Innovation and the New Regulatory Framework for Electronic Communications in the EU

by

Ian Dobbs[+]

and

Paul Richards[++]

(FORTHCOMING – EUROPEAN COMPETITION LAW REVIEW)

[+] Reader in business economics and finance, the University of Newcastle on Tyne Business School.

[++]Senior regulatory economist, Regulatory Affairs Department, BT.

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SUMMARY

The new regime for the electronic communications sector has been heralded as enabling the reconciliation of sector regulation with competition law in which the application of *ex ante* regulation should become redundant as 'effective competition' develops[1]. Proportionate remedies are to be applied to undertakings with Significant Market Power (SMP) to facilitate the transition.

The thesis of this Paper is that in the context of innovation, the New Regulatory Framework (NRF) has given National Regulatory Authorities (NRAs) potentially conflicting objectives which means that any attempt to align sector regulation with competition law will be extremely difficult. Further, the methodology currently being developed as the basis for *ex ante* remedies is not likely to be robust, with a consequence that NRAs are quite likely to identify market power where none exists and to impose obligations in which short-term welfare gains may either prove illusory or are likely to be outweighed by longer term detriment to the rate of innovation.

Regulatory Authorities are explicitly relying on the Hypothetical Monopolist Test (HMT) in determining market boundaries, but may not fully appreciate the limitations of this test in emergent markets - or of how all the relevant economic factors apply in a differentiated product setting. A particular concern is the relationship between market power and sunk costs, with NRAs advancing the latter as a major reason for *ex ante* regulation. However, as explained in this paper, whilst sunk costs tend to increase entry and exit barriers, and whilst their presence may also be used as a predatory device, they can just as easily imply a reduction in, or indeed absence of, market power in a proper assessment under the HMT. The logic of our arguments is that there is a directional bias toward finding overly narrow economic markets - and hence SMP – when in many cases market power does not exist. As a consequence, NRAs will be inclined to regulate on a 'just in case' basis and so perpetuate regulation under the "original sin" hypothesis of the previous regime[2].

The NRF and its associated guidance documents give conflicting and confusing guidance to NRAs in how to assess innovative activities and in general, appear to be more concerned about establishing a 'level playing field' between incumbents and entrants than with applying correct economic principles to underpin proportionate regulation. As far as innovation is concerned, the HMT is essentially a short run test of market power which is ill-designed to offer policy advice when competition is Schumpeterian in nature[3] ('for the market' rather than 'in the market') or

[1] See for example the speech by Mario Monti 'Competition and Regulation in the Telecom Industry - The way forward, ECTA Conference, Brussels, 10 December 2003. (Available at web address: http://europa.eu.int/comm/competition/speeches/index_speeches_by_the_commissioner.html) See also the report by the European Regulators Group (ERG) 'ERG Common Position on the approach to appropriate remedies in the new regulatory framework', ERG (03) 30 rev 1 April 23rd 2004.' This includes the following statement – 'While under the old framework entire areas of the economy were subject to the same level of regulation, under the new framework each market will be subject to an appropriate regulatory response to specific, clearly identified problems. The result is that the overall level of regulation will be, with time, lower, more targeted at the competition problems, and conducive to a situation in which regulation will be needed increasingly less.' Referred to as the ERG paper forthwith; see also the associated Explanatory Memorandum to ERG (03) 30rev1. (Available at web address: http://www.erg.eu.int/doc/whatsnew/). The ERG was established by the Commission under Decision 2002/627/EC to advise the Commission on the consistent application of the NRF throughout the EU.

[2] The notion of 'original sin' in this context reflects the idea that market power is inherited from the position of an incumbent which had enjoyed 'special and/or exclusive rights' (possibly from pre-privatisation public utility status) and which would consequently automatically be attributed Significant Market Power. This was one of the proposals considered in the development of the NRF.

[3] See Schumpeter J., 1943, Capitalism, Socialism and Democracy, George Allen and Unwin, London, and in the UK regulatory context, Lind R.C., Muysert P., and Walker M., 2002, 'Innovation and competition policy', Economic Discussion Paper 3, Office of Fair Trading, London (available at web-address: http://www.oft.gov.uk).

more generally where risky investments and uncertain demands make the designation of services to specific economic markets an imprecise exercise.

It is argued below that the combination of misalignment in the goals of the NRF between *ex ante* regulation and competition law, and the mis-application of the HMT by NRAs, are likely to be mutually reinforcing factors. A plausible outcome in this framework will be stagnation in the sector and continuing conflict between the two strands of regulation.

1. MARKET POWER AND REGULATORY GOALS IN THE NRF

1.1 The Evolution Of Sector Regulation

The regulation of the traditional telecommunications sector evolved over a period in which the application of competition rules and sector specific regulatory measures were mutually reinforcing in promoting competition[4]. A major overhaul of legislative measures began in 1999 and came to fruition in April 2002 when four key Directives became Community law[5] with transposition by July 2003. In addition, the Commission issued Guidelines[6] on the application of competition rules in the NRF and a Recommendation[7] on the application of economic principles to the market review process, respectively produced by DG Comp and DG InfoSoc.

These Directives effectively consolidated and considerably developed the existing patchwork of legislation in two key ways. The first aims for alignment of competition law with *ex ante* sector regulation through a common benchmark of market power at the level of the undertaking. The concept of market dominance under competition law was transposed to the notion of SMP in the NRF. An undertaking without SMP would not generally be expected to be regulated. The second feature is the incorporation of technological neutrality, by which is meant that the precise form of the technology used would no longer by itself determine whether regulation would be imposed.

A detailed exposition of the legal principles in the NRF for the assessment of market boundaries and SMP is given by de Streel[8]. The key economic tool used by the Commission and NRAs to define market boundaries is in fact the HMT, borrowed from merger control but applied in a forward-looking assessment of the services in question. NRAs are instructed to take a 'forward look' regarding likely market developments and to hypothesise how trends and anticipated changes may affect the future structure of these markets.

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[4] See for example 'Access Issues Under EU Regulation and Anti-Trust Law – the case of telecommunications and Internet markets'. H. Ungerer, Research Paper, CFIA Harvard University, July 2000 available at http://www.wcfia.harvard.edu/fellows/papers99-00/ungerer.pdf

[5] Directive 2002/21/EC of the European Parliament and of the Council of March 7, 2002 on a common regulatory framework for electronic communications networks and services: [2002] O.J. L108/33; Directive 2002/20/EC of the European Parliament and of the Council of March 7, 2002 on the authorisation of electronic communications networks and services: [2002] O.J. L108/21; Directive 2002/19/EC of the European Parliament and of the Council of March 7, 2002 on access to, and interconnection of, electronic communications networks and services: [2002] O.J. L108/7; Directive 2002/22/EC of the European Parliament and of the Council of March 7, 2002 on universal service and users' rights relating to electronic communications networks and services: [2002] O.J. L108/51.

[6] Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services. (2002/C 165/03) July 2002.

[7] Commission Recommendation on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC. OJ L 114 , 08/05/2003 P. 0045 – 0049. The Commission also published a Memorandum associated with the Recommendation available at - http://europa.eu.int/information_society/topics/telecoms/regulatory/maindocs/documents/explanmemoen.pdf

[8] 'The New Concept of "Significant Market Power" in Electronic Communications: The Hybridisation of the Sectoral Regulation by Competition Law', ECLR Vol 24 October 2003.

The operation of the HMT is outlined below. The policy issue for merger analysis involves the assessment of whether a merger would lead to significant price increases and consumer welfare losses. In the assessment of relevant markets by contrast, the HMT determines the market boundary by finding the smallest set of products or services for which it is profitable to raise prices significantly 'above the competitive level' (where 'significant' is often taken as a 10% price increase).

In fact, the Guidelines (para 40) suggests that the HMT is only - 'One possible way of assessing the existence of any demand and supply-side substitution', and indeed the Guidelines also quotes (paragraph 65) case law on relevant markets in the communications sector. By contrast, the economic analysis given in the Recommendation Memorandum justifying *ex ante* regulation solely employs the notion of the HMT and in fact quotes no case law at all[9]. In practice, the notion of the HMT seems to underpin all of the analysis which NRAs are being expected to undertake in defining relevant markets for regulation.

