Assessment of the Member States measures aimed at fulfilling certain general interest objectives linked to broadcasting, imposed on providers of electronic communications networks and services in the context of the new regulatory framework

Executive Summary

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Executive Summary

The Lisbon European Council in March 2000 set the objective of transforming the EU into a competitive and dynamic knowledge-based economy. Meeting this target requires ongoing efforts to improve the environment in which firms conduct business along with the development of a regulatory climate that is conducive to investment, innovation and entrepreneurship. This means, *inter alia*, creating a level-playing field for companies in all sectors, and especially those operating electronic communications networks and services, as well as fostering healthy competition amongst market operators, irrespective of technology or platform.

The new regulatory framework (NRF) for electronic communications networks and services is a key tool to meet the EU's objective. The objective of the NRF is to define a coherent framework applicable to all transmission infrastructures, irrespective of the types of services they carry (horizontal approach).

At the same time, Member States pursue general interest objectives related to broadcasting, such as universal access for certain programmes, plurality of the media, cultural diversity, freedom of opinion, freedom to receive and disseminate information and ideas, and others. With a view to achieving these objectives, Member States impose certain measures and conditions on market players, including providers of electronic communications networks, services and associated facilities. The present study focuses on the measures imposed on the latter. These are:

- Conditions attached to a general authorisation and to rights of use for radio frequencies,
- Must-carry obligations,
- Obligations requiring access to conditional access services and to associated facilities.

The obligations imposed on providers of electronic communications networks and services and the conditions attached to these obligations may, however, entail costs which vary by operator and by platform. The question which arises therefore is that of the economic impact, in particular the cost, entailed by the conditions attached to the three types of measures under consideration (must-carry, rights of use of radio frequencies and access to CAS). A related question is how one can assess whether the measures implemented by the Member States meet the requirements of the NRF, by being objectively justified, proportionate, transparent and non-discriminatory and, in the case of access to CAS, fair, reasonable and non-discriminatory.

The objectives of this study were, in relation to the NRF, to:

- analyse the implementation of national measures established to fulfil certain general interest objectives linked to broadcasting, concerning conditions attached to a general authorisation and to rights of use for radio frequencies, must-carry obligations and obligations requiring access to conditional access services and to associated facilities;
- describe and assess the economic impact, in particular the cost, of these measures on network operators and related service providers; and,
- recommend a methodology or process that can be used by the European Commission and the Member States to ensure that the measures imposed on electronic communications network and service providers are implemented in a way that is proportionate, transparent and non-discriminatory with respect to the NRF objectives, and in the case of access to CAS, fair, reasonable and non-discriminatory.

Implementation of national measures established to fulfil certain general objectives linked to broadcasting

Authorisations and rights of use of radio frequencies

At present, authorisation procedures vary across Member States. Depending on the Member State, the authorisation requirements are more or less formalised, and sometimes rely on competitive procedures. Conditions are generally attached to the authorisations for broadcasters and/or networks operators. These conditions relate to the provision of certain content, and to population or territorial coverage.

Member States also typically attach conditions to the rights of use of radio frequencies, possibly in the same authorisation. These conditions refer, inter alia, to coverage and positive programming, or to the exclusive use of the right for a given channel or service. Although other types of conditions are sometimes also imposed, the above two are the most frequent and are the focus of this study.

Today, in most Member States the rights of use of radio frequencies for broadcasting purposes are provided directly to the broadcasters. Fees are set to recover the cost of administrating the licence-issuing organisation, but the spectrum itself is – with a few exceptions - not paid for. Other players, in particular in the telecoms' sector, have however had to pay for this resource. With the convergence of networks and the fact that an increasing number of data services are being delivered across broadcast platforms, there have been claims from within the telecommunications sector that broadcasting should no longer have a special status, and that the spectrum it uses should be treated and licensed on the same terms as telecommunications spectrum.

Whereas some claim that free spectrum usage is justified because broadcasters are subject to an obligation – in particular a positive programming obligation – that telecoms operators do not need to meet, the fact is that these content obligations are not homogeneous across users. In fact, some broadcasters use the radio spectrum without being subject to content or coverage obligations other than content obligation universally applicable, e.g in the framework of the Television without frontier Directive.

Another point is that cable operators, who do not use spectrum, have to had to undertake infrastructure and network investments in order to transport the signals. They therefore argue that award of spectrum without remuneration is a form of discrimination, as cable operators have to pay for the development of the infrastructure to carry the signal whereas terrestrial operators obtain the underlying resource at no cost while making a (lower) investment in coverage infrastructure.

Must-carry

At present, must-carry rules seek to ensure that certain radio and television broadcast channels and services are made available to users. Currently, with the exception of Italy, Luxembourg and Greece, all Member States impose « must-carry » obligations for the distribution of radio or television broadcasts to the public. Only must-carry obligations which bear on the network operator, in its capacity of network operator, are analysed in the study.

Must offer obligations refer to the obligation on broadcasters to make their programmes available for distribution on all platforms. To this extent, must-offer obligations relate to

content and therefore falls outside the scope of this study. Such obligations are, in fact, not explicitly referenced in the NRF.

