and (behavioural) access regulation. When the controller of the non-competitive activity represents downstream firms, operational separation approximates club ownership; on the contrary, when the controlling entity represents the regulator, it comes close to access regulation. The main advantage of this approach is the fact that, provided the independent entity has full control of

davanti alla public policy non ci sono scorciatoie ma un'attività onesta, forse poco eccitante ma in pratica utilissima alla collettività, di regolazione e di intervento antitrust. Il brivido, se ci sarà, verrà ancora una volta dalla tecnologia?

⁵⁵ It suffices to remember the position expressed by the Agcm President Giuseppe Tesaro in several occasion, such as in AGCM [2002]: “*In particolare, l’Autorità ritiene che da un punto di vista concorrenziale, la soluzione più idonea a garantire il rispetto del principio di parità tra i diversi operatori sia quella di una separazione strutturale proprietaria, o comunque almeno societaria, delle attività di gestione dei servizi di rete da quelle di fornitura di servizi finali dell’operatore verticalmente integrato*” Along the same line of reasoning, AGCM [2004].

⁵⁶ For the sake of simplicity, in the following of the paper the upstream activity is considered as the non-competitive component and the downstream activity as the competitive one.

⁵⁷ The classification adopted here draws extensively on OECD [2001] p. 6-14.

the upstream activity, it has little (if any) incentive to engage in anticompetitive conduct. The main drawback is that the entity may lack profit motives and may hence be not responsive to market needs and to efficiency pressures; this may result in the inefficient operation of the infrastructure, insufficient investments in network development or maintenance and innovative technologies. In the Tlc sector, the scope for social gains from innovations (as well as the value of security and reliability of operation) is very large, hence this drawback may discourage the adoption of this scheme.

With reference to the Tlc industry, the option for separation into reciprocal parts is very interesting: it is only feasible in industries with two-way networks since it relies on the incentive to interconnect. When demand-side scale economies make it mutually advantageous to interconnect, each vertically integrated operator will find it rational to negotiate reciprocal access, thus reducing the need for regulation; a role for regulatory intervention still remain, *inter alia*, whenever asymmetries among networks may provide bigger ones incentives to deny interconnection in order to win back all the rival customer base because of network effects. Preserving vertical integration enable exploitation of scope economies, although some scale economies may nevertheless be lost. Another important advantage of separation into reciprocal parts is that it stimulates competition both vertically and horizontally. A main disadvantage, instead, is that competing firms need to provide at least a part of the upstream network; furthermore, some strong anticompetitive incentives remains for dominant networks to deny access to emerging competitors.

Concluding, this approach appears superior, at least to a limited extent, when compared with other structural solutions; however, a closer look will show that separation into reciprocal part is but the ideal long-term resulting market structure under access regulation inspired to the facility-based competition paradigm, characterized by the presence of a vertically integrated incumbent facing competition by several integrated Olo. Indeed, the analysis of benefits and drawbacks highlights impressive similarities.

For this reason, in this section separation into reciprocal part is not analyzed in details. The same applies with reference to club ownership, because of the potential and serious inconsistencies with the objective of liberalization.

In recent past years, an intense debate arose all around the globe about the desirability and, if such, the feasibility of structural separation in fixed Tlc. Needless to say, Italy was involved in this renewed debate: in 2001 several Olo filed a suit against Telecom Italia and in the resulting public consultation called for some form of structural separation. Eventually separation proposals were dismissed by the Agcom, lacking any regulatory power and the legal background to impose mandated separation on undertakings.

In the United States, one of the four powerful Baby Bell, Verizon, in 1999 was at first ordered to accomplish full structural separation by the Pennsylvania Public Utility Commission; later on, the same Authority reduced the order to functional

separation of wholesale and retail businesses. Similarly, last year in Australia the proposal of structural separation of Telstra has been extensively discussed.

Apart from country-specific factors, a series of common arguments have been used by both supporters and opponents of separation. Broadly speaking, points in favour and against may be identified inside the preceding analysis of benefits and drawbacks of each approach; for this reason the contrasting arguments are only reported in a few words. Further, it also emerges quite naturally that often the advantages of structural approaches are the complement of a disadvantage of vertical integration, and *vice versa*. Hence, separation eliminates incentives to discrimination and squeezing arising with integration, but entails loss of economies of scope which could be exploited under integration.

Other aspects still deserve a separate analysis: by way of example, it is argued that structural separation would harm competing Olo as well as final customers in so far as it leads to higher access charge⁵⁸ and the separated infrastructure company does not face competitive pressure and may become increasingly X-inefficient. Other efficiency concerns are related to the fact that, according to the specific design of separation, the infrastructure activity may not be constrained by the equity market.