1.2 The Goals in the NRF and Competition Law

The Framework Directive (FD) Art. 8 sets out a range of policy objectives for NRAs including: Art. 8.2, the promotion of competition; Art. 8.3, the development of the internal market; and Art. 8.4, the promotion of the interests of citizens of the EU. No hierarchy of objectives is suggested and in practice almost all attention of the regulatory community appears to be centred on the first of these, namely promotion of competition[10].

Effective competition is aligned to the assessment of SMP under FD Art. 16.3. Hence, - 'Where a national regulatory authority concludes that the market is effectively competitive it shall not impose or maintain any of the specific regulatory obligations….' and conversely under FD Art 16.4 'it shall identify undertakings with significant market power .. and shall impose appropriate specific regulatory obligations referred to in paragraph 2 of this Article'. The Guidelines (para 19) set out that - 'A finding that effective competition exists on a relevant market is equivalent to a finding that no operator enjoys a single or joint dominant position on that market'.

The NRF appears to be ambiguous in terms of the relationship of how the 'promotion of competition' should be related – if at all – to the concept of 'effective competition'. On the one hand, the Guidelines (para 16) indicates clearly that the purpose of the *ex ante* obligations on undertakings with SMP is to prevent abuse. This offers no support for the idea that promotion of competition is intended to be a pro-active conscious plan to reduce the market power of those undertakings with SMP so that dominance is removed. On the other hand, FD 8.1 states explicitly that 'Member States shall ensure that in carrying out the regulatory tasks specified in this Directive and the Specific Directives, in particular those designed **to ensure effective competition,** national regulatory authorities take the utmost account of the desirability of making regulations technologically neutral'. Further, the ability to impose remedies on SMP undertakings is the only clear set of policy instruments open to NRAs in which they can 'promote competition'.

In practice, it is not clear that when an NRA imposes remedies, it will be possible to distinguish their intent or impact from where there is deliberate intent to erode market power or simply to prevent abuse. It seems likely that NRAs have been given some latitude in this regard. In the UK,

[9] In fact many of the cases are actually from mergers only taken to the first phase.
[10] This Paper does not address the consistency of these goals with the others in the Framework Directive Article 8.

Ofcom[11] is quite explicit in advocating a strongly pro-competitive stance –'Without the imposition of *ex-ante* regulations to promote actively the development of competition in a non-effectively competitive market, it is unlikely that *ex-post* general competition law powers will be sufficient to ensure that effective competition becomes established. For example, this is because *ex-post* powers prohibit abuse of dominance rather than the holding of a dominant position. *Ex-ante* powers can be utilised to reduced the level of market power in a market and thereby encourage effective competition to become established.'

NRAs are also given the objective in the FD Art. 8.2c of 'encouraging efficient investment in infrastructure and promoting innovation'. In turn, the Guidelines (para 32) suggests that - 'As far as emerging markets are concerned ... where *de facto* the market leader is likely to have a substantial market share, should not be subject to inappropriate *ex ante* regulation. This is because premature imposition of *ex ante* regulation may unduly influence the competitive conditions taking shape within a new and emerging market. At the same time, foreclosure of the emerging market should be prevented'.

While dynamic competition is identified in outline conceptual terms in the NRF - in particular in the Recommendation Memorandum and also the Guidelines (para 80) - in practice the notion of an emerging market is not formally defined in the legislation, nor how innovative activities are to be identified (except with respect to the HMT as discussed in detail below).

Furthermore, the key economic feature of an innovative market is precisely the acquisition of short-term profits which are 'Schumpeterian' in nature. Without it there is no incentive to innovate in the first place. So on the one hand if it is considered that NRAs are to 'promote' competition by facilitating the removal of SMP, then this is likely to be in conflict with the duty to 'promote' innovation and investment in infrastructure where the acquisition of market power could reasonably be regarded as an integral part of the competitive process[12]. (This is of course one argument why the NRF should not be interpreted as implying NRAs are under a duty to erode or prevent the emergence of market power.)

It should be noted that in the context of individual conduct, neither the presence nor acquisition of (significant) market power are abuses under competition law[13] but the strengthening of a dominant position may lead to prohibition of a merger[14].

[11] Fixed Narrowband Retail Services Markets. Final Explanatory Statement and Notification, paragraph 4.10, 28 November 2003. Available at: www.ofcom.gov.uk

[12] The inherent tension lies in, on the one hand, concern over promoting competition 'in the market' (essentially a relatively short-term phenomenon) , against that of promoting competition 'for the market' (an essentially longer run phenomenon). The latter is more concerned with network and infrastructures and the former tends to be associated with service based competition on a single incumbent network. Too much emphasis on regulation of competition in the market can kill off the returns to R&D and investment generally in competition for the market. The political economy of regulation (in particular, the incentives for regulators to be seen to be having an impact in the short-term) suggests that regulators are likely to suffer from the 'British disease', namely that of being overly ***short-termist*** in their assessments.

[13] Compagnie Maritime Belge Transports SA [Cases C-395/96 P and C-396/96 P] 37. "However, a finding that an undertaking has a dominant position is not in itself a ground of criticism but simply means that, irrespective of the reasons for which it has such a dominant position, the undertaking concerned has a special responsibility not to allow its conduct to impair genuine undistorted competition on the common market (see Michelin, paragraph 57)." Also in UK competition law, the OFT in "The application of the competition act in the telecommunications sector": states "The holding of a dominant position is not prohibited. It is the abuse of a dominant position that is prohibited" (Guideline 417 of Feb 2000 paragraph 2.4).

[14] Gencor v. Commission, (1999), Case T-102/96 (paras 316-317).

There are further concerns. The Commission Guidelines (para 25) state that the alignment of competition law and sector regulation using dominance is indicative only - 'The designation of an undertaking as having SMP in a market identified for the purpose of *ex ante* regulation does not automatically imply that this undertaking is also dominant for the purposes of Article 82 EC Treaty or similar national provisions' i.e. the markets defined for *ex ante* purposes are without prejudice to those defined under competition law in specific cases. While from a legal perspective it is clearly reasonable that competition authorities cannot have their discretion fettered and companies may not be dominant even if they are attributed with SMP, the clear danger arises that disparities in market boundaries and findings of SMP in the two regimes will result in distortions including possibilities of double jeopardy and the potential for conflicting remedies.

In summary, there now appears to be a set of goals in the NRF which are internally and mutually difficult to reconcile - even before consistency with competition law is considered. The NRF may be interpreted as implying a policy goal to remove dominance but *ex ante* regulation is only to be applied when it is clear that competition law is inadequate. If NRAs treat the NRF as justifying the removal of market power and preventing its emergence, then there will in any case be little to no role for competition law under Art 82.

1.3 The Sources of Market Power

The economic framework proposed in the Recommendation underpinning the Commission's proposed markets comprises a three-stage approach of assessing: (a) whether there are high and non-transitory barriers to entry; (b) whether the market will tend to effective competition over time; and (c) on 'the relative efficiency of competition law remedies alone to address the market failure identified according to the two first criteria' (de Streel[15]). It is a requirement for these three stages to be satisfied for *ex ante* regulation to be applied i.e. high barriers to entry, no tendency to effective competition and inadequacy of competition law are all needed to justify *ex ante* regulation.

Having made this initial assessment, the Recommendation then uses the concept of the HMT to propose specific market boundaries for a very wide range of electronic communication services which are grouped into 18 distinct economic markets. The same methodology is to be used by NRAs to define broader or narrower alternatives to those of the Commission, taking account of national circumstances, although if NRAs differ in their findings, this is subject to some checks and balances with formal appeal or review procedures at both national and European (Commission) level respectively under Articles 4 and 7 of the Framework Directive.

Turning to the assessment of SMP, the Guidelines (para 70) proposes the tests developed under case law, noting that in a forward-looking context - 'NRAs are in principle, relying on different sets of assumptions and expectations than those relied upon by a competition authority applying Article 82, *ex post*, within a context of an alleged committed abuse'. The Guidelines also argues (para 73) that in an *ex ante* setting, - 'market power is essentially measured by reference to the power of the undertaking concerned to raise prices by restricting output without incurring a significant loss of sales or revenues'. This is broadly the same question posed by the HMT in deriving market boundaries, but this is explicitly a net profit test.