The channels which benefit from must-carry obligation are often, but not exclusively, (national or regional) public service channels. Different situations arise:

- In some countries and/or regions, the channels that benefit from must-carry status are explicitly nominated in the must-carry regime;
- In other countries and/or regions, *the types of channels* qualifying for must-carry are defined in the legislation;
- In still other countries and/or regions, media agencies or local programme councils draw up lists of criteria on the basis of which they define which channels ought to be selected and carried in the local area where they exercise their jurisdiction.

The review of Member States' situations shows that the share of total cable capacity used up by must-carry channels varies widely across Member States. It is generally below 50 percent of capacities, although in some countries it can be much higher.

In several countries, cable operators complain that they have little, if any, free choice in deciding on the programmes they wish to offer to subscribers. This may have an impact on their revenue potential. The designation of must-carry for a particular broadcaster indeed reduces the cable operator's scope to negotiate straight commercial deals with that broadcaster. Also, the capacity reserved for must-carry channels cannot be used for other channels or services.

In practice, cable operators receive revenue from various sources. Depending on the country and the operator concerned, payments between the cable operator and the broadcaster flow in one direction or the other. Several situations arise:

1. The cable operator receives payment from the broadcasters to carry the programmes;
2. The cable operator pays the broadcasters for the right to carry their programmes;
3. The cable operator carries some broadcasters' programmes free of charge;
4. Depending on the market power of the different players and the national regulatory provisions, there may be combinations of the above.

The observed payment flow between cable operators and broadcasters is, in fact, a net flow which takes into account the above plus other elements such as copyright and performers rights. An additional complication arises from the eventual separation that needs to be made between the remuneration for the network operation per se provided by the network operator (the "carriage" service) and other services, such as the packaging of TV services, the collection and distribution of subscription revenue and the provision of conditional access services, offered by the cable operators to the broadcasters, which can also be part of the negotiation.

In summary, there is at present no clear-cut situation or general principle in the EU whereby cable operators are remunerated by the broadcasters for the service of carrying their signals. Whereas the principle is accepted that prices between cable operators and broadcasters ought to be negotiated on commercial basis, the existence of must-carry regulations distorts the negotiations with those broadcasters benefiting from an effective or virtual must-carry status.

Conditional Access

Conditional Access Systems (CAS) allow broadcasters to supply services to those viewers who are entitled/authorised to receive these television services. Conditional access services include encryption services, authorisation services, subscriber management services and certain other technical services.

The Access Directive lays down special provisions applicable to the providers of Conditional Access Systems. In this respect, the Directive takes over the specific regime for access to conditional access systems in Directive 95/47/EC1 on the use of standards for the transmission of television signals. The main provisions of this specific regime are that:

- CAS operators are required to provide services to other broadcasters on “fair, reasonable and non-discriminatory” terms, and to license their intellectual property rights to manufacturers on the same basis.
- Cost-effective transcontrol between CAS providers and other local network operators has to be possible, so that for example cable operators can directly manage CAS services offered to their own customers.

With respect to CAS, the regulatory frameworks in the Member States are also based on the principle that negotiations on access between market players should be undertaken on a commercial basis. The national regulatory frameworks define how access-related disputes between network operators and broadcasting service providers have to be dealt with.

Access to conditional access systems on fair, reasonable and non discriminatory terms, and the interoperability of systems are both important to ensure competition in the broadcasting market.

Because the provisions applicable to the providers of conditional access systems were defined in an earlier Commission Directive (Directive 95/47/EC) and have mainly been folded back into the NRF[2], the related provisions and obligations have been in force for some time in the EU. To a greater or a lesser extent, the national regulatory frameworks in the Member States thus already take account of the obligations and conditions specified in the NRF, in particular with respect to the interoperability of systems and the granting of access to CAS on fair, reasonable and non-discriminatory (FRND) terms. At present, many EU countries require cost-effective trans-control and separation of accounts for conditional access services. But the definition of conditions of access (and of the price paid for access) to CAS is left to commercial negotiations between the different players involved.

Economic impact assessment

Authorisations and rights of use of radio frequencies

Having described the implementation by the Member States of measures established to fulfil the general interest objectives linked to broadcasting that are imposed on providers of electronic communications networks and services, the next step is to describe ***how*** the economic impact, in particular the cost, of these measures on network operators and related service providers ought to be assessed.

1 Directive 95/47/EC of the European Parliament and of the Council of 24 October 1995 on the use of standards for the transmission of television signals (OJ L 281, 23/11/1995, p. 51).

2 Directive 98/84/EC of 20 November 1998 covers the authorisation of conditional access systems and specifies the provisions regarding the free movement of CAS and the free provision of protected services based on such systems.

A single model or framework to assess all three types of measures is not appropriate since each obligation entails different types of costs and has a different economic impact. For each measure, it is important to describe its economic impact on those operators directly affected by it, taking also into account the indirect impact on other players.

Authorisation procedures per se are not very costly; it is the conditions attached to authorisations which entail costs. Coverage is an obligation to provide broadcast services to some predetermined threshold of population. The threshold is typically measured in terms of the percentage of the population to be covered (99.8 percent), but can also be set as an obligation for coverage to extend to communities with a minimum size of, say, 200 people, with smaller communities being responsible for self-provision or being left without a service.

