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Simpson, S

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NEW APPROACHES TO THE DEVELOPMENT OF TELECOMMUNICATIONS  
INFRASTRUCTURES IN EUROPE? THE EVOLUTION OF EUROPEAN UNION  
POLICY FOR NEXT GENERATION NETWORKS

*Seamus Simpson*

*Department of Information and Communications, Manchester Metropolitan University, UK.*

**DRAFT**

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Contact:  
Seamus Simpson,  
Department of Information and Communications,  
Manchester Metropolitan University,  
Geoffrey Manton Building,  
Rosamond St. West (off Oxford Rd.),  
Manchester, M15 6LL,  
UK.

Phone: ++44 (0) 1612473013

Email: [s.simpson@mmu.ac.uk](mailto:s.simpson@mmu.ac.uk)

## ABSTRACT

In May 2009, the European Commission released a draft consultation document on the application of state aid rules to broadband network deployment, leaving open the possibility of significant state aid intervention. However, this paper argues that this cannot occur due to the overarching nature and essential features of the EU's by now well embedded telecommunications policy apparatus, as well as its legal remit in telecommunications. Specifically, EU telecommunications policy, normatively and practically, is devised through a neo-liberal policy lens. The paper attempts to show, using state aid to Next Generation Access networks as the example, that this dominant policy perspective not only de-limits the extent of state intervention for public policy reasons, but it also fundamentally shapes the character of such intervention which does occur.

## INTRODUCTION

Since the publication of its 1987 Green Paper on the establishment of the Single European Market in telecommunications, EU telecommunications policy has developed overwhelmingly along market lines. Policy energies have been concentrated on the replacement of the old, nationally idiosyncratic, state-run monopolistic systems with a differentiated, competitively ordered, series of markets of significantly homogenous character across EU members. The consequent elaborate policy apparatus developed as a system of regulatory governance at national and EU level aimed almost exclusively at the opening of markets and the cultivation of competition therein. The use of interventionist non-market based public policy levers has been modest, manifest for the most part in measures for the maintenance of universal service obligations.

However, recent EU policy developments in the area of very high speed broadband - or next generation - networks (NGNs) suggests, on the surface, evidence for the potential to develop a significant change of approach. This paper explores the reasons behind the possibilities for such a potential shift, and speculates on its likely materialisation. The creation of NGNs - and in particular the upgrading of the local part of telecommunications network to create what are known as next generation access (NGA) networks - is seen by the EU as being an essential driver of economic and social progress in the coming decades. The desire to create such infrastructural development has been heightened by the severity and likely longevity of the current economic downturn. The European Commission recently put forward 'A European Economic Recovery Plan' urging significant public sector investment in ten core areas one of which is broadband infrastructures (European Commission 2008a). Beyond this, concerns exist about the extent to which the regulated market competition in telecommunications, fashioned since the mid 1980s, can deliver effective investment in network upgrades within appropriate timescales, even if it is functioning appropriately in competition policy terms.

In May 2009, the Commission released a draft consultation document – followed by a finalised set of guidelines in September (European Commission 2009a) - on the application of state aid rules to broadband network deployment, leaving open the possibility for significant public sector intervention (European Commission 2009b). However, the core argument of the paper is that the nature and essential features of its now well embedded telecommunications policy apparatus, as well as the EU's legal remit in telecommunications, militate strongly against such a move, even if the Commission's desire to see it occur is more than rhetorical. This is the case because EU telecommunications policy, normatively and practically, is devised through a neo-liberal policy lens. The paper attempts to show, using state aid to NGAs as the example, that this dominant policy perspective not only de-limits the extent of state intervention for public policy reasons, but it also fundamentally shapes the character of such intervention which does occur.

The paper proceeds as follows. The next section briefly outlines the neo-liberal character of EU telecommunications policy, thereafter providing some basic coverage of the main features of the growth of broadband communications across the EU. The subsequent sections of the paper turn to the EU's recent consideration of the role of state aid in broadband development,

moving in the process to an analysis of the European Commission's policy on NGNs and specifically next generation access (NGA) networks. The final two sections of the paper attempt briefly to contextualise the recent policy activity of the EU on state aid to NGA networks in the core arguments of the paper.