Putting to one side the efficacy of competition law, the first two criteria indicate that market power is built around initial entry barriers which may become less important as time passes. The timeframe for these criteria however is quite critical; an HMT assessment in the NRF is only over

[15] de Streel op. cit.

a short-term of up to 2 years. On this point, the Recommendation Memorandum states – 'Future developments are also important but must be developments which are considered in a meaningful timeframe rather than something which may be theoretically possible. This timeframe should be aligned to the period between (NRA) reviews, so as to capture only developments taking effect during that period.'

This indicates that NRAs are being expected to take a short-term view of competitive entry in a marketplace and sector. However investments take many years to come to fruition and Schumpeterian competition necessarily requires such short-term 'monopoly' profits as the reward to innovation and competition 'for the market'. The tension between these goals is of major concern as discussed below.

Whatever the time period being adopted, NRAs are now either explicitly, or implicitly, making a short-term economic assessment which has the HMT at its root for both market boundaries and market power. The precise nature of these implicit calculations and assessments is examined next.

2. THE ASSESSMENT OF MARKET BOUNDARIES IN THE NRF

2.1 Background

There are two key aspects of how market boundaries are being defined in the NRF which give cause for concern. The first is the general application of the HMT and whether or not this is being used correctly. The second wider question concerns the treatment of innovative services and the assessment of the relevant market boundaries for such services.

2.2 The Use of the HMT to define Market Boundaries

The HMT has been widely reviewed in the economic and competition law literature[16] and the general consensus is that in spite of conceptual difficulties such as the *cellophane fallacy*[17] and practical difficulties of empirically measuring the key variables, it remains the most important tool in the quest to identify market power. In the context of mergers, extant prices and outputs can be used as the basis of a forward-looking assessment of market impact whereas in an alleged abuse of dominant position, the counterfactual of what a 'competitive benchmark' needs to be assessed; the latter is likely to be error prone and potentially controversial.

The HMT asks (in a multi-product analysis) whether an α % (often 10%) price increase over and above the competitive price level would be profitable or not. In the single product case, this can be translated into a critical sales loss test[18].

Recent economic research[19] has set out much more clearly the conditions for a set of products to form a minimum set in which the Hypothetical Monopolist could exercise market power in a differentiated product environment. An intuitive guide to this technical analysis is given below[20].

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[16] See for example Crocioni, "The Hypothetical Monopolist Test: What It Can and Cannot Tell You", ECLR [2002] Issue 7. See "The role of market definition in monopoly and dominance inquiries", Economic Discussion Paper 2 July 2001, A report prepared for the OFT by NERA, OFT342 (available at: Web-address: http://www.oft.gov.uk).

[17] Using actual price, when this reflects monopoly power (rather than the competitive price level), is often referred to as the 'cellophane fallacy', following a US supreme court case concerning the market for cellophane wrapping (US v E.I.duPont de Nemours&Co., 353 US 586 [1957]).

[18] As part of the implementation of the NRF, Ofcom has used the critical sales loss in its deliberations of market boundaries – see 'Wholesale Broadband Access Market Explanatory Statement and Notification' 16th December 2003, available at www/Ofcom.org.uk

The key economic variables which enter the HMT assessment are revenue shares (prices times quantities); price-cost margins (the mark-ups of the excess of price over marginal cost expressed as a ratio to price); the size of the α % price increase; and own and cross-price elasticities. For a given set of products being tested, the calculation (of whether raising prices by a factor 1+α, where α = 0.1 for a 10% test) involves summing across all the products i in the set of products being assessed for a viable economic market, the term:

$$\begin{pmatrix} Revenue\ from \\ i^{th}\ product \end{pmatrix}\left(1+\begin{pmatrix} \alpha + markup\ from \\ i^{th}\ product \end{pmatrix}\times\begin{pmatrix} a\ row\ sum\ of\ own\ price \\ and\ cross\ price\ elasticities \end{pmatrix}\right)$$

(where the row sum of elasticities is a normally a negative number as the own price elasticity outweighs the cross price elasticities). If the overall sum is positive, then it can be concluded that, for that set of products, a price increase by a factor 1+ α will be profitable. The above formula makes clear the interaction between the critical variables – and the fact that an overall judgement needs to take account of the interaction of the variables (revenues, mark-ups, elasticities).

The mark-up should in theory be that which would arise in a competitive market. In perfect competition, price is equal to marginal cost and there is a zero mark-up. However, in nearly all practical applications, there are significant fixed and sunk costs; in such circumstances the relevant pricing benchmark is that in which price is equal to average cost (a 'quasi competitive price level' as would occur in a contestable market). It follows that there can be a positive mark-up over marginal cost. In practice, existing prices are often used as a proxy for competitive prices (Guidelines para 49). In the single product case, it is also possible to use the estimate of cost elasticity to estimate the competitive mark-up, since this gives an estimate of marginal cost to average cost.

The research also demonstrates clearly that market power and market boundaries are - as many economists have argued[21] - two sides of the same coin. The underlying equations of the HMT show the magnitude by which profitability (market power) is acquired or reduced by the addition of new products to the set of products being considered as a relevant economic market. Where market power becomes sufficient to define a minimum market, the exercise of the HMT can be terminated.

The relationship of prices to costs in this framework is critical. To judge this, consider two scenarios of pricing at marginal cost (perfect competition) and pricing at average cost. In the former case, price cost margins are zero and it can be shown[22] that market power will be found so long as demand is more inelastic than the ratio $1/\alpha$. For example, with a 10% test, $\alpha = 0.1$, and demand merely needs to be more inelastic than -10 (something which is likely to be found in

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[19] See I.M. Dobbs, "The assessment of market power and market boundaries using the hypothetical monopoly test", Discussion paper, University of Newcastle upon Tyne Business School [2002], available at http://www.staff.ncl.ac.uk/i.m.dobbs/, and Dobbs, " Demand, cost elasticities and pricing benchmarks in the hypothetical monopoly test: the consequences of simple SSNIP", [2003] Applied Economics Letters, vol. 10, 545-548.

[20] See also the submission by BT to the Commission public consultation on the draft Recommendation of relevant markets available at - http://europa.eu.int/information_society/topics/ecomm/doc/useful_information/library/public_consult/relevant_markets/fixed/bt.pdf

[21] See for example F.M. Fisher, "Diagnosing monopoly', Quarterly Review of Economics and Business" [1979], vol. 19, 7-33.

[22] See Dobbs, 2003, op.cit. See also the excellent general review of the issues in defining markets in the telecoms industry by J. Gual 'Market Definition in the Telecoms Industry', CEPR Discussion Paper No. 3988, July 2003. Available at: www.cepr.org/pubs

many applications). By contrast, if there are significant fixed costs, the price cost margin is positive and so (because the row sum of elasticities can be assumed negative) this makes finding a price increase profitable less likely. In the extreme case where all of the costs are fixed, with zero marginal costs, the price cost margin is unity, and it can be shown the 10% price increase will be profitable only if demand is inelastic (actually, more inelastic than $1/(1+\alpha)$; with $\alpha = 0.1$ for a 10% test, more inelastic than 0.91).

Outside of the extremes, any assessment of market power requires consideration not only of demand elasticity, but also of price cost margins. That is, it requires an assessment of what the price to marginal cost margin would be if the market was (quasi-) competitive, with price equal to average cost[23]. In applying the HMT, the time horizon involved also becomes critical not only because this will typically affect the assessment of elasticities, but also the assessment of marginal costs, and hence price-cost margins. The longer the period, the more elastic demands tend to be – and the more costs will be variable rather than fixed (that is, the higher the marginal cost assessment will tend to be, the longer the time horizon taken).