It is clear that, without a coverage obligation, a broadcaster can limit its coverage to that proportion of the population that can be served on a commercially viable basis. The cost of the obligation can be assessed based on the net avoidable costs' approach, similarly to what has been done to assess the cost of universal service in telecoms. Based on this approach, the cost of the obligation is defined as the difference between the additional cost of providing the total coverage required beyond the commercial threshold, and the advertising revenue that could be generated from the additional population covered. Anecdotal evidence from the UK and Sweden indicates that the cost of meeting the coverage obligation in the EU Member States is around a factor of 3 to 4 times higher than that associated with the provision of a commercially viable coverage only (where commercially viable is defined as the level of coverage at which the advertising revenue achievable from additional customers does not cover the marginal cost of coverage).

Another type of condition typically attached to the authorisations and rights of use of radio frequencies is a positive programming obligation for broadcasters. However, broadcasters mostly receive radio frequencies without payment. Assessing whether the cost supported by the broadcaster is "fair" in comparison to the right to use the frequency is outside the scope of this study. One issue of concern, however, is whether the granting without remuneration of the right to use the frequency to a terrestrial broadcaster is not a form of discrimination against operators on other platforms or in other sectors, such as telecoms.

A debate is currently under way as to whether spectrum used for broadcasting purposes should be paid for, or at least whether the actual value of spectrum used for broadcasting purposes should be revealed in order to provide incentives for market operators to use the resource more effectively.

There is, in fact, a difference between valuation of spectrum, and the pricing of it. Valuation entails determining a notional financial value for a given portion of spectrum. There are many means of achieving this, as indicated below. However, valuation alone is only the first stage in the process and purely acts to clarify what might or could be charged for the use of certain spectrum. Whilst providing transparency, valuation does nothing to encourage action amongst spectrum users. Pricing is the translation of valuation into practicality. The price applied to a piece of spectrum may, however, not be directly equivalent to its value. Spectrum pricing per se therefore does not prejudge different means of paying for spectrum for different market operations, for instance through obligations to provide coverage, services, content, as a means of paying for the licence.

It is generally recognised that spectrum pricing is unlikely to be of benefit (i.e. to lead to improvements in spectrum efficiency) in the following circumstances:

1. There is not, and/or is unlikely to be in the foreseeable future, an excess demand for spectrum;
2. It is not feasible to collect licence fees (for example, because the application is not subject to a license or there are a large number of currently unlicensed users);
3. There is no opportunity for users to change their behaviour except by abandoning their service;
4. There are political or policy factors which get in the way of the application of spectrum pricing.

On the face of it, the application of the above criteria to broadcasting indicates that there does **not** seem to be obvious obstacles to the implementation of spectrum pricing for broadcast spectrum. In fact, the main obstacle lies in the difficulty in assessing the “right price”, i.e. the price at which there will be no competitive distortion.

Given the large amount of spectrum occupied by broadcasting, however, there are fears that the cost to broadcasters of a move towards more market-based pricing for spectrum could lead to a position whereby services become commercially unviable, as they were built on the premise that spectrum was cheap, or indeed free. The debate is ongoing, however.

Different methods have been proposed to value spectrum used in broadcasting. Among these are administrative pricing, auctions, secondary trading and valuation based on the revenue generated by the users from using the resource.

Administrative pricing appears to be an appropriate way of sending the right signals to the market, provided that the “right” price can be revealed. In effect, administrative pricing requires that administrations set prices for spectrum that encourage people to hand back unused, hoarded licences and to make use of more spectrally efficient equipment.

Administrative pricing is undertaken in several ways. The usual method to set prices relies on an assessment of the value of the spectrum to the user, where this value is measured as the maximum cost that the user would be willing to pay before switching onto another platform. One has to keep in mind, however, that there is no economic reason why the price of a public good should be defined in such way as to equalise production costs across different technologies. Using administrative prices calculated in this way, i.e. as the level at which costs are equalised across platforms,, may therefore send appropriate signals to markets, but is also a form of “discrimination” against other platforms: indeed, if the price of spectrum is set such that the cost of distributing broadcast programmes through the terrestrial mode remains below or equal to the cost of distributing programmes via, say, cable, this eliminates incentives for terrestrial operators to keep costs down to remain competitive versus cable. Another method as proposed by BIPE in a study for the EU is that of valuation based on **spectrum users’ revenues**[3]… Although the method creates strong incentives for commercial organisations to use spectrum efficiently, (it is indeed, the way in which the Irish regulatory authorities are planning to charge for the use of spectrum for DTT), **it should, however, probably be combined with administrative pricing for public service broadcasters.** Public broadcasters indeed currently use significant swathes of valuable spectrum for a revenue per bandwidth which has no comparison with that of private operators. Hence, spectrum valuation based on spectrum users’ revenues would not provide the right incentives for these users.

[3] Digital Switchover in Broadcasting – A Report by BIPE to the European Commission, Directorate-General Information Society, April 2002.