## THE NEO-LIBERAL CHARACTER OF EU TELECOMMUNICATIONS POLICY DEVELOPMENT AND ITS IMPLICATIONS FOR STATE AID

Historically, the state in the EU played a very important role in telecommunications, a series of state-owned monopoly Postal, Telegraph and Telephone (PTT) companies being responsible for the provision of basic telephony services to citizens. Telecommunications across much of Europe was state owned, state-funded, state-operated and state-led (Grande 1984). Since approximately the beginning of the 1980s, however, the state gradually and systematically withdrew itself from these key roles in telecommunications. The monopoly service provider was at least partly, and often completely, privatised. The governance of the sector's functioning and evolution were placed in the hands of a series of new independent, national regulatory authorities (Thatcher 1999). Both telecommunications infrastructures and services old and new were structured along (often not very) competitive lines, the regulatory parameters of which were the responsibility these NRAs to police. Very importantly, as the latter part of the 1980s proceeded, the EU began to play an important role in setting a broad common regulatory framework for the newly evolving telecommunications sectors of its Member States (Humphreys and Simpson 2005). This involved agreement on, and implementation of, a battery of EU legislation of a liberalising and harmonising kind which has evolved through successive phases of refinement (see Goodman 2006). The current EU Electronic Communications Regulatory Framework is the most recent version of this process, epitomising the classic transition of telecommunications in the EU from corporate to the regulatory state (see Seidman and Gilmour 1986; Majone 1996) and cementing further the significance of the EU in the governance landscape of European telecommunications (Simpson 2009).

A key concern of the (neo) liberalising agenda of telecommunications across the EU has been to ensure that markets develop and function free from the distortions to competition which can occur through what is viewed as unjustifiable state influence. This has manifest itself in a number of ways in telecommunications. A major issue has been the independence of the NRA from the state. Another has been the degree of possible state ownership of, and influence in, the daily affairs of telecommunications incumbent (ex-PTT) operators, though the EU has not gone as far as to mandate the (partial) privatisation of PTTs. Much less high profile has been the general powers held by the EU to take action against state aid provision made in respect of one or more telecommunications firms. Over the last 20 or so years, this has not been a controversial aspect of the development of an often fractious telecommunications policy package at EU level. Two likely reasons lie behind this. First, the acceptance of the neo-liberal policy agenda has been more or less widespread and universal across EU Member States in telecommunications. Though the European Commission has

taken great pains to highlight any exceptions, on the whole the state has willingly and relatively obediently withdrawn from operational and regulatory functions in telecommunications. Second, whilst the development of EU telecommunications legislation has been overwhelmingly market liberalising and harmonising in character, a significant aspect of successive regulatory packages has been the provision made for basic universal service elements in telecommunications. The issue of universal service, and in particular the extent to which the basic defined level should rise as technological and service sophistication proceeds, does, however, tie in with the possible kinds of role which the state might play even in and out-and-out neo-liberal telecommunications sector. Here, the role of economic development and relative social equity within specific state jurisdictions is raised. Beyond these matters of ‘safety net’ telecommunications policy, the efficacy of the neo-liberal telecommunications model in delivering appropriate levels of electronic communications networks and services is also an important issue, the key corollary being that the only likely source of resources necessary to rectify any deficiencies in the neo-liberal market mechanism is likely to be the state.

An until now under-addressed matter in the study of the evolving EU telecommunications has been the extent to which state involvement, in terms of resource allocation to the sector, has continued in spite of the move towards a regulated liberal market economy in telecommunications. Such an analysis draws in the well-developed general powers which the EU is able to exercise to address state aid measures which might be potentially distortive of competition in the Single European Market and the extent to which these have been applied to the telecommunications sector. As this paper will go on to illustrate, despite the EU having been fairly active in decision taking regarding state aid measures notified to it in respect of telecommunications, it is only recently that it has begun, through the European Commission, to articulate the parameters of a clear policy on state aid to the infrastructural aspects of telecommunications. The key issue here appears to have been the extent to which state aid intervention has been permitted by the EU in the relative ‘leading edge’ infrastructural aspects of electronic communications network evolution, in respect of broadband technology. The EU has also recently concerned itself with future infrastructural (and related service based) contexts in the shape of so-called next generation access networks (NGAs). The potentially controversial debate on the role of state aid here has been sharpened by the recent global economic crisis which has raised considerable doubt about the long term stability and efficacy of the global neo-liberal model of regulated capitalism, not least because of the dramatic and substantial direct intervention by the state to save it from outright collapse. Before exploring in some detail the recent approach which the EU has taken to developing a policy on state aid to broadband and NGA infrastructures, the next section of the paper provides some context on the evolution of broadband networks and services across the EU.