2.3 The HMT and Errors in Application

As noted above, consideration of price-cost margins is critical in the HMT, yet typically this is usually totally overlooked by NRAs, who have tended to focus purely on the extent to which customers are likely to substitute to other services. This approach is not merely incomplete, but will be biased in its conclusions; the very sectors which are being subjected to regulation are ones where fixed costs are most important and sole consideration of demand elasticities will tend to find market power where none exists or the strength of market power is over-estimated. A finding of market power (by a hypothetical monopolist not an individual supplier) when none exists, is described as a 'Type 1' error under the hypothesis of no market power. The converse is when market power is not found when actually it does exist – a 'Type 2' error. The circumstances in which these errors are likely to occur is discussed below using the single product case as an illustrative example[24].

In general, the Type 1 error will arise when the NRA assesses market demand as more inelastic than it really is, and/or it assesses marginal costs as larger than the true marginal cost (both should be evaluated with respect to the period of the review itself). In practice, it is commonplace for NRAs to ignore the price-cost margin limiting attention to the extent of demand side substitution. By merely focussing on substitution effects, the role of the mark-up in equation (1) is being ignored and since the mark-up 'gears up' the impact of the (overall negative) sum of elasticities, this practice increases the chance of finding the price increase is profitable and in so doing, NRAs will bias their assessment toward erroneously defining market boundaries too narrowly, a Type 1 error.

The above discussion provides some indication of the likely direction in which errors may arise. As a general rule it might be reasonable to assume that both price elasticities and cost to volume elasticities increase with the choice of time horizon. In the longer run, consumers are able to adapt their capital equipment (where it is needed to consume the service) and to research

[23] There is also an argument that the relevant costs should be short-run avoidable costs since the price increase induces a volume **reduction**.

[24] See 'Biases and errors in the assessment of market boundaries for *ex ante* regulation with an application to internet services', I.M. Dobbs and P. Richards, University of Newcastle upon Tyne Business School Discussion Paper [2004], available at http://www.staff.ncl.ac.uk/i.m.dobbs/.

alternative products for suitability[25]. Similarly on the supply side, capital equipment needs replacing over time; as a consequence, long run marginal costs are often assumed to be higher than short run marginal costs[26].

There are of course some exceptions and for services in emergent markets, it is possible for elasticities to move in either direction. While on the one hand, arguably price elasticity will decline (become less elastic) over time as consumers become familiar with the product and increasingly value its functionality, on the other hand, later adopters may be more price responsive than early adopters. The overall impact of such trends is purely an empirical matter. Similarly, on the supply side, long-run marginal costs might be below short run marginal costs if there are short-run binding capacity constraints.

What this means is that considerable care is needed in using the HMT and especially where the underlying parameters can be expected to change over time and according to the length of the review period itself. In practice, regulatory authorities typically concentrate on functional differences between products to judge whether they are in the same or separate markets. To a very large degree, the Commission's Recommendation (Memorandum) conforms to this approach with the various telecommunication services being assigned to various markets on the basis of consideration of demand-side substitutability alone. In general, it is likely therefore, that NRAs will tend to find market power when either it does not exist at all, or it is not particularly strong. This in turn is important when assessing the existence of SMP as argued above - the weaker the grounds for a separate economic market, the less likely it is that the supplier of a single product (or sub-set of products) within that economic market will have market power by itself and the lesser should be the remedies under *ex ante* regulation.

At the extreme, such focussing on characteristics alone can narrow down to a finding that each and every product is a relevant economic market. As Lind et. al. note[27] - 'even where firms are earning substantial profits, it often appears that many firms are not exploiting their short-term pricing power. What this suggests is that if one applied the SSNIP procedure using the current price as is typical in competition cases, one might find in many cases that the relevant product market would be as narrow as the product of the firm in question'[28]. While it may be argued that SMP might be found even in a broader market encompassing the same product set, this procedure does not recognise the outcome of narrower markets almost certainly implying a much more intrusive regime of *ex ante* regulation than the minimum set of remedies needed in a more broadly defined market which is to ensure 'effective competition' in that market. In other words, it is not self evident that in a broader economic market, it is necessary for all services to be regulated especially where risk-taking and innovation are involved.

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[25] In the multi-product situation, there are cross-price and own price effects but the latter are typically assumed to dominate the former.

[26] Particularly for new services, where the norm is to 'build ahead of demand' in anticipation of a growing market, in which case short run marginal costs (associated with short run excess capacity) can be quite low (and persistently low).

[27] Innovation and competition policy, Economic Discussion Paper 3 March 2002 paragraph 4.56. Report prepared for the Office of Fair Trading by Charles River Associates., London, UK. (Available at web address: http://www.oft.gov.uk)

[28] It is interesting to note that Oftel (the UK NRA at that time) adopted much narrower retail markets for narrowband services than advocated by the Commission Recommendation and the Commission itself commented on this under the Framework Directive Article 7 procedure. See Ofcom Review of Fixed Narrowband Retail Markets, Consultation Document, 17/3/2003. (Available at web address: http://www.ofcom.org.uk)

In summary, the HMT is often undertaken with little or no reference to either the cost-volume relationship or to consistency in treatment of demand and supply-side parameters in the context of the review period. While it is possible for errors to be off-setting, the above analysis suggests the biases and errors are more likely to be in the direction of falsely finding market power when there is none.

2.4 The Identification of Emerging Markets

The evolution of regulation relevant to emerging markets is proposed in the guidance offered to NRAs by the ERG[29]. This document notes the advice in the Framework Directive (recital 27) that inappropriate regulation should not be applied 'where *de facto* the market leader is likely to have a substantial market share' and the Guidelines (para 85) which states that 'market power leveraged from a "regulated" market into an emerging, "non-regulated" market. In such cases, any abusive conduct in the "emerging" market would normally be dealt with under Article 82 of the Treaty'.

However, according to the ERG, this stance advocating regulatory forbearance also needs to be tempered where 'to the extent that there is a real threat of market power being leveraged, foreclosure of such emerging markets by the leading undertaking should be prevented through effective regulation of the market(s) from which market power may be leveraged'.

With respect to the identification of an emerging market, the ERG proposes that NRAs apply the HMT – 'This means that consumers of the new service should not move their custom to currently available services, in response to a small but significant non-transitory increase in the price of the new service. In a similar manner, firms currently providing existing services should not be in a position to quickly enter the new service market in response to such a price increase.'

Thus the ERG proposes that NRAs apply the HMT to emergent services which will have unstable and potentially rapidly changing demands and where it may be difficult to say very much about own and cross price elasticities. Indeed the ERG itself notes that - 'The distinguishing feature of an emerging market is that the market is immature. This implies that on an emerging market it is not possible to make definitive findings on whether or not the three criteria are met.'

In the absence of reasonably stable assessments for such parameters, it will inevitably be difficult for the NRA to make anything other than impressionistic assessments of market boundaries and market power. Impressionism gives latitude for regulators to pursue a variety of agendas. A political economy perspective suggests that regulators feel the need to have an 'impact' - doing nothing is an extremely risky strategy for them to adopt[30].

The second test which the ERG advocates to assess whether regulation is appropriate in emerging services/markets, is whether legacy infrastructure is used in the provision of the new service. The

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[29] op.cit. See in particular the text at section 1.2.1 'Textbox 1: Emerging Markets'.

[30] If a regulatory agency expends significant resource in finding no need for regulation, there are no 'tangible benefits' from its activity – but the costs are very tangible. At the margin there is always going to be a bias towards regulatory short termism. If a position of SMP has arisen which follows from the absence of ex ante regulation, then this will be visible and the NRA will be perceived to have failed in its duties. On the other hand, if regulation is imposed which is not justified (in that market power would not have arisen in the absence of ex ante regulation), this cannot be established as a matter of fact or observation.

aim is to ensure that there is no false ‘safe harbour’ for firms claiming that an emerging service is part of an emerging market and thus potentially escaping regulation[31].