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Auctions are another alternative, but they make it difficult for operators to correctly assess the value of the resource to them. This assessment is indeed particularly difficult in a market that is rapidly changing, both on the demand and on the supply side. In fact, with spectrum demand expected to fall at the end of the simulcast period, spectrum prices need to be evaluated in a long term perspective – which introduces an element of uncertainty. The experience of telecoms, where operators clearly had difficulties in correctly assessing the true underlying value of spectrum to them (in the context of UMTS licenses), sends a clear warning.

To be complete, one should also mention **secondary trading**, whereby licences may be traded between users without the need for further regulatory or administrative intervention. Little use of secondary trading is yet made in Europe but, an increasing number of administrations are investigating the possibility of its introduction.

Additional research is therefore required to first define an appropriate way (in terms of economic efficiency) to value spectrum used for broadcasting purposes, taking into account data availability and objective measures of willingness to pay or revealed preferences, and in a second stage to define how to go from spectrum valuation to spectrum pricing, i.e. what criteria should be taken into consideration to justify the difference between the actual value of spectrum to users, and the price that users would effectively be required to pay for it. Part of the difference would be the cost of general interest obligations imposed on the users, such as content obligations, the measurement of which was outside the scope of this study, and possibly other considerations such as the need to create appropriate conditions to encourage the shift to digital television, without premature switch-off of analogue services.

Must-carry

Must-carry entails an obligation to:

- Reserve a certain bandwidth
- Free of charge, or against a certain remuneration,
- To certain broadcaster(s) (channels).

Article 31 of the Universal Service Directive allows Member States to impose must-carry obligations subject to certain conditions. Member States have also the ability to determine appropriate remuneration provided there is no discrimination and subject to proportionality and transparency.

The study looks at the economic implications of must-carry obligations and proposes some guidelines that could be adopted where a remuneration of the transport service is provided for, to ensure that the level of the remuneration is set in ways that meet the conditions in the NRF (non-discrimination, proportionality and transparency).

Within the EU, the current must-carry obligations mainly bear on cable network operators. Hence, the analysis of must-carry presented below focuses on operators on this platform.

Cable network operators provide a service (remunerated or not) to broadcasters by carrying their programmes through to end-users. The cable operators' revenue potentially comes from two sources: the sale of subscription packages to end users (households) and a payment by the broadcasters for the transport of their programmes. The fee paid by customers covers authors and performers' rights and may also cover at least a part of the cable operator's costs for transporting channels.

Complication arises from the separation that needs to be made between the remuneration for the network operation per se provided by the network operator (carriage service), and other services offered to the broadcasters by the cable-operator which can also be part of the negotiation.

Competition between platforms at end-user (household) level is strong in most EU countries, so that the price that customers are willing to pay for a given service before switching to another platform is limited. In low-cabled countries, cable operators' business plans are predicated on a need to grow their customer base and market share, which supposes setting competitive prices as compared with other delivery platforms. In highly cabled countries, where the operators' market share is already high, the diversity of programmes on offer is already large, so that the advantages of shifting to digital are not seen by consumers to be worth paying a lot more for additional services – at least in the present situation where the offer of value-added interactive services is still only emerging. Cable operators, who have had to undertake important investments to build their networks, upgrade them to permit two-way communications and diversify the range of services offered, can therefore not price their (traditional broadcasting) services to customers on a strict 'cost plus' basis, independently of other market forces. At the same time, in all EU countries, the migration to digital which would have been for cable operators a step in the direction of their' becoming full service providers, and which would have made it possible for them to recoup some of the investment by increasing revenue from the sale of high-value services, has been slow. In addition, in some Member States the price for access to the cable network is fixed by public authorities at a (generally quite low) level for general interest purposes.

The fact is, however, that there is a value to broadcasters in being able to access a large client basis by using the services of the network operator. Hence, it appears "logical" that broadcasters would pay at least part of the cable operators' costs in that case, as they benefit from the carriage service.

At present, the fee (if any) paid by a broadcaster to the cable operator for the transport of its programmes is determined through bilateral negotiations between players, except in a few countries where some channels can be carried free of charge. Depending on market forces, and irrespective of the price charged to consumers, the cable operator may choose to negotiate different terms with different broadcasters based on the pricing efficiency principle, i.e. by setting prices based upon users' willingness to pay. The question when it comes to must-carry, however, is that the commercial negotiation between the cable operator and the broadcaster benefiting from must-carry status is biased. The regulator may then have to intervene in order to define the price to be paid, or to set a "reasonable" or "guideline" fee for the transport of the channel(s) considered. The question is, how should the fee be set in the case of the must-carry channels, when the commercial negotiation is distorted?

Our approach is articulated in three phases:

- the first stage consists in identifying *the transport cost of a given (or any) channel on the cable; (**What is the cost, and how can it be measured ?)***
- the second stage consists in discussing how this total cost is to be allocated across all beneficiaries of the service, i.e. what is the necessary or recommended structure of financing: whether and how much is to be paid by the end-user, and how much by the broadcasters which benefit from the service? (***Who should pay the cost ?)***
- the third issue is to define whether, within the context of the NRF and under the principles of non-discrimination and proportionality in particular, there is any reason why the remuneration paid by two broadcasters benefiting from a similar service would differ. (***What justification for paying different prices for a similar service ?***)

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On the first issue : What is the cost of transport ?

