

OECD (2004-07-12), "The Implications of Convergence for Regulation of Electronic Communications", *OECD Digital Economy Papers*, No. 83, OECD Publishing, Paris.
<http://dx.doi.org/10.1787/232632377163>



OECD Digital Economy Papers No. 83

The Implications of Convergence for Regulation of Electronic Communications

OECD

Unclassified

DSTI/ICCP/TISP(2003)5/FINAL



Organisation de Coopération et de Développement Economiques
Organisation for Economic Co-operation and Development

12-Jul-2004

English - Or. English

**DIRECTORATE FOR SCIENCE, TECHNOLOGY AND INDUSTRY
COMMITTEE FOR INFORMATION, COMPUTER AND COMMUNICATIONS POLICY**

Working Party on Telecommunication and Information Services Policies

**THE IMPLICATIONS OF CONVERGENCE FOR REGULATION OF ELECTRONIC
COMMUNICATIONS**

JT00167398

Document complet disponible sur OLIS dans son format d'origine
Complete document available on OLIS in its original format

**DSTI/ICCP/TISP(2003)5/FINAL
Unclassified**

English - Or. English

FOREWORD

This report was presented to the Working Party on Telecommunications and Information Services Policy (TISP) in June 2003 and was declassified by the Committee for Information, Computer and Communications Policy in April 2004.

The report was prepared by Dr. Alan Stretton of the OECD's Directorate for Science, Technology and Industry (on secondment from The Department of Communications, Information Technology and the Arts, Australian Government with the participation of Mr. Dimitri Ypsilanti of the OECD's Directorate for Science, Technology and Industry. It is published on the responsibility of the Secretary-General of the OECD.

Copyright OECD, 2004

Applications for permission to reproduce or translate all or part of this material should be made to:

Head of Publications Service, OECD, 2 rue André-Pascal, 75775 Paris Cedex 16, France.

MAIN POINTS

The emergence of electronic communication markets where the traditional separate distinctions between broadcasting and telecommunications are becoming increasingly blurred calls into question the logic of maintaining existing separate regulatory frameworks for telecommunications and broadcasting. However, the integration of frameworks is not simple, requiring a review of the legal and policy frameworks covering the formerly distinct sectors and the creation of a single policy framework which is coherent across the electronic communications sector. New platforms, in particular broadband Internet, and the services provided on these platforms have already begun to compete with traditional services provided over broadcasting and telecommunications infrastructures. This also provides a challenge to regulation. New developments do not imply that existing regulations need to extend their coverage over other platforms or services. Rather they offer an opportunity to review and lighten existing regulations. Although significant changes have taken place in the broadcasting environment as a result of digitalisation, the emergence of digital television, the increasing impact of Internet audio-visual services, and convergence at the technological and service level, the emphasis in changing frameworks has not been as pronounced as for telecommunications.

Digital technologies and the diffusion of new transmission technologies have increased the number of platforms capable of providing video transmission, and have also altered the traditional characteristics of broadcasting, such as lack of interactivity and the concept of broadcasting as a 'one-to-many service'. These changes have implications for broadcasting regulation, and in particular criteria and methods of licensing market entry. Historically, governments when regulating broadcasting decided on the number of market players, provided the individual licenses to the players and determined their service offerings through a range of license conditions and regulations. Governments have determined the number of broadcast licenses based on both spectrum and social and economic considerations. Scarcity of spectrum has become less of a constraint as a result of digitalisation and compression technologies, while it has also been argued by some that the range of technologies capable of providing 'broadcasting', or 'Webcasting' to households is steadily weakening the argument that terrestrial broadcasting has a significant social impact.

Digitalisation and convergence is:

- Allowing for a substantial increase in market entry through developments in the digital television market. In turn, this is increasing the potential for competition and providing more diverse and innovative services.
- Placing pressure for changes in the existing broadcasting regulatory framework as a result of more competition, and the development of new services in converged markets.
- Bringing into question the tradition of combining two different sets of regulations with quite a different scope: that is, regulations relating to spectrum management and regulations to meet certain social objectives such as developing national identity and cultural diversity.
- Challenging the existing fragmentation in the regulation of broadcasting and telecommunications sectors which is not suitable to ensure a coherent and flexible framework to respond to the convergence of broadcasting and telecommunication. Horizontal co-ordination is especially important in the field of spectrum management and carriage regulation to establish efficient resource management, to avoid market distortion and to improve competition between infrastructures.

TABLE OF CONTENTS

FOREWORD	2
MAIN POINTS	3
THE IMPLICATIONS OF CONVERGENCE FOR REGULATION OF ELECTRONIC COMMUNICATIONS	5
Introduction	5
PART A. BROADCASTING STRUCTURE, REGULATION AND FORCES FOR CHANGE	8
Structural change in broadcasting	8
THE REGULATION OF BROADCASTING: A SNAPSHOT	10
OPPORTUNITIES CREATED BY CONVERGENCE	12
PART B. REGULATORY REFORM: ISSUES FOR DISCUSSION	16
An overview: A model for reform	16
Shift from industry based regulatory structure	18
Regulation of carriage of communication services	20
Regulation of content	20
Implications for the licensing of broadcasters	21
Regulatory institutions	22
Regulation of carriage of communications services	22
The allocation and management of spectrum	26
Convergence and the regulation of content	28
Plurality of voices in the media	28
Cultural diversity and domestic content quotas	35
Public broadcasting	37
Regulatory institutions	38
Competition policy and access regimes	38
Allocation of spectrum USOs and consumer protection	39
Content regulation and the allocation of broadcasting licences	40
Audio-visual services over the Internet	40
NOTES	57

THE IMPLICATIONS OF CONVERGENCE FOR REGULATION OF ELECTRONIC COMMUNICATIONS

Introduction

Convergence in electronic communications is bringing together industries in the communications area which were previously viewed as separate in both a commercial and technological sense, and which have quite distinct regulatory traditions and arrangements. This is leading many governments in OECD countries to review their policies in the communications sector.

Convergence refers to the process by which communications networks and services, which were previously considered separate, are being transformed such that:

- Different network platforms carry a similar range of voice, audiovisual and data transmission services.
- Different consumer appliances receive a similar range of services; and
- New services are being created.

Convergence is made possible by technological changes such as the move from analogue to digital, improvements in network speeds, improvements in compression techniques and storage capacity, and a growing range of wireless applications. Broadband Internet, 3G mobile networks, wireless LANs and digital televisions are the new platforms which are expected to play a key role in convergence. Commercial success and market forces will determine the direction which convergence takes and influence the environment within which policies must operate. However, in turn, policy and regulatory frameworks are likely to play an important role in influencing the extent to which market forces are given sufficient leeway to come into play and the direction convergence takes. Realisation of the full potential of these technologies for economic growth and social improvement may require that changes in policy and regulatory frameworks take place.

The task facing governments is complex. They wish to achieve a wide range of economic, social and cultural objectives. Current policies are varied and are implemented by a number of different agencies. Technological and market changes are reducing the effectiveness of some of these policies and requiring integrated consideration of issues which were previously handled separately. At the same time there is considerable uncertainty as to where technology and commercial forces are leading and the speed with which change will occur. Uncertainty over the speed of change makes it difficult for governments to determine the priority that should be given to reform. At the same time, governments need to be aware that the speed of change may also be a function of existing policy frameworks and how quickly they adapt to take into account new technologies and services.

At a time when the traditional approach to policy needs to be rethought, it is useful to reiterate the key objectives which policies in the communications sector are trying to achieve. Each government states their objectives differently and some set more objectives than others. However, the objectives summarised in Box 1 are common to most OECD countries. An important point to emphasise is the economic, social and

cultural nature of the goals which result from considering telecommunications, broadcasting and the information economy together.

Box 1 Government objectives for policies in the communication sector

Economic objectives

- Promote and sustain competition and choice as a means of minimising price and maximising quality of communications services.
- Encourage investment and innovation.
- Maximise the contribution of the communication sector to economic growth and performance.
- Efficient allocation of spectrum.

Social and cultural objectives

- Affordable access to a universal service specified in terms of telephony, broadcasting and Internet access
- Plurality of voices in the media.
- Cultural diversity and national identity reflected in content.
- Consumer protection and privacy.

While convergence does not necessarily change governments' objectives, it will influence the effectiveness with which existing policies meet those objectives. Governments currently make use of a wide range of policies in the communications sector. Given the diversity of objectives, it is hardly surprising that the policies vary in focus, reach and approach. At a general level, the types of policy and regulation include:

- Competition principles.
- Regulations specific to the telecommunications sector which recognise the dominance of PSTN incumbents and which try to replicate the outcome of a competitive market.
- Restrictions on the size and influence of any one broadcasting or media operator, and in some cases, on the number of broadcasters.
- License conditions which stipulate detailed content obligations and universal service obligations.
- Funding of public broadcasters.
- Subsidisation of the production of domestic content and distribution quotas on broadcasters.

Convergence can alter the effectiveness of these policies in a number of ways. For example, convergence may intensify competition in that it takes place both across delivery networks and between services. It could also help to reduce access bottlenecks by allowing services to be delivered on a number of different platforms. Convergence can create new services and stimulate innovation, both of which might be associated with new entrants. On the other hand, convergence is also associated with the vertical integration of global enterprises. If such firms control gateways, they may attempt to deny access to non-affiliated service providers.

The value of spectrum is also increasing, in some countries quite substantially, as a result of convergence and the new services which can be provided over the air waves. This accentuates the importance of efficient management of spectrum, including a reassessment of the current uses of spectrum. Questions have also been raised as to whether differences in the terms of access to and use of spectrum by different parts of the communications sector may result in unfair competition.

Convergence can also influence the efficacy of policies directed toward cultural objectives. Will policies such as restrictions on cross media ownership, which are directed to achieving plurality of voices in the media, remain viable in the light of global changes in industry structure? Will digitisation of the industry undermine regulations which were developed on the assumption of a small number of national channels, such as domestic content quotas?

Rapid development of the Internet and e-commerce is resulting in significant changes in the type of services available. These services often do not fit easily into existing regulatory definitions and frameworks. If audio-visual content (broadband audio-visual services) is offered through the Internet should this be considered as telecommunications or broadcasting? Should it be regulated as broadcasting? What if the origin of the content is not national? Uncertainty and unnecessarily restrictive policies could inhibit the development of these services and the associated benefits to consumers and the economy.

While technology may be bringing telecommunications, broadcasting and the Internet closer together, the regulatory frameworks within which the industries operate remain not only quite separate but also focussed on different objectives. Over the last decade, the drive to liberalise the telecommunications market has seen the development of regulatory frameworks specifically to manage the transition from monopoly to competition and to stimulate the roll-out of new technologies and services. While most member countries have adopted sector specific legislation and independent regulators, the medium term objective is to move eventually toward greater reliance on general competition law. The major influences underlying the regulation of broadcasting, on the other hand, have been the social and cultural impact of the industry and the shortage of spectrum. Broadcasting remains highly regulated. Licenses are used to control entry and a wide range of technical and content conditions are attached to licenses. In contrast to telecommunications and broadcasting, the Internet has faced little sector specific regulation.

Only six of the 30 member countries (Canada, Italy, Japan, Switzerland, the United Kingdom and the United States) give responsibility for broadcasting and telecommunications to the same regulator (or Ministry in the case of Japan). But, for most of these countries, broadcasting and telecommunications have separate legislation. Among these countries the United Kingdom is finalising legislation to create a single regulator for electronic communication services, OFCOM, subjecting the sector to a single Act, the Communications Bill. Table 1 provides details on broadcasting administration and regulation in OECD countries. A number of non-OECD countries have also moved in this direction. For example, Israel has decided to establish the Israeli National Regulatory Authority by the third quarter of 2004 with responsibility for the telecommunication and broadcasting sectors. The new body will merge the three current regulators (Ministry of Communication, the Cable and Satellite Broadcasting Committee and the Second Authority for Television and Radio).