## THE STATE OF BROADBAND DEPLOYMENT IN THE EU – OPPORTUNITIES AND CHALLENGES

Fixed network broadband communications have become increasingly prevalent across the EU in the last decade. However, the average fixed network broadband penetration rate, measured as the number of broadband lines per 100 of the population is still only 21.7%<sup>1</sup> (European Commission 2008a: 6). In terms of download speeds, a key issue in current and next generation services, merely 12.8% of broadband lines deliver speeds beyond 10Mbps. Since 2006, growth in the number of new broadband lines installed across the EU has fallen. As might be expected, broadband lines exist in greatest number in the most populous and strongest of the EU's economies: Germany (20.1%), the UK (15.5%), France (15.4%) and Italy (10%) (European Commission 2008a: 10). The fixed broadband line market shows less evidence of incumbent domination than traditional fixed link networks. However, in 2008, on average across the EU, incumbents still accounted for 45.6% of fixed broadband access lines, which rose to 52.1% if resale lines in the ownership of these companies is taken into account. Whilst this figure has been falling since 2003 (from 58.7%), evidence suggests that the rate of market share reduction has been flattening out since 2005. Though the percentage of digital subscriber lines (DSL) provided by incumbents has fallen from 77.9% in 2003 to 55.9% in 2008, the rate has barely decreased since 2006. Incumbent fixed broadband access lines domination varied across the EU from 22% to 83% in 2008 (European Commission 2008a: 13-14).

This level of incumbent domination in the broadband market led the Commission in 2008 to launch a consultation on future regulatory principles to be applied to next generation access networks (NGAs) based on a draft Recommendation. Highlighting the seriousness with which it viewed the development of NGAs, the Commission noted that whilst 'a number of operators, both incumbent and 'alternative', have launched large scale roll-outs of new broadband infrastructure... Europe appears to be still lagging behind other economies, notably the United States and Japan' (European Commission 2008c: 2). The Commission's approach to NGA access has at its basis the desire to ensure EU-wide lowest cost, most flexible levels of access based on the belief that this will incentivise competitive entry into the market ensuring timely, low cost, high quality roll out of new networks and (by association) new services. The Information Society Commissioner, Viviane Reding, expressed the concern that 'uncoordinated or even contradictory action of national regulators as regards Next Generation Networks could seriously damage competition and undermine Europe's single market' (European Commission 2008b: 1). However, concerns over the ability of the EU to invest adequately enough, and according to an appropriate timescale, in broadband has focused attention on the possible role of state aid in the development of NGAs.

## THE EU'S INVOLVEMENT IN STATE AID TO 'TRADITIONAL' BROADBAND NETWORK DEVELOPMENT

The Commission's State Aid Action Plan (European Commission 2005) has highlighted the role which state aid intervention can play in eradicating market failures and improving the functioning of markets and competitiveness. The Commission has also more recently claimed that 'where markets provide efficient outcomes but these are deemed unsatisfactory from a societal point of view, state aid may be used to obtain a more desirable, equitable market outcome' (European Commission 2009b: 2). The presence or otherwise of state aid is assessed within the meaning of article 87(1) of the EC Treaty and its compatibility determined under the stipulations of article 87(3). There are four cumulative conditions which have to be met for a measure to qualify as state aid: it must come from state resources; it must confer an economic advantage to the beneficiary/ies; it must be selective and distortive or potentially distortive of competition; and it must affect intra-Community trade (European Commission 2009b: 3). In investigations of state aid undertaken by the Commission in specific respect of article 87, state aid must be found to be well justified in terms of pursuit of social or economic development or as a rectifying measure for clear market failure. The measure in question must be proportionate to its objective/s and have a positive effect on welfare and competition (Papadias, Riedl and Westerhof, 2006: 14). It is also possible for the state to get involved in equity participation and capital injection into a company that might be involved in broadband deployment in our case, and the EU Court of Justice has ruled that direct or indirect activity of this nature is permissible as long as normal market conditions are found to pertain.