The assessment of the cost involves:

- Describing the cost structure of the cable operator
- Describing its service offering
- Delimiting the area of activity really concerned by this cost assessment

The first thing to do to assess the cost of transport of "any" channel on the network is to define precisely the "borders" of the activity of the operator which are to be "costed" for the purpose of this analysis. As indicated earlier, cable operators carry out an increasingly complex business, whereby in addition to broadcasting services they can provide internet services and phone communications. The services provided by the cable operators, however, do not all rely on the same network elements or service components. For example, the distribution of analogue channels, the packaging of television services and the distribution of digital programmes rely on certain common cost elements not required to provide internet services or telephone services. Yet, part of the costs linked to the transport of signals from digital channels are not necessary to the transport of analogue services but are shared with internet transportation. Another complication arises from the fact that the cable operators implement networks formed as the result of substantial investments spread out over time, which both reflect the need to adjust the capacity of the network to broadcasting needs but also to the particular strategy of the cable operator.

Considering that the bulk of the costs of cable operators are costs linked to the backbone network, an appropriate method to define the total costs associated with the transport of television signals is one which takes into account all common and joint costs necessary to the provision of the television services, and then allocates these appropriately based on the part of the network capacity which is taken up by the service.

Given data availability constraints and given the fact that the strategy pursued by the cable operator with respect to the development of other services than the transport of television signals has influenced its past investment stream in ways that ought not to impact the transport cost of television signals per se, a bottom-up approach based on (re-)building a network of equivalent capacity to that used up by the provision of broadcasting services with currently available technologies, is preferable to assessing total costs based on historical costs.

On the second issue : Who should pay the cost of transport ?

The second point consists in allocating these costs appropriately among the beneficiaries of the service.

Different methods of cost allocation have been proposed by economists. These are generally grouped in four categories:

1. The Fully Distributed Costs method
2. The Efficient Component Pricing Rule (ECPR) method
3. The Ramsey-Boiteux and Laffont-Tirole methods
4. The Long-run (average) incremental costs (LRIC) method

To choose between these methods, one can assess them based on a set of economic principles which should be respected to ensure that the allocation of costs across users and services creates the right incentives to operators and maximises welfare. These principles are that:

- the method would lead to a market equilibrium close to the economic optimum (the economic optimum is attained where the welfare of all actors concerned is maximised);
- the costs considered must be pertinent;
- the outcome should be non-discriminatory;
- the financial equilibrium of the players should be respected.

The selected method to assess the costs of transporting a given channel on the cable must also be simple, transparent and rely on technical, economic and accounting information that are both **measurable** and **pertinent**. The requirements of simplicity and transparency are important to ensure that the outcome is unambiguous, clear and not easily contestable.

Applied to a sector characterised by rapid developments in technology, the method must also be **able to adapt to changes in technologies or in the organisation of the market**.
Clearly, some of these objectives are potentially conflicting. Given the requirements of the NRF and present market conditions in broadcasting, a well balanced situation where it is not possible to meet all criteria simultaneously would be one representing a second best solution. This is equivalent to maximising welfare under constraint.

Each of the four methods listed above has different advantages and disadvantages, hence ranks differently based on the above criteria. Given the objective pursued, the method that should be privileged is one which:

- Leads to increased economic efficiency, i.e.:
  - Provides incentives for players to move towards the economic optimum
  - Does not create discrimination between players
  - Does not create incentives for cross-subsidisation
- Is based on reliable, readily accessible cost information
- Potentially applies to very different situations of market players across the EU.

Of the cost-allocation methods that have been proposed by economists, the Ramsey-Boiteux method has very attractive theoretical properties, and defines a path towards which the methods that are used in practice to allocate costs should converge. The method consists in adding direct (or specific) costs associated with the provision of the service with a share of the common costs which is determined based on the elasticity of demand. The approach thus carries the potential to lead to a price more consistent to that which would be the outcome of a strictly commercial negotiation in the absence of any bias, given that it takes into account willingness to pay and the value of the service to the different players. The remuneration paid by must-carry channels to cable operators in exchange for the service would thus be consistent with that which would be observed in a competitive market, hence be non-discriminatory vis a vis non-must-carry channels.

There are, however, two main reasons why this method should not be recommended in practice. A first major drawback from a technical point of view is that the costs and elasticities that the model relies upon are difficult to measure (hence contestable) due to data availability problems, and vary significantly across operators. Applied to broadcasting, which takes place in a multi-platform environment where technologies and services are rapidly evolving, the elasticities also potentially vary over time, based on technology and market developments (for example, market entry of a new platform operator reducing the "value" or need for a must-carry channel to be transported by cable).

Another major argument against using this method comes directly from the NRF, in that the channels benefiting from must-carry status have been granted this status precisely because the content that they offer is deemed to be in the general interest. Estimating the demand elasticity of must-carry channels would imply getting into content considerations which are outside the scope of this study and of the NRF, and inconsistent with the very principle of must-carry.