In the light of the changes flowing from convergence it is appropriate to reassess the effectiveness of existing policies and regulatory frameworks in achieving objectives. This paper will focus particularly on the implications of convergence for the regulation of broadcasting. While a sharp distinction between industries will not always be possible or desirable, the regulatory frameworks of broadcasting and the complex set of objectives which governments are trying to achieve make it an interesting case study.

PART A. BROADCASTING STRUCTURE, REGULATION AND FORCES FOR CHANGE

Structural change in broadcasting

The broadcasting industry has undergone substantial structural change over the last two decades. Until the early 1980s, the industry was relatively homogeneous. Broadcasters transmitted their services over the air waves (terrestrial transmission) and scarcity of spectrum and analogue technology restricted the number of channels. The industry was often defined by its “point to multi-point” format. A broadcaster transmitted its programmes which could be received at the same time by all citizens who had a radio or television set. Services were available “free to air”; viewers and listeners did not have to pay to receive particular channels or programmes. Table 2 indicates how broadcasting is defined in OECD countries. However, licence fees were collected in many countries to fund, or partially fund, public service broadcasters.

In most European countries, licences were restricted to public service broadcasters. In the United States, commercial broadcasting financed by advertising was the norm. Other countries, such as Australia and New Zealand, combined the two approaches. In all cases, broadcasters did not have a direct economic relationship with their viewers or listeners. In the European model, the governing boards of the public broadcasters interpreted the “needs” of viewers and determined the programming which broadcasters should offer. Under the commercial model, broadcasters determined programming on the basis of its ability to attract advertising revenue at minimum cost. Under both approaches the preferences of viewers did not have a direct impact on the type of programming the industry provided.

From a public policy perspective, this was just one of a number of characteristics which differentiated broadcasting from most other industries. The spectrum over which broadcasting was transmitted was both a public resource and scarce. In addition, broadcasting has been perceived as playing a special role in the cultural life of a nation and in developing social cohesion and national identity. As a consequence, broadcasting operated in an environment shaped by a substantial level of government regulation.

During the 1980s and early 1990s the development of cable and satellite delivery networks caused a significant shift in the structure and operations of the industry. During the same period, commercial broadcasters were also licensed for the first time in many European countries. In some cases the new broadcasters were licensed to transmit terrestrially, while in others they relied on the new cable and satellite networks to distribute their services. While these changes were particularly marked in Europe, in the United States substantial growth of the cable industry followed the 1979 repeal of a number of regulations which had restricted its development (*e.g.* limitations on the type of programming which could be siphoned on to cable).

These changes had two important effects. Firstly, the importance of spectrum as a factor limiting the number of operators in the industry (and the number of channels available to viewers) was substantially reduced (even though limitations still exist). Competition developed among terrestrial broadcasters and among broadcasters using different delivery networks. The number of channels available to viewers willing to pay for access to the new delivery networks has increased substantially.

Secondly, in a number of OECD countries, a new business model was introduced into the industry during the 1980s and 1990s as subscription or pay television, providing a new source of revenue to broadcasters. In those countries, for the first time price started to play an allocative role as viewers could choose to purchase a specified package of channels for a set price.

The spread of cable and satellite has resulted in a reduced reliance on terrestrial transmission and as a result the number of households in the OECD relying solely on terrestrial broadcasting has been reduced. In 12 member countries, cable passes less than 50% of homes so that a large percentage of households rely on terrestrial transmission to watch television. In highly cabled countries (Belgium, Luxembourg, the Netherlands, and Switzerland) over 80% of households have cable TV connections.

In most OECD countries there is a mix of public and private terrestrial broadcasters, transmitting from one to eleven channels with a national coverage. Seventeen countries have from three to six national channels. Luxembourg and Mexico do not have a public broadcasting network, while Austria, Denmark, Korea, the Netherlands and Switzerland do not have a commercial, terrestrial broadcaster with a national coverage. However, Denmark, Korea and Switzerland license commercial broadcasters to transmit locally.

A number of different models are used to finance and operate the terrestrial transmission network. In many European countries, the network is owned and operated by the public sector broadcaster or the incumbent telecommunications operator or a special public sector agency. In North America and Japan (and Belgium, Greece and Italy) each broadcaster owns their transmission network. Private broadcasters in Australia also follow this approach. In Australia and the United Kingdom, publicly owned terrestrial networks have been sold in recent years and the Irish Government has announced a similar policy.

Satellite and cable have substantially increased the choice, number of channels and range of services available to viewers. In addition to subscription packages, public service broadcasters in a majority of member countries provide additional channels that can only be accessed via satellite or cable. Private domestic channels, funded by advertising, are also only available on satellite and cable where the spectrum constraints are less pressing. Further, satellite allows channels which are intended to be viewed in one country to be compiled and uplifted in another country. For example, TV3 in Denmark is produced in, and transmitted from, the United Kingdom.

THE REGULATION OF BROADCASTING: A SNAPSHOT

Whereas the regulation of telecommunications has been driven primarily by the liberalisation of the market (managing the transition from monopoly to competition), a major influence underlying the regulation of broadcasting has been the social and cultural impact of the industry. Broadcasting, especially television, is often viewed as the most pervasive form of media. It can influence the manner in which we receive the information that we need for entertainment, to keep informed and information to fulfil our obligations as citizens. Broadcasting also offers the most accessible cultural experience for the bulk of the population. Many countries have policies to restrict the ownership of broadcasting companies and to set standards on broadcasting content.

Prior to the mid 1980s, when delivery of broadcasting television services was largely restricted to analogue, terrestrial transmission, scarcity of spectrum was also a significant factor. However, the large variation in the number of terrestrial broadcasters across OECD countries (*e.g.* 10 broadcasters with national coverage in Germany, 11 in Italy, 5 in Australia and 2 in Canada) suggests that this is not as decisive a factor as is often argued. A wide range of government concerns relating to content has also been influential in determining the nature of regulation.

While there are important variations among countries, the following features are characteristic of broadcasting regulation in the OECD region.

- The level of regulation varies according to the delivery platform. Free to air or terrestrial broadcasters are more tightly regulated, reflecting their use of a public resource, as well as their more pervasive influence in shaping community views.
- Licenses are often required for both spectrum use and the provision of a broadcasting service.
- Licenses are used to control entry and a wide range of technical and content conditions are attached to licenses.
- Public service broadcasters are funded as a contribution to plurality, programme diversity and national identity.
- While most countries have policies directed at achieving cultural objectives, including supporting domestic programming, some countries have a wider range of content obligations. These relate to diversity and quality of programming, the protection of children, upholding community standards in taste and decency and restrictions on advertising to meet national health and consumer protection objectives.
- The wide range of objectives and fragmented policies can result in regulations which are not always consistent (*e.g.* restrictions on the number of broadcasters reduce plurality).

An indication of the general types of policies which form part of the regulation of free to air broadcasters in OECD countries is provided by the overview in Box 2.

Box 2. General types of policies	
OBJECTIVE	TYPES OF POLICIES AND MEASURES
Plurality of voices in the media	<ul style="list-style-type: none"> • Restrictions on cross media and cross sector ownership • Restrictions on the reach of individual broadcasters, either in terms of number of channels or audience reach • Restrictions on line of business • Funding of public service broadcasting
Cultural diversity and national identity	<ul style="list-style-type: none"> • Broadcast quotas for programming produced domestically • Financial and other assistance to encourage domestic content production • Restrictions on foreign ownership of broadcasters • Funding of public service broadcasting
Programme diversity	<ul style="list-style-type: none"> • Quotas for particular types of programming, such as news and current affairs, programmes with high production values, educational programmes, children's programmes • Obligation to provide certain programming deemed to be of national significance on free to air television • Funding of public service broadcasting • Must-carry rules for cable and satellite operators
Community standards	<ul style="list-style-type: none"> • Content prohibitions and restrictions relating to offensiveness, taste and decency • Requirements relating to accuracy and impartiality in news and current affairs programmes
Restriction on advertising	<ul style="list-style-type: none"> • Restrictions on the amount of advertising • Prohibition of advertisements for certain goods (e.g. tobacco products) • Restrictions on advertising during programmes intended for young children
Universal coverage of a free, basic broadcasting service	<ul style="list-style-type: none"> • Licence conditions stipulate coverage obligations
Efficient allocation of scarce spectrum	<ul style="list-style-type: none"> • Restrictions on the number of terrestrial broadcasters

Source: OECD.

OPPORTUNITIES CREATED BY CONVERGENCE

The introduction of digital technology and the commercial pressures for convergence are creating pressures for change in the broadcasting industry. These pressures are also leading to opportunities to provide consumers with a wider range of information and content than available at present from analogue TV in most countries.¹ Compared to the analogue industry model outlined earlier, the digital business model involves:

- Digital, programmable network technologies which support multiple applications.
- Digital, programmable terminal equipment which supports multiple applications.
- Vertical structural separation between the delivery network and the end service which the user sees.
- Greater customisation of services to meet the specific needs and requests of users.
- A system for managing rights to content, which balances the interests of consumers and producers.

The digital impact on broadcasting is both direct, through the introduction of digital television and radio, and indirect, through the development of new services such as the Internet which have the potential to compete with broadcasting. In addition, the clear distinction between broadcasting and other communications industries is blurring. While customers still see a distinctive broadcasting service, enterprises are starting to operate across the previously separate industries and delivery networks are providing a range of services, rather than just one.

Digital television (DTV) offers the potential to overcome some of the limitations of analogue television and to assist governments to achieve broadcasting objectives. It also offers the promise of improved services for consumers.

Spectrum shortage will be much less of a constraint on the number of broadcasters. The more intensive use of spectrum, which digital transmission allows, means that more channels can be transmitted in the same frequency band. However, there will still remain some relative scarcity. For example, in conjunction with the introduction of digital TV, Japan aims at diffusing high definition TV to provide terrestrial TV of a higher quality and resolution. This would require the same width of spectrum as existing analogue TV. Digital technology also increases the capacity of cable and satellite delivery networks, reducing the transmission costs of carrying additional broadcasting services. Both of these factors should allow an increase in the number of broadcasting services. If incumbents do not own the new services, this in turn will increase the plurality of voices in the media, one of the most important cultural objectives of broadcasting.

Digital television also offers innovation in services to viewers. High definition television improves the quality of the viewing experience. An increase in the number of channels available to each broadcaster may increase the diversity of programming. Pay-per-view services and the capacity of viewers to purchase channels on an individual basis rather than as a package give a greater role to consumer preference and price in determining which services broadcasters provide. Interactive television promises a range of new services available from the television set, including Internet access, although it is not yet clear which of

these services will prove to be commercially viable. Consumers are also likely to benefit from the digital packaging of communications services which will allow households to purchase a basket of television, Internet and telephony services for one tariff (so-called triple play). Increased competition in the delivery of these services across delivery networks should lower prices and produce a greater variety of packages from which households can choose.

While digital technology and convergence offer many opportunities for improved outcomes in terms of both economic and cultural objectives, there will be new challenges. For reasons outlined below, the current industry-based regulatory framework may no longer be optimum. Major regulatory reform requires considerable effort and commitment, in part because it challenges those who benefit from existing arrangements.

Convergence could also have implications for the effectiveness of policies directed at regulating content. A number of examples will give an indication of the type of challenges policy makers will face.