The ERG argues as follows –‘In an emerging market there may be the need for regulatory action if a failure to act will lead to the complete foreclosure of the emerging market. This can occur where the emerging market depends upon inputs that cannot be replicated or substituted within a reasonable period of time. In these circumstances, there may be grounds for early regulatory intervention (in the market from which the market power could be leveraged) to guarantee access to this input in the normal manner, in order to allow competition to develop in the emerging market. In this way, the distinct nature of the emerging market is maintained whilst at the same time preventing foreclosure by applying regulation only on the necessary input market. In these circumstances, the NRA should attempt to leave the incumbent and the new entrant in an equivalent position in terms of investment incentives. In this way, **both the new entrant and the incumbent can address the new market opportunities on an equal footing in terms of access to necessary legacy network inputs that are non-replicable**. However, if the new investment is being made by a new entrant that necessarily requires an input from an SMP operator, the NRA will have a role to ensure that access to this input is not denied, delayed or otherwise obstructed.’ (emphasis added)

The ERG thus takes as axiomatic that legacy inputs used in the emerging market service should be unbundled in order to enable third parties to replicate the service in question. In practice the likely upshot is that **all** of the necessary inputs – whether legacy or not - will have to be unbundled as a *per se* rule[32]. This can be judged to be a seriously flawed approach for the following reasons.

Firstly, in economic terms, an emerging market is one where market power is not assured (as the ERG recognises it is ‘immature’) and it is therefore only prospectively a market where market power may be held (a point which the ERG also acknowledges). If this is the case, it is difficult to see how market power in the inputs can be attributed the status of an essential facility as the ERG indicates[33]. Rather, the ERG couches the justification for *ex ante* regulation in terms of legacy networks and the need to ensure parity of treatment between entrants and incumbents i.e. the doctrine of “original sin”. But this approach does not appear to be compatible with the advice in the Guidelines (para 85) which argues for the application of competition law to deal with inter-temporal leverage. The ERG thus wishes to ‘have its cake and eat it’ advocating that NRAs ‘strike a balance … to preserve incentives to invest and innovate’ while at the same time promoting mandatory unbundling which undermines those very incentives.

Secondly, there must be considerable doubt whether the three criteria in the Recommendation provide a relevant test of whether innovative services should be subject to *ex ante* regulation. Structural barriers to entry (the first criterion) such as high levels of economies of scale and scope

[31] There does not appear to be definitive statement of what precisely constitutes legacy infrastructure in any official document.
[32] While not advocating a strict rule as such, this is almost the position of Oftel – see ‘Imposing access obligations under the new EU Directives’ Annex 5, Oftel, 13 September 2002. Available at Web address: http://www.ofcom.gov.uk
[33] Note that the essential input of the copper loop has already been unbundled for incumbent telecom operators Regulation (EC) 2887/2000 on unbundled access to the local loop. In practice, the ERG proposal would appear to extend the likelihood of much wider regulation of network services to entirely new investments and infrastructures which have absolutely no legacy aspect whatsoever. Further, there is no obvious way in which NRAs would be able to distinguish between legacy and new infrastructure given the nature of electronic networks which are interconnected and operated in a highly complex integrated fashion.

have an ambiguous relationship to market power and a 'tendency toward effective competition' (the second criterion) presupposes that the NRA can forecast the competitive reaction to an innovative service whose own commercial success is not guaranteed. The third criterion, the sufficiency of competition law, appears to be almost ruled out by the ERG emphasis on *ex ante* intervention in the first place.

Thirdly, the whole notion of Schumpeterian competition is most definitely not about NRAs ensuring that all players have an equal chance of success. On the contrary, it is diametrically opposed to such a stance. Disruptive services and technologies by their very nature are unpredictable and where the incentive to take risks is dependent on asymmetries of opportunity. Dynamic competition is all about investing in R&D in the hope that some innovation flows which will capture a lead in the market place on which the firm can then earn a return on its original investments. Short termist regulation, in so far as it focuses on short run profitability, inherently caps the returns from the successful ventures (whilst not reimbursing those that are unsuccessful)[34].

2.5 An Example of Incorrect Regulation under Innovation

This failure to properly consider the nature of innovation and risk-taking can be clearly seen in the manner in which regulation is being proposed for what currently are, or shortly will be, directly competing platforms for the delivery of broadband services. These services are supplied over the competing fixed networks of incumbent telecom copper networks, the parallel fixed networks of cable companies (although not in all countries), and through third generation wireless mobile (3G). (A further fast growing alternative is wi-fi which combines mobile and fixed networks.)

The Commission suggests[35] that in the case of 3G mobile services - 'It is difficult at this stage to foresee how services will develop in the context of 3G networks or the way in which they will be deployed and 3G services offered. Many of the services provided over 3G are likely to constitute new or emerging markets.'

However, the Recommendation includes a (wholesale) market described as 'bitstream access'[36], where apparently such services should be subject to *ex ante* regulation. According to the Recommendation[37] - 'This market covers bit-stream access that permits the transmission of broadband data in both directions and other wholesale access provided over other infrastructures, **if and when they offer facilities equivalent to bit-stream access**. It includes 'Network access

[34] In this respect the ERG merely counsels NRAs to be aware of contingent risks and the potential downside impacts of regulation, especially at the retail level. The ERG however fails to appreciate that the creation of downstream markets and services will typically require a high degree of forward pricing and an open access obligation (upstream at the level of the relevant network 'inputs') could easily result in these investments being commercially unviable.
[35] Communication from the Commission Towards the Full Roll-Out of Third Generation Mobile Communications, COM(2002) 301 June 2002.
[36] Bitstream access is the use of the high frequency spectrum over a copper pair (or the equivalent of another access infrastructure) to enable the simultaneous provision of traditional (narrowband) voice services with other services such as fast (broadband) Internet access and requires the installation of multiplexing equipment at the local exchange in conjunction with modern packet switching core network infrastructure. This new functionality possible over the copper loop was never originally envisaged at the time of their installation or even at the time of privatisation of at least some incumbent telecom operators. Its provision requires upgrading of both the access network and installation of new core switching and routing equipment. These investments are being made generally after the privatisation of most incumbent telecom operators and certainly are not legacy infrastructures.
[37] Op. cit. Wholesale broadband access.

and special network access' referred to in Annex I (2) of the Framework Directive …'. (emphasis added)

However, such services only apply over the traditional copper networks of telecom incumbents and for example do not necessarily apply to competing cable networks - so cable operators are to be treated as the equivalent of new entrants. They are deemed as not using legacy infrastructure and *ex ante* regulation would be applied to them only when such third party (bitstream access) services are **voluntarily** offered. It seems unlikely that a cable operator would voluntarily offer third party access if this resulted in more onerous regulation as a consequence.

The NRF appears in this instance to define three sets of standards for determining whether regulation is appropriate, but all of which are supposedly based on the same underlying economic analysis. In the case of 3G, the strong indication is that these services which will include high speed Internet access, will not be subject to regulation. Similarly cable companies will also not be subject to regulation unless they consciously put themselves into a position whereby they can be regulated by agreeing to offer third parties access services. However, incumbent telecom operators with copper networks will necessarily be regulated.

The Recommendation argues that access to the high frequency spectrum over copper can be considered as 'Network access and special network access' in the previous regulatory regime[38] but as Nikolinakos[39] points out, this is highly questionable, as special access is limited to the fixed public telephone network. Rather it appears to be the case that *ex ante* regulation is being advanced on the "original sin" hypothesis of incumbents 'inheriting' their access infrastructures[40].

Essentially, the NRF implies that all services whether innovatory or otherwise, are likely to be regulated if they pass over a copper network. For those operators with incumbent legacy copper access infrastructures, the concept of a 'safe harbour' to bring forward emerging services in an emerging market appears not to be a realistic possibility. The practical application of the NRF would appear not to follow the principle of technological neutrality. That is, regulation is being applied in an asymmetric fashion based on the specific networks used to deliver directly competing services to end users.

In summary, there is no review or assessment as to whether these new infrastructure investments are innovative or risky in their own terms and which would justify being left alone by regulators irrespective which economic markets they currently or potentially might be assigned to. Rather the basis of *ex ante* regulation is centred on the perceived injustice of incumbent operators acquiring a first mover advantage in spite of all essential inputs having already been unbundled.

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[38] Directive 98/10/EC on the application of open network provision (ONP) to voice telephony and on universal service for telecommunications in a competitive environment, O.J. I. 101/24 Article 16.

[39] 'Promoting Competition in the local access network', ECLR, Vol 22 July 2001. See also the decision of the Dutch (Rotterdam) Court, Decision of 31 October 2003 (Case number: 03/2569 VTELEC) available at http://www.rechtspraak.nl

[40] Nikolinakos (op. cit.) points out that this amounts to a denial of legitimate property rights of those who paid for the former state monopolies at the time of privatisation.