Given the above, the Long Run Incremental Costs (LRIC) methods is therefore considered to be the most appropriate, as it does not entail any valuation of content, can take into account technological progress (in the world of cable) and provides incentives for players to move towards the economic optimum by becoming more efficient.

More specifically, the modelling approach that we recommend is the **bottom up** LRIC approach, which involves calculating the costs of "rebuilding" the network based on the latest available technologies, and deducting the LRICs of this virtual network from the economic data input into this model. Taken in a long term perspective, the incremental cost includes all the operating and fixed costs linked to the provision of the service which are calculated as if one was rebuilding the system, hence also includes the fixed costs that do not vary with production. Introducing the time dimension also allows account to be taken of all the equipment and investment which will be implemented over time to satisfy a supplement in demand without degrading the quality of service.

Contrary to a top-down LRIC method, which requires detailed accounting information and the result of which is likely to be very dependent on the particular history and structure of each cable operator, the use of the bottom-up LRIC method is both less operator-specific or history-specific, and less open to criticism. The guideline price that would result from applying this method also creates incentives for the cable operator to upgrade its network and increase its efficiency to meet the most recent efficiency standards.

On the third issue : What justification for a different treatment ?

Having defined how one can assess the cost of transporting a given channel on the cable and how to allocate this cost across channels, given the capacity used up by the transport of this channel, the next questions are:

- Whether one should impose cost-orientation of prices for all must-carry channels, or whether there are objective reasons why the level of remuneration to be paid by the broadcasters to the cable operators could vary based on certain characteristics or features of the broadcaster? And, if the answer to the second question is yes, how should the price to be paid by must-carry channels (if any) be defined?
- Whether regulators ought to set any guidelines for non must-carry channels, given the absence of a unique "business model" for payment flows between broadcasters and cable operators within the EU?

In other words, the third issue is to define whether there is any justification why different broadcasters would pay different prices for similar services. Indeed, does the granting of a must-carry status justify in any way a change in the allocation of costs across users of the services provided by the cable operator? Are there sound economic reasons why the transport of must-carry programmes should not be remunerated similarly to other programmes? What regulatory tools are necessary, if any?

As indicated above, cable operators provide a service to broadcasters by carrying their programmes over their networks through to end-users. To deliver these services, they incur costs (investment and maintenance costs) which can be, at least in theory, offset from two

sources: subscriptions from end-users and a transport fee from broadcasters. Competition between platforms at end-user (household) level is, however, a reality, so that the fee that customers are willing to pay for a given service before switching on to another platform is limited and may not cover all the cable operators' costs, plus a normal profit margin. Furthermore, within the framework of a national policy to protect or promote culture, the national or local language or pluralism, it is justifiable to keep costs low for those to whom this policy is aimed (the end-users). At the same time, there is a value to broadcasters in being able to access a large client basis by using the services of the network operator (in particular, the cable operator), as this has direct implications on broadcasters' revenues, notably through increased advertising income. It is, therefore, economically justified that (all) broadcasters benefiting from the service provided by the cable operator would pay at least part of the cable operators' costs.

Our recommendation for the pricing of transport services by network operators to broadcasters is **to let market forces play**, but to establish the principle that **all channels** ought to pay **a** fee to the cable-operators for the transport of the programmes. This does not preclude other factors' having a role in the determination of net revenue flows between network operators, possibly even outweighing the payment flow associated with carrying the signal itself. Among these other factors are authors' and performers' rights and the payment of other services provided by one of the players to the other. The level of the transport fee to be paid by broadcasters should thus be determined in the first instance through commercial negotiation.

With respect to the first question above, we explained above why the Ramsey-Boiteux method was not appropriate for must-carry channels, given its complexity, data availability problems and reference to demand elasticities that imply a valuation of content, among other. However, taking into consideration the fact that must-carry channels are a very heterogeneous ensemble of operators who get their revenue from different sources and who draw very different benefits from their status of must-carry, the pricing efficiency principle would call for a pricing system that would take into account in some way the differential benefits posted by the different players from the provision of the service.

A pragmatic way of taking into account these very different intrinsic benefits posted by different must-carry channels in order to reduce distortions between must-carry and non-must-carry channels and protect competition in the market without prejudice of general interest considerations would be to adopt the following approach:

- The remuneration to be paid by must-carry channels to the cable operator in exchange for the provision of the transport service (irrespective of the other factors which also come into the final financial flow between the two players) ought to be set through commercial negotiations first.
- To provide factual information in the negotiation, we recommend the estimation of a guideline price, calculated through the bottom-up LRIC approach as discussed above. This guideline price can be used as a reference point or benchmark during the negotiations between the cable-operator and the broadcaster that benefit from Must-Carry status.
- We, however, also recommend that the regulator makes clear the factors that it will consider acceptable to justify a commercially negotiated price that would differ from the guideline price. The guideline price will thus in effect constitute a "reference" from which market players can diverge in one direction or another, based on market forces and objective factors.