- Most regulations concerning cultural diversity and local content quotas were designed for analogue terrestrial broadcasting where there were generally a small number of domestic channels. Will these measures remain effective in a digital, multichannel environment in which many channels have an international focus? Do governments want the objectives of cultural diversity to extend to the new forms of content which are emerging? If so, will existing measures be effective?
- Will an increase in the number of channels be sufficient to achieve an increase in programme diversity and allow a relaxation of regulations directed toward this end?
- How will existing regulations governing market entry operate in a digital environment? Will an increase in the number and variety of media formats reduce the need for regulations aimed at ensuring plurality of voices in the media?

Cultural and social dimensions of broadcasting remain important. But digital technology raises questions about whether current policies and regulations remain the most effective means of achieving social and cultural objectives.

The changing nature and orientation of communications enterprises will also create new challenges for regulators. Enterprises across the converging communications sector are merging. Patterns include:

- Internet enterprises seeking mergers with enterprises with delivery networks and enterprises with libraries of traditional audiovisual content.
- Broadcasters merging with other broadcasters (especially in Europe) apparently to increase their size, benefit from economies of scale and to better withstand competition from large, vertically integrated, US enterprises.
- Telecommunications companies moving into content and broadcasting areas.
- Broadcasters are moving into Internet, although tentatively.
- Internet service providers providing audio-visual content.

This trend toward horizontal and vertically integrated enterprises can be explained by the search for economies of scope and scale, reduced transaction costs and stimulation of innovation in the production of new services. The concern facing governments is whether such integration will result in an unacceptable degree of control over gateway facilities. Some argue that the appropriate approach to vertical integration is to require complete structural separation. Others argue that the focus should be on the abuse of a dominant position rather than dominance, *per se*. International vertically integrated enterprises could also reduce the effectiveness of regulations governing market entry into broadcasting such as restrictions on foreign ownership and cross-media ownership.

The difficulties facing policy makers are compounded by the uncertainty surrounding the outcomes of convergence and the speed with which it is occurring. For example, in some countries the ongoing digital television transition poses many unique logistical and technological challenges. The lack of digital broadcast copy protection may be an impediment to the transition's progress. Without adequate protection, digital media, unlike its analogue counterpart, is susceptible to piracy because an unlimited number of high quality copies can be made and distributed in violation of copyright laws. In the absence of a copy protection scheme for digital broadcast television, content providers have asserted that they will not permit high quality programming to be broadcast digitally. Without such programming, consumers may be reluctant to invest in digital television receivers and equipment.

The extent to which the Internet and television will be direct substitutes (from the perspective of the viewer) is unclear. Currently, the core characteristics of the services they can provide differ in terms of the level of passivity or interactivity and the level of choice or control by the viewer. It is uncertain whether technological and commercial developments will see:

- TV programmes being shown over broadband Internet and viewed indifferently on computer or TV screens which are capable of accessing Internet.
- A new form of content developed specifically for the Internet and which will match the entertainment value of television; or
- The Internet remaining primarily a source of information rather than entertainment.

Examples exist of essentially the same content being delivered in different formats and being received on different appliances in the home, such as radio streaming over the Internet and increasingly access to video programming including television. In addition, new services have developed which have some of the characteristics of broadcasting, but not all (*e.g.* video on demand). There is considerable uncertainty as to how these types of services fit within existing regulations.

Most member countries have not specifically addressed the regulatory approach to Internet broadcasting or "Webcasting" (services provided over the Internet which have some characteristics of broadcasting, such as audio and video streaming), in part because, as yet, it is not seen as a significant problem. Countries which have developed a position have come to quite different conclusions (Table 3). Denmark, the Netherlands and Japan treat Webcasting as a telecommunications service; Norway and Sweden as cable broadcasting. The Canadian Radio-Television and Telecommunications Commission has issued an order exempting such undertakings from regulation under the *Broadcasting Act*. In the United States, the FCC does not regulate services delivered by the Internet or the World Wide Web.

The regulatory treatment of video on demand is also divided. In Canada, New Zealand and the United Kingdom it would be regarded as broadcasting. In Finland, Japan, Portugal and Sweden, it would not.

The emergence of these new services challenges existing broadcasting policy and regulation. Content regulation becomes more difficult to implement. A situation could develop where the same or similar content faces different regulatory obligations depending on how it is delivered. Is this acceptable, given the different levels of control that the viewer can exercise? Some have argued that different media should be regulated differently, even if they deliver the same or similar content, because there may be different social impacts depending on the delivery mechanism.

There is also uncertainty surrounding the speed with which convergence will occur. The pace of introduction of digital television, for example, varies considerably across member countries.

The take-up of DTV by consumers is still in relative infancy. The US National Association of Broadcasters reports that DTV signals are now being transmitted in 186 markets that include 97.44% of US TV households, but it is not yet clear when the goal of ceasing analogue TV broadcast in the United States will be reached. This goal will be reached on 31 December 2006 or when 85% of households in any given market have DTV reception capacity, whichever is later. There is considerable variation among European countries in the move to digital. In the United Kingdom household penetration is just over 40% (the analogue switch-off target is 2010). A number of member countries do not yet have digital services.

Satellite direct to home broadcasts lead the transition to digital in most member countries. Digital DBS was first available in the United States in 1994, in Japan in 1996 and in France (the first European country) in 1996. The pioneering role played by satellite reflects the lower level of investment required to upgrade the network, compared to cable and terrestrial transmission. In countries such as France, Japan, the United Kingdom and the United States, digital satellite providers were able to adapt their analogue business model based on subscription television to the digital environment. The rental of digital set top boxes, sometimes at subsidised rates, minimised the initial cost to viewers of converting to digital. Analogue subscribers were encouraged to migrate by monthly subscription fees close to analogue rates and by additional services and aggressive marketing. In other countries such as Canada, Italy and Spain, the introduction of satellite services coincided with the introduction of digital television. In Italy and Spain, the introduction of digital DBS was the first time that multichannel services were widely available. In Canada, on the other hand, the new satellite operators were in direct competition with a well established cable network.

Cable is the main means of receiving DTV in Belgium, Denmark, Germany and Sweden. The level of investment required for a digital upgrade of cable networks is a factor in explaining the relatively slow growth in digital subscribers on cable, even in those countries which have relied heavily on cable for the delivery of analogue television.

PART B. REGULATORY REFORM: ISSUES FOR DISCUSSION

An overview: A model for reform

This part of the paper discusses the type of regulatory reform which may be necessary to meet the challenges created by convergence and hence ensure that the opportunities are realised. The issues are complex and there are many options open to governments. In such an environment it can be useful to have a number of specific proposals against which to test ideas and options. For this purpose, an option for reform is summarised below. In this section the various components of the proposal are stated in summary form to give an overview of the type of regulatory reform which may be necessary. The model is derived from the objectives summarised in the Introduction to the paper and an assessment of the impact of convergence on policies designed to achieve these objectives. The arguments which underpin the proposal are discussed in the following sections. The model contains elements from various proposals for reform that have been put forward by governments and regulators and by discussions in the literature.

The proposal involves:

- A regulatory framework structured along **activity lines** as opposed to the existing **vertical** framework structured around industries
 - This is sometimes referred to as a horizontal structure in which carriage and content have separate regulatory arrangements. However, it would be unwise to consider the two regimes as being completely independent. Decisions on some carriage matters can have an effect on cultural and social objectives and vice versa.
- A common regulatory regime for the carriage of all electronic communications services.
- Separate entry procedures for the carriage of a communication service and provision of a broadcasting (content) service
 - The basis for entry procedures could be different.
 - Entry procedures (in this case licensing), conditions associated with content and restrictions on the ownership of broadcasters should only apply to the licence for the provision of a broadcasting service.
- Incentives for the more efficient use of spectrum, such as
 - Licence fees for the terrestrial transmission of broadcasting based on the value of spectrum used.
 - Broadcasters able to hand back unwanted spectrum, or the development of a secondary market in spectrum could be encouraged.
 - Any restrictions on the use of spectrum should be in the form of minimum levels of broadcasting services which must be provided.
 - The provision of a basic broadcasting service to uneconomic areas should be managed as a Universal Service Obligation (USO) and provided in the most efficient means possible.
- The use of competition principles and sector-specific regulations to prevent anti-competitive behaviour and ensure appropriate access to infrastructure networks, conditional access systems and content
 - Move to broader definitions of markets and to the use of 'dominance' as the threshold which triggers tighter regulatory scrutiny.
 - Anti-trust scrutiny of vertically integrated enterprises which control both delivery networks and premium content.

- An *ex ante* presumption that gatekeepers cannot unreasonably deny or delay access to delivery networks, operating systems such as application program interfaces (APIs)² and premium content.
- Plurality of voice objective achieved by using the additional capacity provided by digital to increase the number of broadcasters and by reliance on competition policy.
 - Legislation to recognise explicitly the potential for tension in using competition policy to achieve both economic and social objectives and give clear guidance on the importance of the plurality of voice objective.
 - Approval of mergers in the media sector to require approval under the usual economic assessments.
- Replacement of domestic content transmission quotas with equivalent subsidies for the production of domestic programmes and audiovisual services as a means of achieving the objective of cultural diversity.
- Continued financial support for public broadcasting as a means of contributing to the objectives of plurality and diversity.
- Institutional arrangements structured so that a single regulatory body deals with conditions of access and use of electronic communication networks.

The pressures created by convergence led the European Commission and the United Kingdom to put forward proposals in 2000 for significant reform of their regulatory arrangements in the communications sector. In both cases this has followed extensive consultations with industry and the community. The model outlined above has much in common with these initiatives.

In the UK approach a common regulator (OFCOM) has been established with responsibility for both carriage and content of the whole communication sector. OFCOM will regulate content standards by developing codes of practice based on statutory objectives and principles. Future reviews will be conducted of approaches to spectrum management and cross media ownership restrictions.

A summary of the OFCOM proposals is contained in Box 4.

Reform of the communications regulatory arrangements is usually considered under three broad headings: the shift from an industry based framework; a common regulatory framework for the carriage of communications services; and the regulation of content. The rest of the paper is structured around these three headings.

Box 4. Summary of OFCOM structure and responsibilities	
ISSUE	PROPOSALS FOR CHANGE
Organisational framework	<ul style="list-style-type: none"> • Single, independent regulator for the communications sector (OFCOM) unifying five separate regulatory bodies • OFCOM will have responsibility for all communication networks and services, including the management of radio spectrum, telecommunications, the licensing of broadcasters, a range of content matters and consumer protection
Competition and access	<ul style="list-style-type: none"> • OFCOM to work concurrently with OFT in applying Competition Act powers to the communications sector • OFCOM will also have <i>ex ante</i> sector specific powers, but these will be limited to matters relating to consumer protection, access, interconnection and dominance • OFCOM will be required to optimise the use of spectrum by establishing and regulating spectrum trading • Competition powers extended to Electronic Programme Guides (EPGs)
Universal access	<ul style="list-style-type: none"> • Public service broadcasting channels will have universal coverage, free of charge and be given due prominence on EPGs • Telephone services used by the majority will be made available to everybody on reasonable request, at an affordable price
Diversity and plurality	<ul style="list-style-type: none"> • Remove limitations on size of individual broadcasters • Future review of cross media ownership rules • Abolish all foreign ownership restrictions – media mergers and acquisitions rules to be used to prevent undue concentration
Quality of broadcasting	<ul style="list-style-type: none"> • Public service broadcasting channels will face a higher level of regulation than other content services • A three-tier regulation system to be introduced with the basic tier applying to all content services. The second and third tiers will require greater accountability from public service broadcasting channels
Content standards	<ul style="list-style-type: none"> • OFCOM will be responsible for maintaining content standards in all electronic media against stipulated objectives and principles • OFCOM to develop statutory codes for the most pervasive broadcasting services and co-regulatory approaches for the Internet • OFCOM to promote rating and filtering systems to help Internet users control the content they and their children will see

Shift from industry based regulatory structure

The current regulation of telecommunications and broadcasting in the OECD region is structured along vertical or industry lines. Telecommunications is regulated separately from broadcasting and broadcasting regulation covers both carriage and content issues. The regulatory framework is based around delivery platforms. This characteristic developed in an analogue environment where delivery platforms are service specific.