3. THE ASSESSMENT OF DOMINANCE IN THE NRF

3.1 The Identification of Market Power

Case law defines dominance in a highly qualitative fashion. In *United Brands* the ECJ talks about 'a position of economic strength enjoyed by an undertaking … giving it the power to behave to an appreciable extent independently of its competitors, customers and ultimately of its consumers'[41]. In *Hoffman-La Roche*[42], dominance - 'only enables the undertaking that enjoys such a position, if not to determine, at least to have an appreciable effect on the conditions under which that competition will develop, and in any case to act in disregard of any such competitive constraint so long as such conduct does not operate to its detriment'. In practice, case law has evolved with rough 'rules of thumb' and primary emphasis on market shares in excess of 50% indicating a presumption of dominance in absence of other supporting evidence[43].

As discussed above, the same tests for dominance are applied in the NRF, albeit the assessment is *ex ante* and not *ex post*[44]. However, the goal of 'effective competition' relies on the absence of dominance and so the remedies associated with SMP are designed with this in mind. The NRF also appears to give NRAs additional 'flexibility' to find SMP in a way where dominance would not be found under competition law. In other words, NRAs are more likely to find SMP when it does not exist, given the trade-offs which they face and their incentives to regulate as a precautionary principle.

It is clear that a key source of concern for regulators in trying to realise 'effective competition' is the presence of sunk costs. The potential impact of significant sunk costs raises the prospect that there will be 'high and persistent barriers to entry' (first criterion for *ex ante* regulation). In turn, this may imply that markets will not 'tend to effective competition' i.e. be contestable (second criterion). Arguably competition law will not be adequate to deal with any market problems arising (third criterion). For example, handling alleged cases of predation where the incumbent might legitimately price down as low as short-run average incremental cost without necessarily breaking competition law may be too weak a test if the goal is to pro-actively facilitate market entry[45].

A particular fear appears to be, that incumbents can leverage a position of inherited economic power into downstream markets or into new markets from bottlenecks in legacy networks, by disrupting competitive conditions in a manner which competition law cannot easily address e.g. the determination of an appropriate access price[46]. As a consequence, entry will be inhibited, and the attainment of 'effective competition' impossible.

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41 Case 27/76 [1978] E.C.R. 207, [1978] 1 C.M.L.R. 429 at para. 65.

42 Case 85/76, Hoffman-La Roche v Commission [1979] ECR 461, paragraph 39.

43 *Hoffman-La Roche* paragraph 60 and *AKZO* [1991] ECR II-3359, paragraph 60. These definitions seem to raise as many questions as they solve, which makes it difficult to develop objective criteria in practical implementation. How much is 'appreciable'? How could a firm be expected to operate to its detriment if it is profit maximising? Is the actual presence of profit maximisation – absent discrimination – an abuse of dominance per se? And if it is abusive, what criteria should be used to assess its degree of excessiveness?

44 See the Guidelines (para 78) which lists the criteria employed to assess dominance.

45 *AKZO* Case C-62/86 *AKZO Chemie v Commission* [1991] ECR I-3359 and *Tetra Pak v Commission* Case T-83/91 [1994] ECR II-755. The pricing standard of 'average total costs' in particular is extremely difficult to evaluate in a network structure of widespread economies of scale and scope and dynamic pricing.

46 Note for example the following 'General competition law is appropriate to deal with most competition problems except where there is some structural market defect which requires application of bespoke ex-ante forms of regulation – for example, regulation to ensure non-discriminatory access to bottleneck facilities controlled by dominant incumbent networks'. Contribution by the European Commission to ITU SG 3 meeting June 2002 COM 3-D 24-E.

For example, the Recommendation Memorandum argues that – 'a structural barrier to entry exists when, given the level of demand, the state of technology and its associated cost structure are such that they create asymmetric conditions between incumbents and new entrants impeding entry of the latter. For instance, high structural barriers may be found to exist when the market is characterised by substantial economies of scale, scope and density and high sunk costs'.

While this is a carefully stated position, it takes a static perspective of demand and technology. It does not recognise that there can be Schumpeterian competition 'for the market' and that the risk-taking associated with such competition is of necessity sunk cost intensive.

Further, at least some NRAs have tended to conflate barriers to entry with the **potential** for abusive conduct and found dominance on that basis alone[47]. A similar difficulty of identification arises in competition law; as Al-Dabbah[48] points out - 'the same factor indicating dominance under one circumstance, for example discriminatory pricing (*Michelin*[49] being a case in point), has evidently been used for the purposes of pointing towards an abuse under another; let alone the fact that Article 82 itself expressly states that discrimination is prohibited as it may well constitute an abuse of a dominant position'[50]. Case law does not appear to be particularly helpful in this regard, as it neither defines the extent of market power which it is legitimate for a firm to acquire, nor precisely the permissible means of doing so[51].

This underlying ambiguity in the interpretation of a firm's behaviour (actual or potential) as a common input to market boundaries, market power and abuse of market power, can also be seen in the NRF. The overall effect is to make a false SMP designation more likely.

For example, in the context of the review of the market associated with network services enabling broadband access, Oftel[52] argued that - 'There are considerable entry barriers to achieving a significant share of the local access market. BT and some OLOs (Other Licensed Operators) have already incurred substantial sunk costs associated with entering the access market. The cost of entry for a new competitor would thus be very high. If the expected post-entry price is such that entrants' post-entry profits fail to recover the sunk costs of entry and if the entrant foresees this, then entry will not take place. Accordingly, the threat that BT (and others) would reduce prices post-entry may deter OLOs from entering the access market.'

May/2002.

[47] Contrast this with Commission Decision Case COMP/C-1/37.451 – Deutsche Telekom AG) OJ L 263/9 14 October 2003. 'What DT fails to realise here is that the question of barriers to market entry for competitors is significant only for the purposes of establishing a dominant position and not for determining possible abuse.'

[48] 'Conduct, Dominance and Abuse in "Market Relationship": Analysis of Some Conceptual Issues under Article 82 E.C.', Maher M. Al-Dabbah, ECLR Vol 21:Issue 1 – January 2000.

[49] Michelin v Commission [1983] E.C.R. 3416, [1985]1 C.M.L.R. 282.

[50] In a similar fashion, Oftel cites 'The ability to price persistently and consistently above the competitive level is an indicator of market power' see 'Fixed Narrowband Services Market' Statement of August 2003. (Available at www/Ofcom.org.uk). Excessive pricing is however also an abuse under competition law and so the same or similar measure is being used for two purposes with an identification problem as in *Michelin*.

[51] In this context note the comments of RBB Economics who criticised the UK CCAT for failing to consider excessive profitability in a dynamic context, see RBB Brief 05 'Excess Pricing in the Napp Chapter II Case – how much is too much?' RBB Economics, September 2002.

[52] Consultation on draft Direction to resolve a dispute between BT, Energis and Thus concerning xDSL interconnection at the ATM switch, December 2001, Oftel, UK. See also 'Phase 1 Direction to resolve a dispute concerning the provision of partial private circuits', Annex C, Oftel, June 2000 and repeated in 'A dispute between BT and Vodafone regarding wholesale connections between BT's and Vodafone's networks', Oftel 24 January 2003. Note that as of December 2003, the duties of Ofcom have been subsumed within Ofcom.

Taken at face value, this text suggests that any firm which is first to market with any positive level of sunk costs can threaten subsequent entrants to such a degree that market power is presumed. No evidence of actual behaviour is needed in this perspective, only the possibility that it could occur.
With respect to the broadband consultation, Oftel subsequently clarified its position[53] as follows – 'The Director does agree with BT's comment that it is inappropriate to suggest that the pricing behaviour of BT or the cable companies with respect to broadband origination can be characterised as a strategic barrier to the market. The entry barrier the Director was seeking to identify relates to the importance of sunk costs in a market where future demand levels are intrinsically uncertain.'