With reference to parity of treatment, the fear is that discrimination may be reverted, in so far as the incumbent is bound to use the separated network whilst competitors may build their own (likely more efficient) infrastructure. Further, it is felt by some commentators that the relative value of the retail and network activity would depend on arbitrary access prices, thus generating uncertainty for shareholders and putting the government into a conflicting position whenever it possess stake in one of the separated companies.

A key issue is represented by the one-shot costs of structural separation; these costs obviously vary with the type of separation required, but in any case should be taken into account when assessing the desirability of separation: for example, Verizon argued before the Pennsylvania Commission that a one-time cost of over \$800 million would be incurred to implement full structural separation, in addition to a continuing cost of \$300 million per year.

Another, possibly the most, crucial point is related to the incentives for the upstream separated activity to invest in innovation and network development and maintenance, as well as to be responsive or proactive to market needs. By way of example, uncertainty about the timing, nature and gains from innovation increases transaction costs between infrastructure owner and downstream Tlc service providers, and by consequence it may limit or eliminate completely the incentive to invest. Similarly, the controlling entity may have no incentives to invest the socially optimal amount of resources in innovation, unless some (likely imperfect) incentive mechanisms were set up by regulators.

A number of minor issues could be discussed, but their implications are often dependent on the specific design of the separation proposal; a general treatment

⁵⁸ This economic argument is briefly treated in MACQUARIE RESEARCH EQUITIES [2003], p. 8-9.

hence makes little sense, if any at all. For this reason, the preceding examination of the most relevant issues has been carried out as far as possible without specific reference to particular proposals or national experience. This may be deemed either as a good point or a limit of the approach, but it surely is the most consistent one with the scope of the paper.

CONCLUSIVE REMARKS

The preceding discussion intended to study the regulatory issues and competition concerns related to the vertical structure of the incumbent operator and to apply these insights to the Italian market for fixed Tlc.

The apparently mutually-excluding approaches of facility-based and service-based competition present indeed some areas of overlap (after all, they share the same ultimate goal: the emergence of genuine competition in Tlc) and can therefore be considered in a less dogmatic and fundamentalist perspective. The ‘first-best’ solution among structural approaches inspired by relatively low-profile service-competition entails exactly the same long-run industry structure which regulators have in mind when acting following the more ambitious network-competition strategy. The only difference lays in the transition to this final intended industry structure, characterized by vertically integrated operators having incentives to reciprocally interconnect their network. In the former case, one may implicitly assume either that some regulatory intervention suddenly imposes separation of existing infrastructures and activities along vertical lines, or that new Olo enter the market as vertically integrated companies (with a sufficiently large network, in order to overcome incumbent’s incentive to exploit network effects by denying interconnection); in the latter case, the desired industry competitive structure is achieved by means of finely tuned regulatory and antitrust interventions which enable Olo to compete effectively having access to existing infrastructures in the short and medium-term, while still preserving economic incentives to develop their own network in the long-run.

This finding may provide an economic justification to the Commission view, which entails a long-run goal of facility-based competition (eventually with limited scope for pervasive regulation), whilst relying on medium-run competition on services (by means of detailed access regulation). However, it should be pointed out that such optimistic view about the possibility to avoid the traditionally observed trade off between (service-based) short-term competition and long-run (network-based) dynamic efficiency relies on the so-called “ladder of investment” theory.⁵⁹ Unfortunately, this approach relies on two assumptions which are unlikely to hold in practice: firstly, Regulators’ ability to micromanage the transition from service-based toward infrastructure-based competition;

⁵⁹ Compare OLDALE AND PADILLA [2004], p. 71-76.

secondly, the suitability of the likely fragmented (vertically and horizontally) industry structure emerging during the initial phase (when service-based competition is promoted) to develop genuinely sustainable forms of competition based on the network without the need of pervasive regulation.

Despite it is often claimed that network-competition through access regulation backed with accounting separation is the most proportional regulatory approach towards full liberalization, empirical evidence is not entirely consistent with this argument: it demonstrates that, on the one hand, heavy and intrusive regulation (as well as careful antitrust supervision) is needed to accompany the transition towards a genuinely competitive market and that, on the other hand, the incentives on the incumbent to engage in strategic behaviour, such as 3D strategy, are so powerful as to offset even the harshest threats of punishment by national Authorities. Hence, the claim that structural separation is unduly costly and unnecessary should be at least partly revisited, in the light of the less exciting performance of alternative solutions in the real world. Similarly, the applicability of what we defined as ‘evolutionary approach’ to network industry regulation has to be assessed.

The effectiveness and the sustainability of this network-competition strategy are increasingly questioned in Italy and Europe: successful incumbent’s exclusionary conduct may hamper the competitive process up to the point that the ultimately desired market structure will not be achieved. In the light of the disappointing results of the liberalization process, several Tlc operators as well as independent authors and academics have called for a profound revision of the present regulatory framework, involving also (but not only) structural separation.