Digital technology allows a transmission network (terrestrial, cable or satellite) to deliver a larger number of broadcasting channels or services within the same bandwidth and/or to deliver a wider range of communication services. In many member countries digital network operators are already offering packages of broadcasting, telephony, high speed Internet access and new digital services. As more networks are upgraded to digital, the delivery of services in this way is likely to become more common. In countries where the cable network has been upgraded to digital, cable operators offer not only a large increase in the number of channels but also high speed Internet access, and in some cases offer their own ISP. In a number of OECD countries cable networks also provide a telephony service. Some companies are also moving into the compilation of content packages so that they no longer see their role primarily as carriers of other companies' services. Given the high level of investment required, upgrading cable networks will be more financially viable if network operators are able to achieve economies of scale and scope and are able to use the greater capacity of digital networks to provide higher value added services.

The development of digital technologies raises a number of challenges for policy and regulation. For example, network owners can face a wide and conflicting array of regulations. The owner of a network could face different regulations for the delivery of telephony, broadcasting and the Internet, despite the fact that all are being delivered by the same network. The same service delivered over different networks could face different regulations. These developments undermine the principle of consistency. Without consistency, regulation can bias outcomes in favour of one type of technology or service or service provider. Some countries argue that because different media have a different social impact there continues to be a need for different regulatory frameworks.

Another consequence of the move to digital delivery networks is that the operator of the carriage network may be delivering the services of a number of broadcasters. Regulators may not always be able to assume that the operator of the delivery platform is in a position to influence the type of content provided by individual broadcasters. This contrasts with the situation in analogue terrestrial broadcasting where the transmission network was often owned by the broadcaster or used exclusively by the broadcaster. In a digital environment, the regulation of content may need to be directed specifically at the content provider.

A number of commentators have argued that convergence requires a shift from a vertical to a horizontal regulatory structure. The new regulatory framework by the European Commission adopts this approach. Instead of regulating the telecommunications industry or the broadcasting industry, a horizontal approach would be structured around the regulation of similar activities. It is usually argued that separate regulatory frameworks could be developed for carriage and content.

A horizontal approach to regulation has a number of advantages. It is more likely to ensure that regulations are technologically neutral and that they impact on similar services in a consistent manner. From both a technological and commercial perspective, it remains unclear whether cable, satellite, terrestrial or DSL will be most effective at transmitting new broadband services; or whether particular transmission networks will be effective at delivering a particular package of services. It is also uncertain which new services will become commercially viable. In this environment of rapid innovation and change, it is important that the regulatory arrangements do not favour one set of outcomes over another. Under current arrangements, similar activities could face different regulations depending on how they are delivered.

A horizontal regulatory structure also allows changes to the regulation of carriage and content to occur at a different pace. The uncertainty surrounding convergence appears to be greater on the content side. While technology has promised many new audiovisual services, none has yet captured the imagination of consumers to the extent necessary to create a major commercial force for change. Given the sensitivity attached to content regulation, governments may want a clearer idea of the direction and extent of change before introducing significant reform. On the other hand, the pace of introducing digital delivery of communications services is quickening.

However, one should be cautious as regards the concept of a horizontal regulatory framework since this could be interpreted to imply that the regulation of carriage and content can be treated as two independent issues. As argued in the sections which follow, this will not always be the case. There are important links between the two which need to be considered in designing the regulatory framework. While convergence is likely to necessitate a shift from an industry-based structure, the new approach should focus on structuring regulation around like activities or functions. The outcome of reform should not be to replace a rigid vertical structure with a rigid horizontal framework.

Regulation of carriage of communication services

A common regulatory framework would apply to the carriage or transmission of all electronic communications services, including telecommunications networks, satellite networks, cable TV networks, and terrestrial transmission networks as well as associated services such as conditional access systems. The main objective of this framework would be to promote and sustain competition. Competition, in most cases, is viewed as an important means of improving price and quality of services for consumers and maximising the impact of the sector on the rest of the economy. The regulatory approach could be characterised as taking the next steps in the liberalisation of telecommunications and applying it to all electronic communications infrastructure. As similar communications services are increasingly being delivered across all infrastructure networks, generally the same regulations would apply to all networks. However, some countries believe that the social impact of different transmission platforms can differ (*e.g.* terrestrial broadcasting versus cable) so that this should be reflected in differences in regulatory frameworks.

An integrated framework for the regulation of carriage will need to take account of historical monopolies in the sector, ongoing economies of scale and scope, and the ability of vertically integrated enterprises to abuse their control of key gateways. The new framework would incorporate policies designed to:

- Prevent anti-competitive behaviour by those with market power as a result of historical monopolies, vertical integration or control of key gateways.
- Ensure appropriate access to infrastructure controlled by dominant enterprises through interconnectivity, unbundling of local loops, and access to conditional access systems.
- Ensure that consumers have access to basic services which might not be provided by the market (universal service obligations).
- Protect consumers through price controls, tariff comparisons, etc.
- Allocate scarce public resources such as spectrum in a way which encourages efficient use to achieve socially desirable outcomes.

Regulation of content

In some countries social and cultural objectives are likely to be the main forces driving the design of content regulation and it will be important to assess whether convergence will require a change in policies to achieve these objectives. The wide range of content services and their differing impacts on objectives suggest that common regulations applying to all services may not be optimum. The degree of influence of free to air radio and television may justify a more intrusive regulatory approach than is necessary for a pay per view, point to point service. This approach has the advantage of recognising that detailed regulation may still be deemed necessary for some services without allowing unnecessary regulation to dampen innovation and the development of new services. The level of regulation applied to a particular service could be influenced by the level of interactivity and the degree of control or choice which can be exercised by the viewer, as well as the nature of the commercial transaction.

In other countries, economic objectives are an important force affecting content, especially because of the challenges arising from digitalisation. For example, consumers will invest in digital television only when they see content is significantly better than what they have available in analogue today – that could be high-definition, multi-casting, interactive, or a combination of all three. However, content providers assert

they may limit distribution of some content over broadcast digital television if a critical mass of digital television receivers and fast broadband connections permits widespread, unauthorised redistribution of content.

The framework for content regulation will vary significantly among member countries but may cover a range of issues such as:

- Plurality of voice in the media and associated policies concerning cross media ownership, cross sector ownership, restrictions on the size of individual broadcasters.
- Cultural diversity, local content quotas and support for the local production of content.
- Programming standards associated with accuracy and impartiality in the reporting of news and current affairs.
- An intellectual property rights regime which balances and manages users' rights and producers' rights for content.
- Programming standards associated with community attitudes towards decency, censorship and freedom of speech.
- Restrictions on the type and amount of advertising.
- The role and means of supporting public broadcasting.

Implications for the licensing of broadcasters

A shift from an industry-based structure will also require a different approach to the licensing of operators. In most countries the assignment of spectrum to a particular operator is determined by the awarding of a broadcasting service licence, which automatically entitles the licensee to use of a particular frequency or channel. Broadcasting service licences are awarded following a qualification and selection process. Applicants must demonstrate that they meet any media ownership restrictions designed to meet plurality objectives before being eligible for selection. In a number of OECD countries spectrum for telecommunication services is now allocated through an auction mechanism. A number of countries still maintain a selection procedure using a 'beauty contest' against designated social and cultural objectives. This process is usually managed by a different agency from spectrum planning. New Zealand is an exception to this general approach. Spectrum is allocated by auction and successful bidders can decide how to use the spectrum. They are also able to resell the spectrum.

Under a horizontal framework, separate licences would be required for operators of carriage services and content services. A broadcaster who operates a transmission network and provides his own content would require two licences. The two types of licence would be allocated separately and possibly using different approaches or methodologies. 'Must carry' requirements could be attached to carriage licences if governments were concerned to ensure that particular broadcasting services were available on certain networks (and where necessary that spectrum was available). Carriage operators would have a licence to deliver communications services and licences would be allocated in a similar manner to licences to operate telecommunications networks. The shift in many countries toward the use of general authorisations (licences) for telecommunication services does not mean, of course, that this procedure would then have to apply for all broadcasting-type services. Where the delivery mechanism uses scarce public resources such as spectrum then specific authorisations would still be required. The allocation of broadcasting services (content) licences could continue to involve a range of economic and non-economic criteria. While digital

technology will provide capacity for the licensing of more broadcasters, some governments may wish to remain closely involved in the awarding of such licences. Conditions concerning restrictions on content would only be attached to a licence for the provision of a broadcasting service. Some countries argue that separation of the carriage of a communication service and the provision of broadcasting (content) service may raise concerns in that emergency and other essential broadcasting services may not operate smoothly in emergencies.

Regulatory institutions

There has been considerable discussion about the implications of a move from an industry-based regulatory framework for the number and roles of regulatory authorities. For example, in the lead up to the UK White Paper, there was much debate as to whether there should be one regulator for all of the communications sector or two, one for carriage and a separate one for content. This issue is examined later in the paper when the nature and extent of regulatory reform is clearer.

Regulation of carriage of communications services

As mentioned earlier, a common framework for the regulation of carriage of all communication services will focus on ensuring competitive behaviour, the efficient allocation of scarce public resources such as spectrum, the provision of universal service obligations and the protection of consumers.

In many member countries, telecommunications and broadcasting networks face quite different regulatory approaches to achieving competitive outcomes. For example, under current European Community legislation, telecommunications operators with dominance in the market are required to grant all reasonable requests for access to their networks. However, this requirement does not apply to other communications infrastructure. For the reasons discussed in previous sections, there is a strong case for a common approach on competition policy and access applying to the delivery of all communications services. In this paper the term ‘competition policy’ refers to the application of both general competition law and *ex ante* sector-specific regulations intended to replicate the outcome of a competitive market.

The structure of the telecommunications industry and the need to manage the transition from monopoly to competition has resulted in most member countries adopting, *ex ante*, sector-specific regulations to complement the *ex post* application of competition law. A regulator dedicated to the telecommunications industry usually administers these regulations. The arguments in favour of *ex ante* regulation have been:

- The monopoly position of the incumbent telecommunications operators would allow them to thwart the transition to competition unless clear limitations and access requirements were placed on them from the very beginning of the process.
- The *ex ante* regulations provided greater certainty for both incumbents and new entrants.
- Generally, competition law cannot be invoked until after the incumbent has engaged in anti-competitive behaviour, by which time the damage suffered by the new entrant could be sufficient to force its withdrawal from the market.
- A sector specific regulator has the technical and economic knowledge to provide quicker resolution of disputes.

How will convergence affect the application of this general approach to ensuring competitive behaviour in the communications sector as a whole? This is a difficult question for the broadcasting industry which has restrictions on entry and has meant that the broadcasting industry has been protected from open competition. The discussion below focuses on the definition of the market, the assessment of market power and the implications of increased vertical integration.

The definition of the market is a crucial factor in the application of competition policy. The same enterprise could be in a dominant position or in a competitive environment depending on how broadly one defines the market within which they operate. In the context of competition policy economists have tended to define markets narrowly, the key variable being the existence or otherwise of close substitutes. As a result, different types of broadcasting (radio and television; free to air television and subscription television) are usually defined as being in different markets. An increase in the price of advertising on free to air television does not necessarily lead to a significant shift in advertising into radio or subscription television. Similarly, fixed and mobile telephony are usually defined as different markets.