Consider Oftel's reasoning on this. Firstly, if the cost for entrants is high, it was as likely to have been even greater for the pre-existing suppliers (which may or may not have been incumbents) who invested when technology was less advanced than for later entrants. Further, the absolute level of costs should not be used to justify dominance i.e. market power attributed to an undertaking simply because the firm through its shareholders (or other source of finance) have raised the capital necessary to build and support a network[54].

Secondly, the features of economies of scale and asymmetric entry conditions do not by themselves create market power and nor do high structural barriers to entry, although clearly both **may** be associated with market power depending upon the responsiveness of demand to price and the nature of cost variability to volume. Entry barriers may exist from subsequent switching costs (for example if customers are locked into existing suppliers) or it may be alleged that sunk costs confer an additional power to behave in a predatory fashion, but sunk costs by themselves do not create market power.

Thirdly, if the level of demand is 'intrinsically uncertain' as Oftel suggests in the case of broadband services (which might be typical of innovative services), this must cast some doubt on the ability of **any** supplier to be able to raise prices above the competitive level. Loosely, the higher the degree of uncertainty which a firm faces, the higher the risk adjusted discount rate will be applied to prospective cash flows and this lowers the expected return from the investment. A rational firm will only enter such a marketplace if prices are commensurately higher than those that would prevail if the commercial risks were lower.

In the market reviews conducted under the NRF in the UK, Oftel[55] repeated the sunk costs argument as follows – 'An important barrier to entry is sunk costs… A potential entrant will only incur the sunk costs of investment in an industry if it expects to cover these sunk costs as well as the avoidable costs of production from revenues earned. The incumbent on the other hand, has already made its sunk investments and so will stay in the market as long as it can cover its avoidable costs. The incumbent may then be able to exploit this asymmetry by signalling to the

[53] Direction to resolve a dispute between BT, Energis and Thus concerning xDSL interconnection at the ATM switch, June 2002, Oftel, UK.
[54] The Guidelines (para 78) notes that one criteria for assessment of dominance is 'easy or privileged access to capital markets/financial resources', see *United Brands* and *Continental Can*. In fact this relies on an assumption of distortion in capital markets and not the product market of the firm in question. However, a recent major study undertaken for the OFT argued that capital markets in the UK are competitive; see 'A Study into Certain Aspects of the Cost of Capital for Regulated Utilities in the U.K.', OFT 636, February 2003.
[55] Fixed Narrowband Retail Services Market, Explanatory Statement and Notification paragraphs 3.14-3.15, Oftel August 2003.

entrant that, if it were to enter the market, prices would be too low to cover sunk costs. Entry would then be deterred … The presence of significant sunk costs in the access markets considered in this Review would be one factor indicating that BT has SMP in these markets.'

In a similar fashion, and in the context of promoting competition in the provision of broadband services, the ERG[56] stated that – 'The reason (behind this shift of focus) … namely to foster competition in order to promote fast internet access offers to consumers – is being reached only in an unexpectedly slow way. As a result there is concern that the incumbent is profiting from a first mover advantage possibly pre-empting the xDSL retail services market …'.

The logical conclusion of these positions is that a market failure will occur whenever an 'incumbent' sinks an investment ahead of its competitors. In other words, any first move by an incumbent is also contrary to 'effective competition'[57]. As argued above, first mover advantage is integral to Schumpeterian competition in emergent and innovative markets. The NRF however would appear to preclude incumbents from entering markets and competing in this fashion by automatic designation of SMP.

In fact, it is conceptually possible to directly link the analysis which is undertaken using the HMT to derive market boundaries, to the associated market power at the level of the individual firm. This is likely however to be a static assessment at a given point in time. The manner in which market power may be derived over time will be likely to involve a more qualitative assessment of economic behaviour, as discussed in the section following.

3.2 The Relationship of Dominance to Market Boundaries and the HMT

In practice, regulators may be uncertain whether a market boundary is the correct one, yet may still proceed to the second stage of assessment of dominance taking no account of the fact that the market boundary may only be very weakly defined. That is, if it is not a true economic market, then the likelihood of any firm holding market power within that market is necessarily diminished.

This relationship can be deduced as follows. Suppose that a given set of services is a relevant market under the HMT. Then by definition, as this is a smallest sub-set which passes the test, all smaller product grouping do not pass the test. That is, for any product grouping that is defined as 'a market' under the HMT, it must be the case that for all sub-groupings, the HMT was **not** passed – and that must include the products of the individual firms when tested by themselves [58]. This includes, of course, all products taken in isolation. Thus the HMT, when it finds that milt-product or multi-service groupings are relevant economic markets, puts a limit on the amount of 'market power' that an individual firm/product can have within such markets.

[56] Bitstream Access, ERG Consultation Document July 14th 2003. (Available at web address: http://www.erg.eu.int/documents/index_en.htm)

[57] Note that the notion of first mover advantage by an incumbent as a market failure was the theoretical underpinning of Oftel's interconnection regime e.g. see the Oftel Statement 'Interconnection and Interoperability of services over telecommunication networks', April 1998. Alleged first mover advantage from sunk costs over legacy network was apparently a key consideration in attributing the incumbent (BT) with SMP in the market review for broadband services – 'Review of the Wholesale Broadband Access Markets' Final Explanatory Statement and Notification, May 2004. (Available at www/Ofcom.org.uk)

[58] Such a finding does not entirely preclude an assessment of SMP as market power could be defined as a lesser standard than that used for the α % price increase in the HMT. In other words, a market boundary could be defined on the basis of a 10% price increase being necessary and sufficient while a smaller price increase of (say) 5% could be used at the level of the individual firm.

Further, the informational requirements needed for the HMT are also to be found in the assessment of SMP[59]. The extent to which a firm can profitably act 'to an appreciable extent independently of competitors and consumers' by raising price and/or restricting output can in principle be directly assessed from the same economic parameters which enter the HMT.

It is however possible, that such an assessment would indicate that a firm has the **potential** to exercise market power but has chosen not to do so. The presumption of short-run profit maximisation is logical in a single period world. However, in innovative markets, new products come on stream and technology constantly develops. In such markets, firms can be expected to develop dynamic pricing strategies and short-run profit maximisation is not generally consistent with long-run profit maximisation.

There are a number of reasons why firms may choose to deviate from short-run profit maximisation as part of legitimate business activity, including the following:

(a) the cellophane fallacy level of pricing is not chosen because it is thought to be illegal *per se*[60] or because setting the price at this level might induce other forms of regulation;

(b) the firm is mistaken in its perceptions of its market position and so, in aiming to maximise profits, mistakenly sets prices either too high or too low;

(c) the firm understands its market position, but chooses prices below the profit maximising levels in order to attain other usually longer term, goals. For example, penetration pricing is generally at variance with a short-run profit maximising strategy; managerial discretion models also indicate that managers do not necessarily aim for short term profits, and so on.

(d) the firm is deliberately sacrificing short-run profits as a predatory strategy to force rivals to exit with the intent to recoup through higher prices subsequently, if and when entry barriers have been erected.

A high price-cost margin (and high profitability) therefore could indicate that a firm is short-run profit maximising to cellophane levels and potentially breaking competition law from excessive/discriminatory pricing[61]. On the other hand, a similarly high margin could indicate that the firm has taken very high risks and has legitimately competed in a Schumpeterian fashion 'for the market' and/or has significant fixed/sunk costs and/or is practicing penetration pricing for a new experience good.

The ERG[62] gives some recognition to the potential importance of innovation – 'Many new initiatives on the marketplace fail but successful ones create incentives for other firms to enter the market. In discussing the second criteria, in the Explanatory Memorandum to the Recommendation, it is stated that "entry barriers may also become less relevant with regard to

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[59] See 'The Total Output Restriction Tests for Market Dominance', I .M. Dobbs and P. Richards, University of Newcastle upon Tyne Business School Discussion Paper (2004 forthcoming).

[60] The very imprecision of case law on this matter indicates that this will be a source of uncertainty for firms who may be cautious in their marketing and pricing.