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Depending on market conditions, on the types of channels benefiting from must-carry and on technical factors reflecting the extent to which the actual network differs from that which is taken into consideration in the bottom-up LRIC allocation model, commercially negotiated prices could differ from each other and from the guideline price. Differences between the effective remuneration to be paid by the channels benefiting from must-carry and the theoretical cost-based price could be explained by, among other factors:

- Revenue from advertising received by the broadcaster
- Number of viewers, as compared with number of passed homes
- Indirect revenue received from that customer base, possibly based on audience rate or frequency of use
- Price sensitivity of the customer base to that platform (not to the individual channel), which can be higher or lower based on market conditions, such as ease of access to or availability of alternative platforms.

Even if it is only used as a reference, the calculation of such a cost-based price will raise the awareness on the part of the users of the service as to the investment costs that they are responsible for. In other words, the total costs that they generate for the operator (or an approximation thereof) will be revealed. This increase in price transparency will create incentives for all players to become more efficient, hence move the system closer to the economic optimum.

Conditional access

As per the NRF, access to CAS services has to be provided on fair, reasonable and non-discriminatory (FRND) terms..

The question then becomes how should CAS operators charge their services to broadcasters, knowing that the bulk of their own production are common costs. In fact, several price mechanisms can be envisaged that meet the FRND criteria:

- One of these is to charge a price to broadcasters which varies with the number of channels carried in the retail package.
- Another possible price mechanism consists in charging a price which varies with the retail price of the package of channels. This links the cost of conditional access more directly to the value of the channel to the consumer, since the retail price paid by consumers in a competitive market reflects his willingness to pay for the channel or the bouquet of services.
- A third possible pricing mechanism would be not to base the price on the number of channels in the package or the cost of the package, but rather make it a fixed charge per package of channels.

The first of the above pricing mechanisms carries a potential to limit consumer choice by creating a disincentive to add a channel to a package. The third tends to encourage the development of bouquets, but creates a disadvantage to individual channels. Both approaches carry a potential to reduce consumer welfare by limiting consumer choice, although the system privileging bouquets is, from the consumer's point of view, preferable.

The second pricing option is attractive from a consumer welfare point of view, as the price charged to the broadcasters would be set based on willingness to pay by consumers. This option, however, has the drawback that for FTA channels – which still dominate the audiovisual panorama – the system implies no payment by consumers for the CAS. This is equivalent to putting the entire burden of CAS financing onto the Pay-TV channels, which would be discriminatory, or spreading costs among broadcasters through administrative pricing, whereby prices would be set based on the number of customers, for example, where all customers would be "valued" identically.

Given that many operator-specific conditions impact on the cost structure of CAS providers, and that objective, verifiable and auditable information is difficult to obtain and/or verify, the operators are probably the best placed to define the pricing mechanism that best meets their specific conditions. In line with the principle of pricing efficiency, fair and reasonable access charges for conditional access negotiated on a commercial basis should, however, take account of the "willingness to pay" of the access seeker. One would therefore expect to see a close link between willingness to pay for conditional access services and expected retail revenues from selling subscription services.

Furthermore, for reasons similar to those given in the case of must-carry, all broadcasters – i.e. including public service and/or FTA digital broadcasters should pay a commercial rate for conditional access services, even if this does not necessarily imply that all broadcasters – including FTA broadcasters, should pay the same price

Assessing the measures within the context of the NRF

The last chapter of the report provides recommendations as to how the EC or the Member States' regulatory authorities could assess whether the measures are implemented in a way that is proportionate, transparent and non-discriminatory (and, for CAS, fair, reasonable and non-discriminatory).

The coverage obligation can be assessed by calculating the cost of providing the total coverage required, over and above that which would be commercially viable. The 'objectivity' of the condition within the context of the NRF is justified by the direct link between the condition (coverage) and the general interest pursued (ubiquity of coverage). The requirement that coverage conditions as defined by the Member States be transparent means that the measure must be clearly formulated, in such a way that testing implementation is possible. The two other criteria, proportionality and non discrimination, mean that the coverage obligation as specified by the Member States must be appropriate to achieve the specified general interest objective, limited to the minimum of what is necessary to achieve this objective, and strike a balance between the negative effects for the proper functioning of the single market and the benefits of achieving the ubiquity objective. To the extent that operators are free to choose how the obligation is met technically (by choosing whether to expand their own network or supplementing coverage via another network or from another platform) they can minimise the costs of supplying the service, and the proportionality condition can thus be deemed to be fulfilled.

The other point concerns the granting of spectrum to broadcasting operators without remuneration. The fact that spectrum is granted free of charge to the broadcasters is not a condition imposed on providers of electronic network communications and services with a view to ensuring that certain general interest obligations are met.
In terms of economic efficiency, administrative pricing would be an appropriate way of sending the right signals to the market provided that prices were set correctly. Setting the right price,

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however, supposes: (1) revealing the underlying value of spectrum to users, *and* (2) being able to assess precisely the "costs" - in particular that associated with the coverage and content obligations - that ought to be taken into consideration as these are indirect ways of paying for the resource. Once assessed, the cost linked to the positive programming and coverage obligations would also have to be allocated correctly to the different users in order to set a price for spectrum for these users equal to the value of spectrum minus these costs (which are a shadow price, or an indirect way for these to pay for spectrum). Another difficulty with administrative pricing is to assess the underlying value of spectrum. An objective way of revealing this value would be to assess the maximum cost that each operator would be willing to pay before switching onto another platform. This approach, however, is not appropriate in economic terms. Indeed, there is no economic reason why the price of a public good should be defined in such way as to equalise production costs across different technologies. Using administrative pricing in this way therefore may send appropriate signals to markets, but the level of price chosen is a form of "discrimination" against other platforms: indeed, if the price of spectrum is set such that the cost of distributing broadcast programmes through the terrestrial mode remains lower than, say, via cable, this eliminates incentives for terrestrial operators to keep costs down to remain competitive versus cable.