Convergence requires that the definition of the market be reconsidered. The fact that convergence is combining a number of markets suggests that a broader definition may be eventually required. Is the owner of a digital cable network operating in three markets (the delivery of multichannel television, telephony and access to the Internet) or one market (the delivery of broadband services)? Secondly, vertical integration means that competition authorities may need to assess activities across a number of markets when determining whether an enterprise is in a dominant position. Thirdly, convergence results in the creation of new and emerging markets which produces another set of difficulties in defining the market. The exact nature of the market can be unknown for some time and it will often be the case that the pioneering firm will, by definition, hold a dominant position at least in the early days.

The determination of dominance is another important factor which influences the outcome of competition policy. In many member countries telecommunications regulations adopt a structural approach to testing whether an enterprise should face *ex ante* obligations. General competition law, on the other hand, tends to use tests such as “substantial lessening of competition” or “strengthening of dominance”. The EC has moved from the concept of significant market power in telecommunications to dominance in its new regulatory framework for the communications sector.

Dominance is a less clear cut concept and requires judgement made on a case by case basis. It is a legal as well as an economic concept and its interpretation has been influenced by case law in individual countries and the EC, as well as by economic principles. In general, an enterprise could be thought to be in a dominant position if it has the power to behave independently of competitors and customers. Competition authorities might take the following types of factors into consideration in determining the status of a particular enterprise:

- Ability to increase price without fear of significant reduction in sales.
- The existence and effectiveness of any barriers to entry into the market (the threat of competition).
- The level of concentration among buyers as a possible countervailing power.
- Trends and fluctuations in the level of market share of the enterprise over time.
- Whether innovation in the sector is likely to reduce the dominance of the enterprise over time.

This behavioural approach to assessing whether an enterprise is in a position to adopt anticompetitive behaviour requires a more dynamic understanding of the market than the structural or static market share approach. Dominance may be a more useful concept in a converging environment in which changing

market boundaries and industry structures, enterprise mergers and innovations will influence the ability of an enterprise to act independently of competitors. Reliance on a single threshold for invoking *ex ante* regulations could become increasingly simplistic.

The application of *ex ante* regulations to the communications sector will set new challenges for regulators, compared to existing arrangements in the telecommunications industry. They will require expertise in a broader sector while the blurring of industry boundaries and changes in industry structure could create uncertainty as to whom the regulations apply and for which activities. Regulators will need to reassess more frequently whether their previous decisions on market definition and level of dominance of particular enterprises are still valid. While convergence may make *ex ante* regulation more complex to administer, the additional complexities will also hamper the application of *ex post* competition law. Hence, this is not an argument for abandoning *ex ante* regulations. Indeed, a sector-specific regulator should be in a better position to make these assessments quickly.

A third way in which convergence will impact on the application of competition policy is through the increasing incidence of vertical integration. Mergers and commercial agreements between owners of delivery platforms and content providers mean that some decisions concerning the regulation of carriage will have an impact on the provision of content and vice versa.

Operators of delivery networks who are able to deny access to competitors (or impose delays or unreasonable conditions) can create substantial barriers to entry and reduce competition. Anticompetitive behaviour by such gatekeepers is a major concern of regulators and a focus of *ex ante* regulations such as those which require interconnection and unbundling of local loops. When the network operator is a vertically integrated enterprise with interests in the provision of content services, the concern about the potential for anticompetitive behaviour is heightened.

On the other hand, vertical integration can facilitate efficiency and innovation. The difficulty for regulators is to balance the likely benefits and costs in an individual case. One approach would be for regulators to focus not on vertical integration, *per se*, but on the undesirable effect, namely the unreasonable denial of access. Again, a focus on behaviour rather than structure may be the preferred approach. The variety of legal and informal commercial arrangements that enterprises can adopt, and which it can be very difficult for regulators to assess, is another argument for adopting a behavioural rather than structural approach. In effect, this approach would involve the presumption that gatekeepers cannot unreasonably deny or delay access to delivery networks and operating systems. This could be the prime way in which *ex ante* regulations would be imposed.

This approach may lead to arguments that it will result in a reduced incentive for enterprises to invest in infrastructure. However, a presumption of access does not prevent network owners from seeking returns from involvement in higher value added services such as content provision. Emphasis on access means merely that they cannot unreasonably prevent others from competing in these areas. In addition, the approach does not prevent the operator from charging a rent for access to the delivery platform that allows an economic return on investment.

This approach to access has important implications for policies designed to achieve plurality of voices in the media and is discussed further in that section of the paper.

An indication of some of the issues created by convergence for competition and access policy can be illustrated by examining the question of open access to cable TV networks. CATV networks traditionally delivered only one service, subscription television. Cable networks are being upgraded to digital in many OECD countries. These networks deliver a substantially larger number of TV channels, telephony, and broadband Internet access and associated new content services. In a number of OECD countries cable had

been the market leader in terms of the roll out of broadband networks and provides competition to incumbent telecommunications operators in the local loop. The upgrade of cable networks requires significant investment by cable companies.

Arguments have been made that open access regimes should be applied to CATV networks. Some independent ISPs contend that cable networks are currently in a dominant position in terms of delivery of broadband Internet access. Failure to open the system will mean that as broadband access to the Internet replaces analogue access, cable operators and their affiliated ISPs will be able to control access to the Net and the content which customers receive.

It has also been argued that broadband access over cable is essentially a transmission service. Hence the access regimes which apply to PSTN networks should apply to cable.

Cable companies have countered that open access will dampen investment in digital cable roll out as it reduces the opportunity for operators to earn a rate of return necessary to attract finance. This could have a flow-on effect to investment in ADSL networks as competition from cable has been a major spur to investment by PSTN incumbents. In addition, while cable operators may currently have a strong position in the delivery of broadband access, it is likely that competition will develop from other platforms (ADSL, satellites, and emerging mobile networks).

Under the EC's framework, the access regime which applies to cable companies will depend on their level of market power. The definition of the relevant market is clearly crucial. If the market is the market for cable services in a particular locality, most cable operators hold monopoly power. If the market is the delivery of television services, the market position of cable operators varies significantly across countries. It will be much stronger in countries such as the Netherlands and Belgium (where penetration exceeds 90%) than in the United Kingdom or Italy.

The European Commission has argued that in this case the relevant market is the delivery of broadband services. The Commission has rejected calls for *ex ante* access conditions on the grounds that rapidly developing alternative networks will mean that cable operators will not be able to prevent competitors from entering the market. In addition, the proposed new access regime would give special consideration to small, newly emerging markets where the market leader is likely to have a substantial market share.

The Commission notes that under its access regime it would be appropriate for national regulators to monitor the situation and to place 'an obligation to negotiate access on a cable TV operator with significant market power in the delivery of broadband services'. In addition to the usual measures of market share, factors likely to influence this assessment include:

- The national penetration rate of cable networks.
- Whether the cable operator is vertically integrated and, if so, the behaviour of the cable operator in terms of allowing independent ISPs access and the quality of that access and the quality of service provided by the affiliated ISP.
- Whether the PSTN incumbent is a part owner or in some way affiliated with the cable company.
- The likely impact of an access obligation on future investment by the cable operator in the roll out of the digital network.

In the United States, the FCC has adopted a position of “actively forbearing from regulation” but in June 2000 announced a formal proceeding on the issue of multiple ISPs gaining access to a cable company’s platform. Proceedings before the Federal Trade Commission regarding the proposed merger between AOL and Time Warner illustrate that these issues become even more complex when the operator of the cable network is vertically integrated with a content provider or an ISP. It also illustrates some of the options open to competition authorities to seek access obligations that might not otherwise have been forthcoming. In addition, the FCC imposed narrowly tailored conditions intended to prevent AOL Time Warner from utilising certain indirect means to disadvantage unaffiliated ISPs on the cable system due to their lack of affiliation.

The allocation and management of spectrum

Even though the move to digital will allow a more efficient use of spectrum, it will remain a scarce and valuable public good because of the range of competing uses. This was clearly illustrated in the recent auctions for 3G licences in a number of European countries. The social cost of inefficient management and use of spectrum increases accordingly.

Convergence is likely to change the relative value which different uses place on spectrum. It will also break down the boundaries among different uses to which spectrum can be put. In this environment it is necessary to:

- Reassess whether the existing allocation of spectrum among the various uses will maximise social benefits in terms of both revenue earned and the social objectives which governments set (is the appropriate amount of spectrum being allocated to broadcasting?); and
- Ensure that spectrum reserved for broadcasting is used in the most efficient manner.

In most countries terrestrial transmission has historically been the means of ensuring close to universal coverage of a basic broadcasting service. Free access to such a service is either explicitly or implicitly regarded as a community service obligation in member countries. However, in countries where a large share of households are connected to a cable network or have access to satellite services, moving at least some broadcasting services from the spectrum may have significant advantages. “Must carry” obligations on cable and satellite operators would ensure that the existing (and future) nominated services would continue to be widely available. Depending on future movements in the value of spectrum and the level of coverage of alternative networks, some arguments have been made that it may even be economically beneficial to subsidise the extension of cable or satellite networks so that all households are connected. This would meet the community service obligation while freeing up spectrum for other uses. However, in a number of OECD countries with a dispersed population or difficult geographic environments such a consideration would be very expensive. Access to mobile broadcasting services may require the retention of some spectrum for broadcasting purposes. As households become accustomed to receiving broadcasting as part of a package of communications services, such a move may receive more broadly based support. The question is whether terrestrial broadcasting will continue to be the most efficient way of meeting the objective of universal coverage of basic broadcasting services. At the same time developments in digital radio, the wide reach of digital radio, and free access to terrestrial radio broadcasting, may mean that it is unlikely to be replaced with other alternatives.

There are a number of ways in which governments could change regulatory arrangements so as to improve the efficiency with which spectrum within the broadcasting services band is used. In the United States, for example, so long as a broadcaster provides at least one free broadcast stream at least equal in quality to analogue, it may provide “ancillary and supplementary services” on its remaining spectrum. To the extent a broadcaster provides ancillary and supplementary services, it must remit 5% of its gross

revenues to the United States Treasury. In addition, awarding the carriage licence (for the use of spectrum) separately from the content licence (to provide a broadcasting service) may facilitate a number of options. If spectrum licence fees are tied to the value of the spectrum used by the operator, and any unwanted spectrum can be traded or returned to the spectrum management authority, this may create incentives for the more efficient use of spectrum. Commercial arrangements between the transmission network operator and the broadcaster should assure that these incentives are also passed on to broadcasters. This approach need not affect the allocation of broadcasting service licences. Decisions on which enterprises should become broadcasters could continue to be made on the basis of a range of social, cultural and economic factors. However, this proposal would encourage:

- Broadcasters to review the amount of spectrum that they really need and to return or trade the remainder.
- The development of multiplex operators to manage the transmission of digital terrestrial television. These operators will face commercial pressures to manage efficiently the distribution of spectrum among various broadcasters and other uses.
- Broadcasters to minimise the length of the simulcast period associated with the introduction of digital terrestrial television.
- Broadcasters to review the most efficient means of delivering their broadcasting service.

Concerns have been raised by some that secondary markets for spectrum may only result in resale as a means to increase economic profits without necessarily resulting in more efficient spectrum markets. Some countries also are concerned that multiplex operators may favour some specific content providers based only on commercial criteria; these countries believe that content should not be selected only from the economic perspective especially where specific broadcasting services have a significant social service and play public roles.