Key indicators of abnormal market conditions, thus calling forth an aid compatibility assessment under article 87, would be situations where there was no medium to long term possibility of profitability from a venture and where private participants in a venture do not assume the same risk as public participants. This so called principle of the market economy private investor has been illustrated in the case of broadband in the Amsterdam decision (2007). It is also possible to consider the provision of broadband networks and services as services of general economic interest (SGEI) or public services as defined by article 86(2) of the EC Treaty. Here four so-called Altmark criteria must be met to ensure that the measure in question falls outside the scope of article 87 (1). These are: the recipient of state funding must be formally entrusted with the service, whose obligations must be clearly articulated; the means of calculating compensation for providing a SGEI must be established before the act and must be transparent and objective; the compensation must not be excessive; and, where not chosen through a public procurement procedure, the level of compensation must be determined through an analysis of the typical costs to a company of providing the service whilst ensuring a reasonable profit (European Commission 2009b: 5-6).

A 1999 EU Council Regulation specifies a process of involvement of the Commission in the investigation of possible infringements of state aid rules by Member States (European Council of Ministers 1999). The Commission's involvement in any case comprises two phases. In Phase 1, the Commission may decide that the measure under investigation does not constitute state aid. Alternatively, it may decide that the measure is aid but raises no doubts in



respect of it falling within article 87(1) of the EC Treaty. Finally, the Commission may decide to launch a more detailed investigation in the light of compatibility doubts raised by its initial appraisal of the measure. The compatibility assessment (also called the balancing test) is based on the stipulations of article 87(3) of the Treaty and may result in a number of decisions. The aim is to compare the positive impact of any state aid measure to realise an objective of common interest with any potential negative impact on trade and competition in the specified area that might ensue. A so-called positive decision is one where as a result of modifications undertaken by a Member State, initial doubts raised about a measure have been eradicated. Another possibility is a conditional decision wherein permission for a state aid measure is granted subject to Member State fulfilment of a number of conditions. If the Commission delivers a negative decision, thus finding an aid measure incompatible with the common market, this may have the condition of recovery attached to it, where the Member State is required, because of the illegality of the measure, to ensure the return of the aid given to the beneficiary (European Commission 2009).

Between December 2003 and August 2009, the European Commission has made no fewer than 47 decisions in respect of state aid to broadband (European Commission Competition DG, 2009). Of the 22 decisions taken until 2006, the Commission adopted a negative conclusion in only one case<sup>2</sup>, though it is important to note that most of the projects which it has considered concern so called 'white' areas in which a population tends to be rurally located and sparse (see below). However, concern has been expressed by the Commission about the possible intervention of States in so called 'black' areas (Papadias, Riedl and Westerhof, 2006) which is indicative of the underlying neo-liberal and potentially contradictory approach of the Commission (see below).

In undertaking compatibility assessments in respect of article 87(3), the Commission has permitted broadband support measures which are considered to be aid to develop key economic activities or areas where the aid is judged not to adversely affect trading conditions contrary to the common interest. In undertaking its balancing test in respect of the broadband market, the Commission proposed the designation of three types of area reflective of the level of broadband deployment in existence prior to the measure under consideration having been deployed. Here, white areas have no broadband infrastructure with none likely to be developed in the near future. These areas are likely to qualify for state aid. By contrast, black areas are defined as those where at least two broadband networks exist and where services are provided competitively. In these areas, the Commission has argued that there unlikely to be evidence of market failure and thus any scope for state intervention. Third, so-called 'grey' areas are those with only one broadband operator in existence. This monopoly situation may allow state aid measures to be permitted under certain conditions, namely that no adequate services are offered to satisfy private or business customers and where it is proven that the state aid measure would be the least distortive of a range of measures - not least regulation - available to rectify the situation.