Other authors, at the opposite, questioned whether such alleged poor performance of liberalization should indeed be interpreted as the only possible outcome, given industry characteristics. Nonetheless, the crucial point here is not what the natural market structure is: either a natural monopoly, or a natural oligopoly, or a dominant firm facing a competitive fringe, or a relatively perfectly competitive market. The real issue is how to enable the natural market structure (whatever it is in the real world) to emerge undistorted and how to make it as competitive as possible, thus eliminating perverse incentives for both abusive conduct and collusive behaviour.

Under this perspective, the capability of the regulatory framework to promote and protect competition should be valued within the boundaries imposed by the natural tendency to concentration of the fixed Tlc industry. Bearing this in mind, we are still prepared to argue that vertical integration backed with access regulation and imposition of accounting and functional separation on Telecom Italia have performed quite poorly in Italy, and hence some radical alternatives merit to be considered.

As a matter of fact, neither the Agcom nor the Agcm appear to deserve particular blame: just as every human activity, the Tlc regulatory process and antitrust enforcement may be improved (and actually have been improved over the years) and indeed some errors and inconsistencies may be found. Yet, the relevant point

here is that informational asymmetries and incentives to anticompetitive behaviour are too much powerful and, by consequence, the legislator overestimated the (theoretical) capability of *ex-ante* and *ex-post* regulatory instruments to cope with them.

Opponents of structural separation argue that the underlying assumption of technical and economical non-replicability of the local loop is inaccurate. This argument may hold in countries, such as the U.S.A. or some Central and Northern Europe states, where alternative infrastructures are already in place or could be for any reason easily duplicated. Still, it lacks empirical validity for the Italian fixed Tlc market: in our country cable-Tv networks, which are often deemed as the natural alternative infrastructure to the traditional copper-wire physical network, are almost non-existent, and other new technologies such as Wireless local loop (Wll) have proved to be affected by technical restrictions and limited economic appeal: on this point, recent events related to Wll frequencies are illuminating for weighing up the actual competitive potential of alternative networks.

The (potential) dynamic drawbacks of structural separation appear, in our view, far more concerning than any other issue. Considering the strategic role of Tlc for the whole economic system, and the intensity and rapidity of innovation spreading in Tlc, the preservation of dynamic efficiency undoubtedly represent a crucial issue and should hence constitute a priority in any reform proposal. In this respect, it is widely recognized that structural separation (both in the ownership and operational version) have some major drawbacks, and only properly designed and implemented incentive mechanisms may succeed in eliminating or at least reducing dynamic inefficiency. Conversely, it should not be forgotten that (under certain settings) also a vertically integrated monopolist or, by approximation, a dominant incumbent has few, if any, incentives to innovate or to product-differentiate.

Last but not least, the emerging trend in Tlc is toward increasing vertical integration: infrastructure, service and contents are more and more often supplied by integrated companies, enjoying scale and scope economies or other advantages. Imposition of structural separation could prevent Tlc operators from exploiting those important benefits while not compensating with large enough competitive gains: had this to happen, it would sound quite at odds with the goals of economic regulation.

Summing up, several factors have to be considered and traded-off when evaluating the existing Tlc regulatory framework or when proposing alternative ones. This has made the debate still lively and intriguing up to today, preventing clear-cut solutions to be suggested. Clearly, the analysis and comparison of international experiences may prove an useful tool for the economist; still, it should be remembered that liberalizing fixed Tlc is not “one-size fits all” and thus overseas regulatory schemes should not be imported without carrying out a serious critical analysis.

Providing an exhaustive in depth analysis of the different forms of structural separation clearly falls outside the scope of this paper; indeed, rivers of words

could be written for each of them, trying to appraise their relative advantages, drawbacks, net benefits or costs to society.

Yet, if not conclusion, some guidelines may still be drawn. The preceding discussion seems to suggest that ownership separation is an extreme solution which may entails as many drawbacks as advantages. Operational separation appears as a hybrid solution which could likely reap the benefits of several approaches, generating a net benefit to society: separation of ownership and control may thus prove to be a prudent, pragmatic and feasible alternative solution. Conversely, it may result as the worst of both worlds, as proved by the Italian experience in the electricity sector. Although not an evidence, the frightened reaction of incumbent operators may spread some confidence about the effective competitive benefits that could be reaped with structural separation. Separation into reciprocal parts (or, equivalently, fully developed network-competition) looks so close to paradise that we prefer to think of it as the ultimate goal rather than as a realistic approach to achieve competition. Similarly, the “investment ladder” appears quite unfeasible in real practice: in our opinion, an unambiguous decision about the preferred strategy should be made and coherently pursued.

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