There are a number of options for linking licence fees to the value of spectrum used. An auction or competitive tender will provide a current valuation of the spectrum offered. However, if this approach is to ensure continued efficient use of spectrum in the light of unanticipated changes in the value of spectrum over time, it requires a secondary market in spectrum. Also, many countries are unwilling to allocate licences in this way. A second approach is to charge an annual licence fee based on the current value of spectrum used. This will ensure that the broadcaster and the government share the benefits or costs of any unexpected changes in the value of spectrum. This option does not require the operation of a secondary market to ensure ongoing efficient use of the spectrum. Broadcasters could hand back spectrum if increases in the licence fee warranted a reduction in the amount of spectrum used. The value of spectrum for other uses will give guidance on the level at which licence fees should be set. The cost of ensuring coverage to non-commercial areas could be treated as a community service obligation. While most countries set an annual licence fee, this is usually based on financial outcomes such as revenue, rather than the value of the spectrum used. A third option would be to combine an upfront payment for spectrum with an annual fee linked to the current value of the spectrum. With the exception of auctions where the buyer determines the value of spectrum, other methods require that the government determine its value, taking into account the intended usage, relative scarcity and the “amount” of spectrum needed. Such a determination is difficult.

The introduction of digital terrestrial television requires careful management of spectrum. So far some member countries which have introduced DTT have mandated a period during which analogue and digital services will be simulcast. This will ensure that all households continue to receive at least their current level of service until a “complete” transition to digital is achieved. During this simulcast period, analogue broadcasters will require double the amount of spectrum. In order to minimise the cost of tying up

spectrum in this way, incentives need to be in place to minimise the length of the transition arrangements. This will be particularly important in countries where broadcasters have been allotted the additional spectrum free of charge. In this case there could be an incentive for broadcasters to delay the transition, especially if they believe that the returned spectrum will be used to introduce additional competition into the industry. A number of options could be considered:

- Agree on a date at which analogue transmission will cease and a transition path which would ensure this outcome (*e.g.* the proportion of households to have converted to digital by the end of each year). Broadcasters are only provided with the additional spectrum free of charge if they continue to meet the annual goals along the transition path.
- Assign the spare spectrum to the new licensee two years before the proposed switch off of analogue transmission. The new owner will at least provide an effective counter lobby to the incumbents who may wish to drag their feet.

Whether countries need a simulcast period could be influenced by the amount of spectrum available and the size of the population dependent upon terrestrial transmission to receive their basic television service.

Convergence is allowing spectrum to be used more intensively and is breaking down the boundaries between the different uses to which spectrum can be put. Licence conditions should not define so narrowly the uses to which spectrum can be put that the operator is unable to take advantages of these technical advances. While regulators may wish to set minimum conditions in terms of the level of broadcasting services which must be provided, operators should be able to provide additional services if technology and efficient management of the spectrum allow.

Convergence and the regulation of content

Plurality of voices in the media

Plurality of voices in the media, in the sense of different sources of information, different editorial perspectives and access to the media for people with different points of view, is crucial to the effective functioning of a democracy. It is probably the most significant cultural objective for broadcasting. The importance of plurality and diversity in the media is well expressed in the UK White paper on Media Ownership:

“A free and diverse media are an indispensable part of the democratic process. They provide the multiplicity of voices and opinions that informs the public, influences opinion, and engenders political debate. They promote the culture of dissent which any healthy democracy must have. In so doing, they contribute to the cultural fabric of the nation and help define our sense of identity and purpose. If one voice becomes too powerful, this process is placed in jeopardy and democracy is damaged. Special media ownership rules, which exist in all major media markets, are needed therefore to provide the safeguards necessary to maintain diversity and plurality.”

From a policy perspective it is useful to distinguish between plurality of ownership and diversity of programming. While the two objectives are often discussed together, the distinction is an important one. Different policies will often be needed to achieve the two objectives. For example, a significant increase in the number of channels available to viewers (through the introduction of a pay television service by multiplexing multiple programmes on the single broadcast channel) should result in greater diversity of programming. However, it will not produce greater plurality of ownership if an incumbent broadcaster owns all the new channels. As a second example, whereas increased competition (in the form of an

increase in the number of players) should contribute to plurality, it is not necessarily the case that increased competition will lead to greater diversity of programming. The economist Hotelling has shown that under certain circumstances, increased competition can result in a reduction in the range of goods and service as operators compete for the middle ground. This argument would seem to have some validity in the case of terrestrial broadcasting where each operator has only one channel. Giving each broadcaster more channels is more likely to result in more diverse programming.

Plurality of ownership in the media

Digital technology and convergence have the potential to contribute greatly to plurality of voices. The more intensive use of spectrum which digital allows will mean that spectrum will no longer be such a key constraint on the number of broadcasters. Governments will have the opportunity to licence new broadcasters. Digital transmission also increases the volume of material which can be carried by cable and satellite networks, hence reducing the opportunity cost to an operator of carrying content from independent providers. Convergence may also assist by allowing for greater competition between delivery networks. Competition, in the sense of more players in the market, should assist in achieving plurality of voices. Content can also be presented in a number of different ways, possibly increasing its attractiveness and accessibility to viewers.

Convergence should contribute to plurality of ownership if new broadcast owners enter the industry and are not controlled by existing media players. Incumbent broadcasters or operators of delivery networks must not be allowed to restrict new entrants through control of delivery networks, control of household decoder boxes and conditional access systems and control of premium programming. This suggests that access will be an important focus of future policies directed at achieving the objective of plurality of ownership.

Currently, most member countries have regulations that are directed at restricting the size, reach or influence of any one commercial broadcaster. These policies include:

- Restrictions on one enterprise owning different types of media, especially forms of media which are thought to have a high level of influence among the population (free to air television, newspapers and often radio).
- Restrictions on one television company owning more than one type of transmission network (e.g. a terrestrial broadcaster not permitted to hold a cable TV license).
- Restrictions on the reach of individual broadcasters, either through limits on the number of terrestrial channels which one enterprise can control, the maximum audience share which one broadcaster can achieve and the maximum level of control one person can hold in a broadcaster.

The funding of public service broadcasting represents another approach to achieving plurality of voice in most member countries. Most public service broadcasters have legislation or charters which require accuracy and impartiality in the reporting of news and current affairs. They are also expected to provide access to a broad range of views. The public financing of such broadcasters means that commercial considerations are not the prime driver of programming decisions. As such they have the potential to provide an important alternative voice. In some countries, however, they remain the sole voice on terrestrial television.

Convergence is likely to reduce the effectiveness of policies based on restricting the reach and range of activities of individual media operators. In a terrestrial, analogue world, restrictions on the number of channels was a useful proxy for market share. However, in a multi-channel environment, this is no longer

the case. In a converging environment, restrictions on line of business could mean that the benefits of innovation and new services are lost. Restrictions on share of households may mean that only those living in the most economic markets (larger cities and regions) receive the service.

Current regulations generally ignore new media and convergent services which may make it harder to distinguish between traditional forms of media. They also may not give sufficient attention to assessing the impact of vertical integration on the influence of individual enterprises.

Further, it is unclear whether cross media restrictions in an individual country (especially smaller countries) will remain viable in the face of global changes in industry structures flowing from horizontal and vertical integration of large enterprises. In part, these mergers are in response to convergence blurring the boundaries between traditional forms of media. Attempting to prevent such developments could mean that the associated benefits of economies of scope are lost. In any case, it will become increasingly complex to determine who owns and controls particular enterprises in an environment characterised by fluid ownership arrangements and a range of horizontal and vertical arrangements short of formal mergers.

These arguments suggest that, over time, the strategic policy approach to achieving plurality of voices in the media may need to change from restricting any one player's voice to encouraging access to more voices. This would represent a significant change in policy focus. In the past, policies in many member countries accepted that the limitations of analogue technology and economies of scale implied that there would always be only a few broadcasters and that it was necessary to restrict the power of any one operator. The new question is whether digital technology and convergence create the opportunity to increase the number of broadcasters. If so, this would seem to be a more effective way of achieving plurality of ownership in the media. A key aspect of this shift in policy will be the need to ensure that prospective broadcasters (or new types of content providers) are able to gain access to delivery networks so as to reach viewers. The approach to *ex ante* regulation of the carriage of communication services which carries a presumption of access should be helpful in achieving this outcome. Policies will need to:

- Encourage competition between delivery networks.
- Ensure that operators of delivery networks do not use their control of gateways to unreasonably prevent other broadcasters from transmitting their services.
- Ensure that operators of conditional access systems do not deny access on reasonable terms and that standards develop in a way conducive to interoperability or a common interface.
- Ensure that exclusive contracts for premium content are not used as a means of unfair competition.

Under this approach, competition policy would become a key policy instrument in achieving plurality of voices.

Access to delivery networks

Gaining access to a delivery network could represent significant barriers to entry to a new broadcaster. Access to spectrum can be difficult given the way in which spectrum is allocated and the lack of a secondary market. Satellite capacity has a finite limit unless new satellites are launched and there are significant costs of replicating a cable network, even if authorities allow overbuilding.

In an analogue environment governments have intervened directly to ensure that certain broadcasters have access to transmission networks. In the case of terrestrial broadcasting, governments have often reserved spectrum for public service broadcasters and small, community controlled broadcasters. They have also required cable operators to transmit public service broadcasters and a range of free to air commercial channels. In a number of European countries, these ‘must carry’ obligations account for a high proportion of the capacity of analogue cable networks. In some countries, similar ‘must carry’ regulations also apply to satellite networks. In some countries ‘must carry’ provisions are being extended to digital terrestrial television channels.

Upgrading networks to digital will increase the capacity of the networks and should reduce the opportunity cost of carrying independent broadcasters. However, network owners will want to use the additional capacity to carry high value added services in order to meet the financial costs of upgrading their infrastructure. Judgement as to whether an operator is unreasonably denying access as a means of preventing competition will often be difficult. In making their assessment, regulatory authorities need to give weight to factors such as the reach of the carriage network, the availability of alternative networks and the viability of developing alternative networks. If the network operator is vertically integrated and also provides a broadcasting service, or is involved in content provision in some other way, the level of scrutiny by the authorities should be more intense.

There are a number of remedies available to regulators if they decide that the operator of an infrastructure network is behaving in an anticompetitive manner, ranging from revised ‘must carry’ obligations to imposing access regimes.

Germany is one country which has amended its “must carry” regulations to reflect the greater carrying capacity of digital cable systems. The Interstate Treaty of 1 April 2001 stipulates a less regulated approach to the services which cable operators can provide in a digital environment, compared to current analogue regulations. The treaty defines three categories of cable programming which are regulated differently.

- In the first category, the cable operator must reserve the equivalent of four analogue channels; three for public service broadcasters and their digital bouquets and one for regional, local and public access programmes.
- Secondly, the operator must reserve one-third of digital cable capacity for broadcasters with a pluralistic offer of generalist programmes, non-pay TV programmes, niche programmes and foreign language programmes. The interests of viewers should be considered in deciding which programmes to offer. While the operator decides which programmes to offer in this section, the regional regulators are to control the application of these requirements.
- The final category is not regulated, except for general laws. The operator can choose to provide digital services, new media and programmes without being bound to broadcasting rules. The capacity of this “free” category depends on the capacity of the network.

In Australia, the competition authority, the ACCC, has required Telstra to open its cable network to broadcasters other than Foxtel in which Telstra has a 50% share. After the ACCC declaration was upheld by the courts, Telstra indicated that it would begin commercial negotiations with aspiring broadcasters and that if demand exceeded the availability of channels, it would conduct an auction to allocate the available capacity.

Given the barriers which may prevent emerging broadcasters from accessing existing networks, competition between delivery networks may be an important way of ensuring plurality of voices. In particular, the development of a new network provides an opportunity to encourage new players into the

market. This should be an important consideration of authorities when devising regulatory frameworks for the introduction of digital terrestrial television.