In its 2009 Guidelines, the Commission stipulated in these cases a consideration of overall market conditions, network access conditions, barriers to market entry and the potential efficacy of regulatory measures as an alternative (PLC, 2009a). In particular, in respect of

designated white and grey areas, the Commission laid out a set of criteria to ensure that the level of state aid and any consequent distortive effects on competition have been minimised.

## RECENT EU POLICY DEVELOPMENTS IN NEXT GENERATION NETWORKS - POLICY COHERENCE AND CONTRADICTIONS

The development of the fixed link telecommunications network across Europe has taken the best part of a century to construct, a process which is arguably likely to be ongoing as long as electronic communication remains a cornerstone of human communication. In recent years, a key challenge has been to upgrade traditional copper based networks with fibre optic technology, providing the bandwidth capacity and speed of communication promised to users for almost 20 years. A key problem is that whilst much of the trunk telecommunications network has been upgraded, the vast and complex copper communications nexus between the user's home or premises (or close thereto<sup>3</sup>) and nearest local switching centre has proven exceptionally time consuming and costly to refurbish. Thus the creation of this local, so-called next generation access network (NGA) remains a major telecommunications policy goal across most of the EU. According to the European Commission (2009d: 13), 'NGA networks are access networks which consist wholly or in part of optical elements and which are capable of delivering broadband access services with enhanced characteristics (such as higher throughput<sup>4</sup>) as compared to those provided over existing copper networks'. In its revised September guidelines, however, the Commission defined NGAs rather sparingly, as consisting 'wholly or in part of optical elements and which are capable of delivering broadband access services with enhanced characteristics' (European Commission 2009: 19). The Commission noted that these networks would be able to support a converged future electronic communications service environment delivering high definition video and television content, as well as a range of high bandwidth audiovisual on-demand service applications.

Whilst the use of state aid funding for the development of 'traditional' broadband networks has a fairly well established, if short, history in EU telecommunications policy (see above), the funding of NGNs through state aid has barely been considered and represents a potentially important landmark in the development of the EU's approach to future electronic communications network environments. In its May 2009 draft Guidelines, the Commission highlighted the funding of so-called next generation access networks (NGAs) as a key matter. The initial tone was set by the EU Competition Commissioner, Neelie Kroes, who noted that 'investments in this important infrastructure may both help economic recovery in the short term and allow long term benefits for European competitiveness' (European Commission 2009b: 1). Philip Lowe, also from the Competition Directorate, in a recent speech made the potentially significant assertion that it was likely that state aid would play a more significant role in the creation of NGAs than it had done in previous phases of broadband network roll-out. Significantly, he noted that the Commission would consider sanctioning state aid where there is considered to be market failure, meaning inadequate private investment and inadequate coverage, even where the level in existence might be seen to satisfy some

economic goals. Specifically, the Commission would take into account equity and cohesion considerations where market forces may not produce socially desirable results.

Unlike 'traditional' broadband networks, the economics of NGAs may militate against their deployment in urban areas as well as in rural areas with low density populations. The Commission has stated in its guidelines that in respect of NGAs 'Member States may decide to invest themselves or provide financial support to private operators in order to obtain NGA network connectivity, or to obtain connectivity earlier than anticipated' (European Commission 2009: 20). The Commission has noted that, as in the case of state aid to broadband networks, the market economy investor principle, public service compensation and Altmark criteria also apply in the analysis of state aid to NGAs. It is important to note, however, that some of the work required in the deployment of NGAs can be undertaken by the state without it being considered as state aid. This refers to public or civil works such as digging and cable laying. However, this activity, if conducted by the state would need to be of a non sector-specific nature and could provide facility to other types of utility providers.