The debate on the methodology to be preferred and the effective value of spectrum is ongoing. There are fears that inappropriate pricing in the present (difficult) market circumstances would have dramatic economic implications for operators whose business model has been constructed on a basis of 'free' spectrum. With respect to the criteria against which the conditions attached to the rights of use of radio frequencies are to be assessed as per the NRF, one can say that, as long as frequencies are granted on the basis of clearly defined procedures, with precise selection criteria in the case of beauty contests, and as long as there are no restrictions to the types of operators which can compete for these frequencies, then the conditions of transparency and objectivity with respect to the underlying general interest objective can be deemed to be met. Proportionality vis-à-vis operators of other platforms would, however, not be guaranteed.

On must-carry, the NRF states that Member States may impose reasonable must-carry obligation only where this is necessary to meet clearly defined general interest objectives. They have to be proportionate, transparent, and subject to periodical review. Where remuneration is provided for, Member States shall ensure that it is applied in a proportionate and transparent manner.

Letting market prices be set through commercial negotiations between market players meets the criteria set forth in the NRF. Indeed, commercial negotiations are best able to lead to a result which meets the preferences of the two players in the negotiation, and maximises the number of viewers since this is in both players' interest. Nevertheless, commercial negotiations alone are unlikely to lead to a market efficient price in the case of must-carry channels since the existence of must-carry obligations may distort negotiations between the cable-operator and the broadcaster that benefits from must-carry status. Calculating a reference (or guideline) cost-based price and clearly stating the factors that would be deemed acceptable to the regulator to explain differences between effective market prices and the cost-based price would then allow regulators to verify that the prices that the market arrives at in this latter situation are indeed non-discriminatory, transparent and proportionate.

With respect to the must-carry measures themselves and the way they are specified in the Member States' legislation, the NRF states that these should be reasonable, clearly defined and in conformity with Community law. Clearly defined means that Member States' legislation must indicate clearly the criteria used to specify the relevant channels and services which come under the must-carry obligation. Relevant case law of the European Court of Justice has made

clear that economic considerations would not be considered as general interest objectives which could justify exceptions to the freedom to provide services[4]. On the contrary objectives like for instance pluralism, linguistic or cultural diversity have been accepted by the European Court of Justice[5]. The measures must also directly relate to the general interest objectives which it claims to protect and promote and not go beyond what is strictly necessary to achieve those objectives.

Reasonable means that the criteria for defining channels that benefit from must-carry status will be non-discriminatory in terms of nationality or other. In conformity with Community law means that the measure should not provide the channels which are granted must-carry status with an undue level of protection, for example by providing them a greater degree of certainty with respect to revenue flows than is the case for their competitors.

Finally, concerning CAS, on the technical aspects of concern to network operators, discussions in the Member States have led to a consensus that operators ought to have the freedom to adopt the technological solution that makes most sense to them in the light of market conditions.

The FRND requirement, however, also implies that the price to be paid by broadcasters for access to CAS, if any, should be fair, reasonable and non-discriminatory. This is deemed to be a price such that following conditions would be met:

- ✓ The overall pricing framework should reflect prices that would prevail in a competitive market;
- ✓ Prices for particular categories of services (or groups of services) should fall between the incremental cost of providing that service (or group of services) and the stand-alone cost of providing the service (or groups of services) on its own;
- ✓ Comparable service providers are charged comparable prices for comparable services purchased at broadly similar times of negotiation for access; (this is the principle of non-discrimination);
- ✓ Vertically integrated CAS suppliers must not offer services in a way which restricts downstream competition. In particular, they must not supply to their own downstream businesses on terms which are more favourable than those offered to third parties (again, this refers to the non-discrimination principle);
- ✓ The terms of supply of CAS should be consistent with the achievement of public policy objectives relating to universal access to public services and other general interest obligations; and,
- ✓ The terms of supply of conditional access services should maximise benefit to consumers in the long term, in particular by not creating unjustified barriers to entry of competitors.

We recommend that all broadcasters – i.e. including public service and/or FTA digital broadcasters should pay a commercial rate for conditional access services. This rate should be set through commercial negotiations between the different players. We believe that there is **no need for ex ante pricing, hence no need to develop a detailed modelling framework to analyse the FRND condition for prices.**

The discussion related to the pricing of CAS applies, mutatis mutandis, to access conditions to associated facilities such as APIs. Hence, should NRAs decide to extend the FRND regime to associated facilities, this could be done by extending the regime defined for CAS.

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[4] See for instance the judgement of the Court in Case C-211/91, Commission v. Belgium, ECR I, 6757
[5] See for instance the judgement of the Court in Case C-288/89, Mediawet

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