Competition between networks has been an important feature of the introduction of digital television in Europe. In the three most advanced digital markets, France, Spain and the United Kingdom, there has been competition for subscribers across two (France) or three (Spain and the United Kingdom) networks. This has resulted in competition in terms of price, quality of programming and the range of new services offered. However, the introduction of new players has sometimes required the direct intervention of regulators. In the United Kingdom, BSkyB (the satellite broadcaster) was required to withdraw from the consortium bidding for a digital terrestrial subscription television licence. The Competition Directorate of the European Commission has also delivered a number of rulings which have prevented incumbent, free to air broadcasters from controlling the subscription television market in their country. In the United States, cable operators were prevented from entering satellite broadcasting by the courts. In a recent report, the FCC noted that two DBS operators “rank among the five largest MVPDs (multichannel video programme distributors) in terms of subscribership along with three cable MSOs (multiple system operators).”³ This is a significant change from the situation ten years ago when cable was virtually the only means of receiving multichannel subscription services.

Competition authorities need to be wary of horizontal mergers between operators of different delivery networks which might reduce the number of gatekeepers controlling access to households. In addition to the cable and satellite and cable and terrestrial examples given above, the EC has required incumbent telecommunication operators to dispose of the cable networks they own in their countries. While this decision will initially impact on the level of competition in the markets for fixed telephony and Internet access, it could also impact on plurality of voices as telecommunications operators become more interested in the delivery of audiovisual services.

Access to conditional access systems

The same principles which govern access to networks should be used in ensuring access to conditional access systems (CAS), Applications Programme Interface (API) and Electronic Programme Guides (EPG). Systems operators who control these gateways will be able to influence the conditions under which third party content providers are able to access viewers.

In 1999, the European Commission noted that suggestions for addressing API interoperability have included compulsory licensing and publication of APIs, functional interoperability and moving away from proprietary APIs towards a common, open system. They argued that it is advisable to rely on the market to deliver interoperability given the dynamic nature of the market and advances in software. If, however, the market failed to deliver this outcome, there would be a case for mandatory standards to ensure open access and interoperability.

The UK Communications Bill provides competition powers to OFCOM to cover APIs, EPGs and similar new systems. They also highlight the importance of ensuring that operators of EPGs give suitable prominence to public service broadcasters when they design their EPGs.

Access to content

The large increase in the price for premium content in recent years is an indication of the importance of key sporting programmes and recent feature films in attracting subscribers to pay TV services. In circumstances where access to content with a high public interest is difficult (e.g. key sporting programmes) entry barriers can be created. An enterprise in a dominant position may attempt to use its power to sign exclusive agreements regarding key content as a means of raising barriers to entry in its

market. For example, a dominant operator in the provision of infrastructure services could attempt to sign exclusive agreements with providers of key content. This would make it difficult for new broadcasters owning alternative delivery networks to obtain the programming necessary to compete effectively. Alternatively, a dominant firm in the provision of a certain type of content may seek to sign agreements with broadcasters which prevent them from broadcasting programmes from alternative content suppliers.

In the 1980s, the US Justice Department required Time Warner to provide key content channels which it was withholding from satellite broadcasters competing with its cable system. Currently, the UK authorities require BSkyB to provide access to its content to OnDigital, the new subscription service delivered via the digital terrestrial network. In both cases, regulators were concerned that lack of access to key content would hamper the development of competition in pay television which was emerging through services delivered over new infrastructure.

Vertical integration, especially between content suppliers and operators of delivery networks, can exacerbate these types of problems and place an enterprise in a strong position to create high barriers to entry. Much of the opposition to the AOL – Time Warner merger was driven by concerns of this nature and much of the activity of competition authorities has been directed at establishing whether adequate safeguards can be put in place.

Exclusive agreements are not always a cause for concern. They are used extensively among content creators as a way of facilitating profit maximisation through price discrimination (*e.g.* the way in which a film is distributed through different exhibition windows at different prices) and as a means of increasing the attractiveness to distributors of marketing the product. Similarly, vertical integration can facilitate efficiency and innovation. The difficulty faced by the competition authority is assessing the likely outcomes in a particular case. In 1999, the OECD⁴ examined some of the conditions under which exclusive contractual agreements between content providers and infrastructure providers may be efficient and situations in which they are likely to restrict competition. The following principles are suggested as guidelines:

- The definition of dominance and the relevant market are critical.
- The desirability of intervention will depend, in part, on whether there are clear efficiency enhancing properties and whether the length of the contract is only as long as necessary to achieve these benefits.
- Mergers between dominant content providers and infrastructure operators that would prevent other infrastructure operators from bidding for the content in the long term should be subject to careful antitrust scrutiny.
- In the presence of clear standards for content, mergers between dominant content providers and infrastructure operators that would prevent competing content from being broadcast by the infrastructure operator in the long term should be subject to careful antitrust scrutiny.
- Where there are network externalities due to the need for any-to-any connectivity, dominant networks should not be able to deny access to competitors.

Reconciling different objectives

This analysis suggests that in a digital world competition policy and access regimes should be able to make a significant contribution to plurality of ownership in the media. Interestingly, the same broad set of policies might be used to pursue the economic objective of increasing competition and the cultural

objective of plurality of voices. However, the two different objectives may create tensions in the way in which these policies should be implemented and the extent to which regulators should intervene. Two examples, relating to the threat of competition and the definition of the market, are discussed below.

In an economic framework, the threat of competition is often thought to be sufficient to entice incumbents to behave in a way which produces the desired outcomes in terms of price, quality and innovation. A similar point is illustrated by the fact that under EC competition law, it is not illegal for a company to be in a dominant position. The company must abuse that dominant position before the law is broken. In contrast, to achieve the objective of plurality, a number of competitors must be operating effectively in the market.

It might be argued that market forces will create an incentive for media operators to provide a range of publications or programmes which appeal to different sections of the population and hence broaden their market. The same argument can explain why a range of views and perspectives appear within the one publication or programme. The threat of competition should be sufficient to ensure this outcome. While this argument has some validity, it may lack credibility when it comes to an open and critical assessment of a media operator's own commercial interests or of political decisions which might impact significantly on those interests. Given the size and influence of the sector, these commercial interests are likely to be of some community concern. This point has even more weight if the media operator has political interests or aspirations. Plurality of voice requires actual competition, not just the threat of competition.

Secondly, as discussed above, the definition of the relevant market plays a crucial role in determining the impact of competition policy in practice. It is possible that economic and cultural objectives could dictate that the market be defined differently in the same case. At an abstract level, an economic framework may result in a relatively narrow definition of the market. At its simplest level, two goods are said to be in the same market if they are substitutes; an increase in the price of one good results in an increase in demand for the other. This means that the product market for broadcasting (and media more generally) is usually viewed as a market for advertising revenue. While this is understandable if the prime objective is to minimise abuse of monopoly power in terms of its effects on prices and quality of services, it will not necessarily give the best outcome if the objective relates to plurality. For example, free to air television, radio and newspapers might be regarded as separate markets, and therefore a merger between operators in two of these markets would not necessarily be opposed on economic grounds.

When the main concern is plurality rather than competition, the product can be thought of as information and opinion and the aim of regulatory policy is to prevent one media operator from gaining excessive power in the market for ideas. Citizens could gain access to those ideas from books, magazines and the Internet as well as television, radio and newspapers. The merger of dominant players from two of these sectors could decrease the diversity of views and opinions available to the public.

This is an important example where the regulation of carriage and the regulation of content cannot be considered separately. Decisions in one area will have direct and significant implications for objectives in the other. Both the economic and cultural objectives are important and the policy instruments are powerful. Legislation will need to be drafted with both objectives in mind and give guidance on the weight to be given by regulators to the different objectives and the process to be followed in assessing a particular case.

In the United States, consideration of mergers in the communications sector requires approval from the Department of Justice or the Federal Trade Commission, which examines the proposed merger from an economic perspective, and from the FCC, which assesses the merger against broader public interest objectives. Although a number of OECD countries have been exploring models of broader public interest tests and have taken decisions in this area, a discussion of broader public interest tests fall outside the scope of this paper.

Managing the transition

While, in the future, the best policies to achieve plurality may be those which encourage new broadcasters into the market, there are important policy questions surrounding the transition to this outcome. The relaxation of existing restrictions on incumbents in situations where a competitive environment has not been established in the broadcasting industry is likely to lead to further entrenchment of the dominant position of incumbents.

In June 2003, the FCC released the outcome of its biennial review of US regulations governing broadcast ownership. After developing an extensive factual record, the FCC retained certain rules and relaxed others. It retained the ban on mergers between the largest broadcast networks and it continued the existing radio ownership limits. It slightly increased the number of television stations any one company can own nationwide and locally, and it allowed a greater degree of cross-media ownership, such as between newspapers and television stations. The FCC took these steps after its prior biennial review was heavily criticised by the courts for failing to account for dramatic changes in competition and diversity in the media marketplace. The FCC determined that its new broadcast ownership rules would preserve competition, diversity, and localism in broadcasting while fairly reflecting the changed circumstances faced by US broadcasters today.

Cultural diversity and domestic content quotas

Regulations requiring a minimum level of domestic or local content on television are a feature of the industry in most European OECD member countries, Canada, Australia and Korea. The Television Without Frontier directive of the EC stipulates that, where practicable and by appropriate means, broadcasters should reserve for European works a majority proportion of their transmission time (excluding time appointed to news, sports, games, advertising and teletext services). Further, 10% of transmission time or programme budget should be reserved for independent productions. France has set a higher level for European works (60%) and a number of countries have a domestic quota within the European quotas (France, Netherlands, Poland and Portugal). France also requires broadcasters to invest a certain proportion of their revenue in the production of domestic feature films and television programmes.

The rationale for such policies relates to the cultural objectives of fostering national identity and cultural diversity by ensuring that television services provide programmes which reflect a country's own voice in terms of the type of stories, the language and the perspectives.

In most countries many domestic programmes are popular and rate highly. As a result it is often argued that such programmes do not need quotas to protect them. However, the lack of a direct commercial relationship between the viewer and the broadcaster means that profit maximisation by advertising-funded broadcasters will not always lead to programmes which viewers value most highly. Broadcasters will rank programmes by the net revenue (advertising revenue less costs) they produce. A low cost, foreign programme may deliver higher net revenue than a domestic programme with higher ratings but higher costs. The economics of audiovisual production and distribution are such that a domestic broadcaster can buy a foreign programme for a small fraction of the cost of production. In addition, 'packaging' by US studios means that high rating shows are often sold as a package which includes a number of low rating programmes. Hence, the cost to broadcasters of these less popular shows is virtually zero, whereas domestically-produced high-quality programmes are expensive but have no export potential or other revenue-generating potential.

It is still questionable whether transmission quotas are the most effective means of achieving cultural objectives. Economic theory suggests that production subsidies are likely to be more efficient. There is also an argument that quotas will have a disproportionate impact on new broadcasters compared to incumbents

who are better able to bear the increased costs which quotas imply. In this case quotas may discourage entry of new players, and hence, in the long term, reduce the amount of domestic programming which new broadcasters would commission. Again subsidies would be the preferred policy. While a number of countries do provide such subsidies, fiscal pressures lead to quotas substituting for subsidies, either in part or whole.

The implications of convergence for the effectiveness of transmission quotas strengthen the case for moving from quotas to subsidies. While it is relatively easy to apply transmission quotas and monitor compliance in the case of analogue, free to air channels, they will come to represent a smaller percentage of total channels available. Quotas become more complex in a digital, multichannel industry. In some countries regulators have extended quotas to subscription services but it is difficult to base the quota on the number of hours transmitted as many of the pay channels are purchased as a complete channel and the broadcaster has little or no control over the content of the channel. Quotas are more likely to be imposed on the level of expenditure on programming.