In its assessment of state aid to NGAs, the Commission decided to continue to use as a definitional basis, a refined version of the so-called white, grey and black areas. Here, white NGA areas are defined as those where NGAs do not exist currently nor are likely to be created through market investment within the near future. NGA 'grey' areas are those where only one such network is currently in place or is likely to be deployed by the private sector in the near future. This area may be without basic broadband infrastructure beyond that available through the NGA or it may be an area in which one or more basic broadband providers are operational i.e. a traditional grey or black area (European Commission 2009a: 22). In determining whether a particular measure is compatible, the Commission has stated that it will consider the effects of the proposed aid on existing broadband networks (given current levels of service substitutability) as well as the measures of the balancing test (see above). In respect of white NGAs where one basic broadband network already exists, states must demonstrate that broadband services already provided 'are not sufficient to satisfy the needs of citizens and business users' (European Commission 2009: 22) and that the intended goals cannot be achieved by other means, such as ex ante regulation. This appears a rather conservative vision of the development of new electronic communications services and stands in contrast to other more expansive rhetoric about the potential of new electronic communications networks and services in Europe's future development, as well more immediately the role of the communications sector as a dynamic driver of economic recovery at a time of severe recession.

In respect of NGA grey areas, in a similar vein, the Commission concluded in its guidelines that for state aid for the purpose of creating another NGA to be sanctionable, the state would have to show that the existing or planned NGA network is insufficient to satisfy business and private user needs. This tightly circumscribed, modest perspective seems to contradict the aversion of neo-liberalism to the existence of network monopoly. The Commission further qualified this view by asserting that there may exist less distortive means to address user requirements than sanctioning state aid. This explicitly refers to the role of ex ante regulation and competition policy in ensuring attractive and effective access conditions under network

monopoly circumstances. Here, the Commission appears to be arguing that regulated monopoly is more favourable to state led efforts to create competitively based network competition.

In the case of NGA black areas, the Commission has argued in its guidelines that any state aid to provide a new NGA network would have unacceptably distortive consequences on competition. However, in developmental terms, the Commission has focused on the process of migration of competitively ordered broadband black areas to NGA black areas. Here, it argued that there is potential for state intervention where broadband investors do not plan to invest in NGAs in the near future. Thus, states can demonstrate to the Commission that ‘the historical pattern of the investments made by the existing network investors...in upgrading their broadband infrastructures to provide higher speeds in response to users’ demands was not satisfactory’ (European Commission 2009: 23). In these cases, the compatibility test would have to be undertaken. In addition, the beneficiaries of aid must make wholesale access to their network available to competitors for at least seven years, the access conditions having been set in conjunction with the relevant communications NRA. On top of this, the NGA network architecture benefiting from state aid ‘should support effective and full unbundling’. The Commission’s preference here was expressed for “‘multiple fibre” architecture’ which it considers to be a suitable vector to allow independence between parties requiring access as well as being supportive of point to point and point to multipoint technology’ (European Commission 2009a: 24). Though not stated explicitly the above requirements will also be applicable to NGA grey areas. This would seem to suggest that the Commission’s preference is for open access infrastructure. However, the extent to which state aid would be enough to make private companies invest in return for having to provide medium term open access is a moot point. The current economic climate would suggest that companies will have little immediate short term (i.e. within three year) plans for major investments so that state aid might be the best way of stimulating the perceived necessary move towards NGA deployment. However, the extent to which state coffers will be able to sustain significant funding of NGAs is open to question in the current economic climate, no matter how important and an useful investment in the future it might be.

The final agreed guidelines, published in September 2009 (European Commission 2009a) contained an important modification of the Commission’s definition of what is the ‘near future’ in respect of the examination of the likelihood of infrastructural investment in NGAs in a given area. Originally defined as a five year period, in the final guidelines this was reduced to three years, suggesting a loosening of the criteria that might permit the granting of state aid. Beyond this, in respect of NGA white areas, should 3 year private sector investment plans be found to exist in a given area (thus pointing towards a negative decision in respect of the granting of any state aid), these plans would, nevertheless, have to be able to guarantee ‘at least significant progress in terms of coverage...within the three year period, with completion within a reasonable timeframe thereafter’ (PLC, 2009c: 5).