[61] For example with respect to excessive pricing, R. Whish, 'Competition Law', (4th ed. 2001) pp. 635-638, sets out the relevant case law including notions of: 'relation to the economic value of the product' (United Brands); 'yardstick competition' (Corinne Bodson v Pompes Funèbres); *de facto* monopoly (Ministère Public v Tournier). Unfortunately ,these give absolutely no practical guidance or economic insight as to how to address this issue in an objective manner. In a UK context, see 'Pricing and the Dominant Firm: Implications of the Competition Commission Appeal Tribunal's Judgment in the Napp Case', S. Kon and S. Turnbull, ECLR Vol 24:Issue 2 February 2003 and RBB Economics op. cit.

[62] Op cit.

innovation-driven markets characterised by ongoing technological progress. In such markets, competitive constraints often come from innovative threats from potential competitors that are not currently in the market. In such innovation-driven markets, dynamic or longer term competition can take place among firms that are not necessarily competitors in an existing "static" market." It is only with the elapse of a sufficient amount of time that these questions can be answered.'

3.3 Conclusions on Market Power and the NRF

Case law has evolved over time and now a wide range of criteria can be used to assess whether a firm has acquired a position of market power. The absolute level of that power is however not defined nor have any clear guidelines been developed which would illustrate when a profit or pricing outcome could be regarded as the unlawful practice of a dominant position. Further, there are some acute problems of identification in which the assessment of market boundaries, market power and abuse of power may be treated as being jointly determined by the same evidence or supposition of likely behaviour.

The ERG does not however countenance that NRAs should be able to desist from intervention until 'time has elapsed' but instead generally takes a pro-active interventionist stance. The difficulties in applying the HMT to emerging services/markets translates directly into the likelihood of false SMP designation; the NRF is presumptive that market power will be held when the underlying uncertainties may dictate otherwise.

There is at least some evidence that the greater latitude given to NRAs in the NRF, is extending this practice from the anticipation of behaviour which may not have been observed in practice. The danger of finding SMP is thus amplified from two sources – the markets being defined too narrowly and the incorrect interpretation of firms' behaviour which is dynamically pro-competitive and not indicative of a finding of dominance.

4. CONCLUSIONS: POLICY IMPLICATIONS

The NRF is ambitious in its aim to offer an environment in which regulation can adapt to technological change and simultaneously enable the reconciliation of different strands of *ex ante* and *ex post* regulation. It is becoming apparent, however, that the NRF is in some instances at least, not merely perpetuating the previous regime, but extending it significantly into new innovative services. This arises from the flawed methodologies to assess market boundaries and SMP, and the introduction of further criteria such as the arbitrary notion of 'legacy networks'. This in turn will mean that technological neutrality will not be realised between competing infrastructures - and as a consequence, the evolution of *ex ante* regulation to the standards of competition law will be unrealisable.

It can be deduced that regulation in the NRF is actually focussed on a mixture of public policy and industry structure goals, but mainly on trying to elicit specific outcomes. The tendency in particular is to define narrow market boundaries and potentially incorrect SMP designations with the specific aim of levelling the market shares of incumbents and entrants. The net result is in some respects actually quite close to the regulation in the previous regime – namely that there is an automatic presumption of SMP for incumbents under the hypothesis of "original sin". It is certainly hard to reconcile this approach with some of the stated aims and objectives in the NRF itself as outlined in Section 1.1 above. These included the use of the fundamental economic principles of competition law and for NRAs to encourage sustainable investment and innovation; in practice such objectives are being relegated to, at best, being secondary goals.

The substantive problem in the NRF is that NRAs are being expected to undertake difficult economic assessments while the underlying goals are inherently in conflict. Simplistic application of the HMT is inadequate for the purposes of establishing whether SMP is held in either existing or emerging markets. The potential for an incorrect finding of SMP is relatively high when market boundaries are drawn too narrowly and economic behaviour is open to different interpretations.

The danger for *ex ante* regulation is that the deficiencies of competition law may be exaggerated and result in intervention where is it not needed and where evidentiary standards have not been met[63]. Unquestionably the long-term impact of any failure in competition law to remedy market abuses will have greatest impact where large irreversible and risky investments are involved. But by the same token, such investments carry the most risk of being adversely affected by poor regulatory decisions and from the consequential long-term inhibition of innovation[64].

In our view, the task of NRAs should be to undertake an appropriate assessment of the nature of the activity involved in the provision of the services themselves being subject to *ex ante* regulation at the level of network infrastructure in particular. Although the NRF and associated documents do make passing reference to the need to encourage innovation and infrastructure competition, in practice regulators are under pressure to be seen to have an impact on the markets for which they are responsible. Market assessments that conclude 'no action is required' merely increase the pressure on future investigations to be seen to be 'doing something'. In emergent and innovative markets, reliable data are hard to come by and judgements are necessarily qualitative, impressionistic and speculative. In such circumstances, regulators can simply impose their will and it may be difficult to prove 'beyond reasonable doubt' that their judgements are biased.

Implicitly when drawing up market boundaries and designating SMP, what regulators should do is to apply the principles of the HMT at both the aggregate market and the individual firm level. In principle these two exercises should be interlinked by careful examination of the common economic inputs, namely price elasticities, revenue shares and price-cost margins. Firms may well be pricing below short-run cellophane pricing levels – so indicating some latent market power. But this does not (and should not) be regarded as necessarily indicative of market power which the firm can exercise profitably and which justifies regulation. Evidence of nascent market power should be treated cautiously, especially in a dynamic context where deviation from short-run maximising pricing levels is more likely to be indicative of competition 'for the market'.

However, this paper has noted several ways in which bias can enter into market assessments – biases which unsurprisingly always work toward an ***increasing*** imposition of *ex ante* regulatory controls. The long term consequence could be a significant negative impact on the pace of innovation in the telecom sector. This is unfortunate, since all the evidence points to the

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[63] See 'Regulation v Antitrust; Gaps in the new EC regulatory regime for the communications sector', World Internet Law Report, January 2004.

[64] See for example 'New EU Telecom Rules Are Already Out of Date. December 1st, 2003, The Wall Street Journal Europe 'The EU's new regulatory framework for the telecommunications market, largely designed to make it easier for new entrants to compete, came into force last July. It is already looking worryingly out of date. Part of the problem lies in the time it always takes to get member states to introduce the necessary legislation. In a report last month, the Commission complained that only eight member states had incorporated the framework into national law. But the EU has also misjudged the speed at which technology is changing market dynamics. Unless regulators can get ahead of the curve, Europeans may well enjoy lower call charges, but at the expense of investment in a broadband network - one of the very things the framework is meant to encourage.'

conclusion that it is the long term pace of innovation which delivers the major benefits to consumers – and not the short term regulatory controls[65].

[65] See 'Regulation, Innovation and the introduction of new Telecommunication Services', J. Prieger, Review of Economics and Statistics, Vol. 84, Issue 4 - November 2002, MIT Press pp 704-715. Also Lind et al, op. cit.

The New Regulatory Framework aims to suit to convergence trends by covering all electronic communications within its scope and to establish a harmonized regulatory framework for networks and services across the EU. The understanding embodied in the new framework is that although ex ante sector specific regulation has been successful during the transition from monopoly to full competition, it does not suit to the markets with full competition and measures has to be taken to ensure investment and innovation. The new framework is not a move from ex-ante sector specific regulation towards competition law principles, but rather a hybridization of the two. Innovation and the New Regulatory Framework for Electronic Communications in the EU. by Ian Dobbs. + and Paul Richards.Â The thesis of this Paper is that in the context of innovation, the New Regulatory Framework (NRF) has given National Regulatory Authorities (NRAs) potentially conflicting objectives which means that any attempt to align sector regulation with competition law will be extremely difficult. Further, the methodology currently being developed as the basis for ex ante remedies is not likely to be robust, with a consequence that NRAs are quite likely to identify market power where none exists and to impose obligations in which short-term welfare gains may either prove illusory or are likely to be outw... The European Electronic Communications Code includes new protections for customers. 2.6 The EECC is an EU Directive that consolidates, updates and replaces the four Directives that made up the EU regulatory framework for electronic communications. It entered into force on 20 December 2018 and EU Member States have until 21 December 2020 to transpose it into national law. Under the terms of the Withdrawal Agreement, the UK remains under an obligation to implement EU Directives until the end of the transition and implementation period on 31 December 2020. 2.7 Our work has focused on the â€œEnd Use...