## TOWARDS A FUTURE ELECTRONIC COMMUNICATIONS INFRASTRUCTURE AND SERVICE ENVIRONMENT IN THE EU: THE DOMINATION OF REGULATED MARKET COMPETITION PERSPECTIVES

Consideration of the extent to which EU policy on NGAs might sanction the role of state aid has in many ways been overshadowed and arguably (pre) determined by a simultaneous ongoing debate on the role that the EU's now well established Electronic Communications Regulatory Framework should play in creating the conditions for NGA development to flourish. The development of EU telecommunications policy according to the neo-liberal parameters of harmonised, regulated competition since the mid 1980s has set a path in which the 'default' context for the NGA policy making is the use of regulated competition to achieve policy goals. It is also the case that the EU's political powers stem very much from its legal-economic remit. This has conditioned EU thinking on social matters related to telecommunications policy to such an extent that, from its techno-economic perspective, the so-called 'digital divide' raises as many commercial-competitive issues as it does social equity issues. The underpinning expectation, articulated since the EU's Bangemann Report (1993), has been that appropriately regulated and competitive communications markets will yield social goods. Within this context, only at the margins, where regulated competition has not developed, has direct state aid been countenanced. Even in these circumstances, state action is tightly circumscribed as not to be competition-distorting.

In September 2008, the Commission launched a specific initiative to create an agreed regulatory strategy among Member States regarding NGA networks. Addressed to NRAs, a draft Recommendation dealt with a series of matters from common definition of next generation services to access conditions. Here, the principle of lowest level access was enunciated such that regulators were encouraged to make mandatory the opening of access to competitors the ducts of incumbent network operators, so these competitors might install their own fibre. Beyond this, however, if deemed necessary to deal with a lack of competition, further higher level access arrangements could be created to stimulate competition, such as access to existing-but-unused fibre owned by the incumbent, as well as access to so-called 'active' elements, notably the bitstream capacity of the incumbent (European Commission 2008d). After a consultation period, in June 2009, the Commission published an updated version of its draft Recommendation. In this, it was stressed that the regulatory framework would be mostly asymmetric, that is, it would address incumbent operators' market power. Though analysis of its fine detail goes beyond the scope of this paper, it is important to note that the draft Recommendation has been subject to criticism, not least from the European Telecommunications Network Operators, a collective body in which most telecommunications incumbents are members. ETNO argued that 'the recommendation would lead to disproportionate regulation as...strictly cost based prices for regulated access products would make it almost impossible for operators to negotiate access conditions on reasonable terms and [would] undermine the NGA business case' (EurActiv.com, 12 June 2009). Given the high investment costs, the draft Recommendation endorsed the possibility of so-called co-investment schemes, not least in low population density areas. However, such co-investment schemes in order to be sanctioned, have to demonstrate their pro-competitive

nature and potential. In the draft Recommendation, no direct reference to the role that the state might play as a co-investor was made.

The economics of NGA broadband infrastructures, like their fixed network predecessors, militate against a contestable market in competing infrastructure terms. The Commission itself has noted that as much as 80% of the total investment costs here are assigned to what it describes as civil works such that ‘in most cases...the deployment of parallel fibre networks is not viable because no ducts are available or because the population density is too low for a sustainable business model’ (European Commission 2009c: 2). In addition, opting to implement the neo-liberal model of regulation-mandated competition in the context of significant incumbent presence in a market faces the delicate task of creating enough incentive for the incumbent to invest in a context of regulated access requirements. The Commission has acknowledged that whilst the marginal costs to the incumbent of installing extra fibre in any act of investment are low relative to the gains that might be accrued from renting it to access seekers, there may be no incentive to do so should the access conditions be deemed too punitive by the incumbent (European Commission 2009d). At best, this might result in short to medium term delay in NGA rollout, or, at worst, a serious retardation of NGA development and damage to the EU’s competitive position in the long term.

There are, however, alternatives to the Commission’s suggested optimal solution - put forward in its Recommendation on regulated access to NGAs - of ‘cost-oriented non-discriminatory sharing of legacy physical infrastructure’ (European Commission 2009d). These might be pursued, at least in part, outside the parameters of the neo-liberal model of regulated competition. This policy option is brought into focus more sharply once the future electronic communications service context in which NGNs will be used is explored. It is here that the long heralded promises of ICT service convergence are likely to be fulfilled for users on a large scale. Thus, a range of audiovisual services, incorporating high definition television and interactive multimedia services will be available. The debate on precisely how to govern this new context is complex and has been ongoing at EU level for at least a decade, often controversially (see Michalis 1999). More recently in respect of state aid to the public service elements of audiovisual media, the EU has appeared to develop a policy from the same legal origins and underpinned by the same operational principles as its emerging state aid policy on broadband infrastructures. Here, neo-liberal concepts such as ‘transparency, proportionality, cost-efficiency, the market-investor principle and technological-neutrality’ (Donders and Pauwels 2008: 296) have dominated. Thus, the EU’s policy on role of the state in future electronic communications infrastructural and service contexts appears destined to set out a tight legal circumscription of the degree of future government involvement in the sector viewed through a market-based, competition-dominated lens. In this neo-liberal model state intervention is likely to be minimal, marginal and effected through a liberal-market *modus operandi* and policy goal structure. That this may not be the Commission’s intention, given the ambiguities in the recently articulated NGN policy explored in this paper, is a further cause for concern.

## CONCLUSION

EU telecommunications policy has for more than 20 years been underpinned by the goal of creating a system increasingly characterised by independent public regulation of across the board market-based competition. Here, the directly interventionist role of the state, whilst far from absent, has been exercised at the margins of the sector's functioning and development. Recent policy activity of the European Commission aimed at setting harmonised conditions for the creation of NGA networks suggests a more expansive view of the role of the state in the infrastructural development of upgraded fixed link communications networks as a policy goal. In fact, the Commission has argued that state aid to broadband 'may also be viewed as a tool to achieve equity objectives...as well as freedom of expression to all actors in society' (European Commission 2009b: 16).

However, this paper has argued that this perspective is likely to remain largely rhetorical. The explanation lies in the fact that NGA network policy is 'hide-bound' within the practical constructs of the neo-liberal system which has characterised the last 20 years of telecommunications policy at EU level. Thus, the recent Commission proposals on state aid to NGA networks articulate any state aid involvement through the policy practices and goals of marketisation. Such activity should be marginal and even competition-promoting in nature. In tandem with this, related recent draft proposals on regulated access to NGA networks illustrate clearly the faith that regulated market capitalism will cater for future electronic network communications requirements. In a system where the pursuit of competition has been the end-goal in itself, however, this leaves the realisation of social benefits to vagaries of a market mechanism whose outcomes are often less than serendipitous in this respect. It is also the case that private sector network infrastructural roll out may not proceed at the pace desired by the Commission due to the current economic downturn, as well as disincentives to investment and access sharing for incumbent operators in fixed network infrastructure environments. The case of state aid NGA network policy at EU level illustrates the narrow economic-legal parameters of the *acquis* held by the latter – and thus the available degrees of freedom for policy manoeuvre - in the communications sector. The alternative of developing more powers regarding the social policy aspects of electronic communications at EU level is unlikely to occur due distinct Member State opposition. This was no more clearly illustrated than through the EU's last major thwarted policy foray towards creating a common convergence regulatory framework for communications networks and services of a decade ago.

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<sup>1</sup> The ranges stretches from only 9.5% in Bulgaria to 37.4% in Denmark

<sup>2</sup> In respect of Dutch government support for the construction of a fibre glass network in the town of Appingedam.

<sup>3</sup> Fibre To The Home (FTTH) and Fibre To The Building (FTTB) in the case to direct access; Fibre To The Node (FTTN) or Fibre To The Cabinet (FTTC) in the case of what the Commission describes as 'an intermediary concentration point' (European Commission 2009c:1).

<sup>4</sup> Optical fibre with downstream bandwidth of 40Mbps minimum and upstream bandwidth of 15 Mbps (current downstream speeds available from ADSL and ADSL2+ technologies are 8 and 24 Mbs maximum respectively; upgraded cable networks delivering speeds up to and above 50Mbps (current maximum speed is 20Mbps); connect newly built homes and offices with new fibre connections with 100Mbs+ services – source European Commission 2009a: 14).