Subscription fees mean that consumer preference will play a more direct role in determining the programming schedule of broadcasters. The trend to pay-per-view services and options which allow viewers to subscribe to individual channels rather than to packages of channels will enhance this characteristic. As a result one would expect subscription broadcasters to decide which channels to offer based on the revenue that a channel can earn from subscription fees and advertising and the costs of purchasing or compiling the channel and the transmission costs. If the expenditure quota has an impact on the behaviour of the broadcaster, it implies that the broadcaster substitutes a channel with a higher domestic content for one with lower domestic content even though this involves lower net revenue. The international nature of the audiovisual market will restrict the options open to the broadcaster. Foreign channels will be purchased on a ready to transmit basis and it will not be possible to insert additional domestic material. Hence the broadcasters will need to alter the content of channels they compile themselves or channels compiled locally which they are able to influence. This will be easier in larger markets such as France and Germany than in smaller markets which can not financially support domestic niche channels.

Broadcasters will look for ways to minimise the cost to them of the quota. One strategy might be to invest the amount stipulated by the quota in a small number of high cost feature films which could be incorporated into an existing film channel. This outcome is unlikely to have a significant impact on the cultural objective which will require a certain quantity of high quality domestic programming.

Production subsidies are likely to be more effective than quotas since by reducing the costs of domestic programmes, subsidies will increase their attractiveness to channel compilers, both domestically and overseas. From the point of view of the independent domestic producer, there are advantages in having their programmes included in internationally broadcast channels. Not only should the immediate return be higher, but also the wider exposure may increase the independent domestic producer's chances of attracting financial backing for future projects.

The emergence of new forms of audiovisual content and services will also challenge the effectiveness of quotas in achieving cultural diversity. Firstly, there will be definitional questions. Is the new service covered by the domestic content obligations? New content might be delivered over the Internet or by telecommunications operators. Or it might refer to new services provided by broadcasters operating on a digital platform. The characteristics of the service could be sufficiently different to raise doubts as to whether it falls within the definition of broadcasting. This uncertainty can dampen innovation and investment in new services.

Many of the new services will be developed for delivery over the Internet. The Internet has developed largely free of government regulation and there is a general reluctance to extend the content regulation faced by broadcasters to the Internet, although some broadcast regulators have suggested that this should occur in a partial way. Furthermore, it is not clear that it would be possible to apply national policies such as domestic content quotas to an international phenomenon. If this is the case, similar content delivered by broadcasters and over the Internet could face quite different regulatory restrictions.

Again, subsidies would appear preferable to quotas. Subsidies would lower the cost of domestic content, irrespective of whether it was delivered over broadcasting or Internet networks. Also, if governments thought that it was necessary from a cultural perspective, subsidies could be extended to the production of new forms of content.

While subsidies would appear more effective at achieving the objective of cultural diversity, the major obstacle in shifting from quotas to subsidies is the fiscal cost. However, it has been argued that licence conditions such as domestic content quotas have reduced the price which broadcasters have been willing to pay for their licence. Removing this restriction could increase government revenue from licence fees. Also, policies associated with the more efficient allocation and use of spectrum discussed in earlier sections would also be expected to increase revenue.

Public broadcasting

Public broadcasting services are currently achieved in two ways in member countries. The first involves obligations on all or certain broadcasters to provide services which are in the public interest and which are unlikely to be provided otherwise. In some cases, broadcasters face a lower licence fee in return for meeting these obligations. The public interest has been defined in terms of some mix of promoting diversity in programming, accurate and impartial reporting of news and current affairs, encouraging a range of views and screening an appropriate level of special interest material such as educational, children's and religious programmes. The second approach involves funding a publicly owned broadcaster to provide universal and free (at point of reception) access to quality content and accurate and independent news and information.

Most countries use both approaches. In the United States, greater emphasis is placed on commercial, terrestrial broadcasters meeting public interest obligations in return for free use of the spectrum. Some government funding is provided to the Public Broadcasting Service, a network of independent broadcasters also funded by members' subscriptions. In most other member countries one or two public broadcasters are at least partially funded by government grants or licence fees collected from viewers (*i.e.* an hypothecated tax). Public broadcasters retain a strong and often dominant position in European countries. In part, this reflects their historical role as monopoly broadcasters in many countries until the mid to late 1980s and, in part, their ability to continue to attract sizeable audiences in a competitive environment.

There has been considerable debate over whether there is still a role for public broadcasters in a digital and converging environment, and if so, what is that role and how can it be best achieved.

A number of arguments have been made as to why convergence is reducing the need for public service broadcasting. These include:

- Digital broadcasting is reducing the importance of spectrum scarcity in restricting the choice of services available to viewers. Subscription television packages include a large number and range of niche channels directed at meeting the needs of a variety of interest groups. Access to a diversity of programming no longer requires a relatively small number of broadcasters to each offer a diverse mix of programming.

- New forms of media have the potential to reduce the pervasiveness and influence of broadcasting as they provide alternative sources of entertainment and information.
- Emerging business models will give a stronger role to consumer preference in determining programming mix. Pay-per-view options and the ability to subscribe to individual channels rather than large packages will increase the ability of viewers to signal their preferences to broadcasters. Hence it may no longer be necessary for regulations or public broadcasters to second guess the interests of viewers.

The strength of these arguments will vary from country to country and over time. They depend, in large part, on the vast majority of the population subscribing to pay television and having access to the Internet. In addition, while convergence and subscription television may significantly improve the workings of the market, a number of barriers to a competitive and efficient market are likely to remain. It is possible that economies of scale and scope, vertical integration and the ability of gatekeepers to prevent or hamper access to viewers will tend to produce an oligopolistic market. In addition, there are also customers who prefer general channels and are not willing to opt for pay TV, preferring free TV.

Regulatory institutions

There has been much debate about the implications of convergence for the number and roles of regulatory authorities in the communications sector. To some extent the discussion has focussed on whether there should be a move to two regulators (one for carriage matters and another for content) or whether both roles would be best performed by one regulator. An equally important point, but sometimes overlooked in the discussion, is the relationship between the competition authority and the communications regulator(s).

These are complex issues and it will be necessary to design the appropriate institutional structures to take into account:

- The roles which regulators will be expected to perform.
- The need for clarity (from the point of view of both industry and regulators) as to which regulator has authority on a particular issue.
- The value in minimising the number of regulators that an enterprise needs to deal with.
- Efficient public administration.
- Public and industry confidence in the independence and competence of the regulators.

Based on earlier discussions, the regulator(s) in the communications sector will need to perform the following types of functions: implementation of competition policy and access regimes, other 'carriage' matters (spectrum planning and allocation, USOs, consumer protection) and content regulation (including allocation of broadcasting licences).

Competition policy and access regimes

This paper has emphasised that on some important matters it will not be possible to treat carriage and content issues as independent and mutually exclusive issues. As the impact of convergence becomes more pervasive, competition policy and access regimes will be increasingly important tools for achieving both objectives of competition and plurality. Convergence will also require regulators to take a broader view of industry boundaries when assessing mergers. These are arguments for reducing the number of regulators, otherwise the areas of overlap and the potential for uncertainty and inconsistency will increase. At the

moment, in some member countries, three different bodies are involved in administering these regulations: the general competition authority; the telecommunications regulator; the broadcasting or media regulator.

In deciding which and how many bodies should be involved in implementing competition policy, the important principles are:

- Legislation (relating to mergers, anti-competitive behaviour and access regimes) is framed so as to achieve both the economic and the social objectives, as part of the one process and with clear indications of the weighting to be given to both objectives.
- The regulators should have the expertise to assess and make sound judgements on both:
 - The technical and industry-specific aspects of the arguments.
 - The social and cultural aspects of any national interest test (or similar policy) relating to plurality.
- The regulators are independent from the actors in the sector and are perceived by the community to be independent.

Member countries have adopted different approaches to achieving consistency and clarity in the administration of competition policy in the communications sector. In the United Kingdom, the new single regulator, OFCOM, will have concurrent powers with OFT in applying Competition Act powers within the communications sector. This is an extension of the current arrangements of OFTEL in the telecommunications industry and has the advantage that one body has oversight of all regulations affecting the sector and can choose the most appropriate policies to tackle a particular problem.

In the United States, Japan and Korea both the competition authority and the communications regulator (or Ministry) are involved in approval of mergers in the industry. For example, in the United States the Department of Justice or the Federal Trade Commission examines proposed mergers and acquisitions to determine whether they would violate the antitrust laws (competition policy). Simultaneously, the FCC reviews any licence transfer applications needed to effectuate the acquisition or merger for consistency with the Communications Act and any of the FCC's policies regarding competition, diversity and the public interest.

Australia has a different model again as the competition authority (the ACCC) has been given a range of regulatory powers specific to the telecommunications industry. Not only is the ACCC responsible for mergers and anti-competitive behaviour in the industry, but also *ex ante*, proactive policies such as access regimes, price controls, interconnection arrangements and oversight of some license conditions. The industry regulator (the ACA) is responsible for spectrum planning and allocation, numbering planning and allocation, issuing licenses, USOs, and service quality.

Allocation of spectrum USOs and consumer protection

Efficient allocation of spectrum is more likely to be achieved if the allocation and planning of spectrum, *e.g.* deciding how many broadcast channels will be available to licence, are the responsibility of one body. As convergence increases the value of spectrum, this will become an increasingly important objective. Current practice among OECD countries is mixed: nearly half the OECD countries have the same body responsible for the planning and allocation of spectrum for telecommunications and broadcasting purposes whereas in 10 countries the two tasks are undertaken by different bodies.

The involvement of separate authorities in the allocation of broadcasting spectrum reflects the existing link between the allocation of spectrum and a license to provide a broadcasting service. In many countries governments have wanted specific arrangements to govern the awarding of broadcasting licences. Under the proposal to separate the regulation of carriage and content, broadcasters would require two licences; one to operate the carriage network including spectrum and one to operate a broadcasting content service. The carriage license would simply allow the licensee to operate a carriage network for the transmission of communication services. The key licence from the point of view of content would be the second licence. Under this scenario, it should be possible to achieve the benefits of having one body responsible for the planning and allocation of all spectrum, while accommodating special arrangements for the allocation of broadcasting licences if this is desired.

There is also likely to be value in having one body responsible for the delivery of all USOs in the sector. Convergence should permit the more efficient delivery of these services as a package compared to the current arrangements where obligations fall on different players. As the USOs are primarily about the delivery of specified services, they are more a 'carriage' matter and should be located accordingly.

A USO approach to the issue of access to broadcasting services in uneconomic areas has not been adopted in all member countries, and is only one regulatory model. An alternative is a combination of community and industry funding programmes and regulatory concessions (such as in respect of licence area restrictions). Such an approach allows access issues to be resolved according to identified needs in specific communities and through industry, government and community partnerships, rather than as a general obligation attached to a carriage licence. In some markets, the latter may require major subsidy or constitute a significant barrier to entry.

Content regulation and the allocation of broadcasting licences

At one level these arguments suggest a move to one regulatory authority. At another, they raise questions as to whether it would be possible to get one organisation to develop the different cultures required to assess both the economic and the cultural dimensions. In addition, some have argued that given the importance of the issues, they should not be left, ultimately, to one small group of decision makers. The UK OFCOM model goes some way to address this latter issue by creating a Content Board with a wide membership. This Board works within OFCOM, but is to some extent separate from OFCOM. If the preference is for more than one regulator, the key issues are the most appropriate means of co-ordinating competition policy and whether to have a separate authority responsible for content regulation and the allocation of broadcasting licences.

Audio-visual services over the Internet

Broadband audio-visual services use the Internet to transmit programmes. Broadband audio-visual services are currently unregulated or subject to very light regulations in most OECD countries since they are not encompassed in existing service definitions.

As mentioned below these broadband services fit into existing broadcasting definitions. Traditionally, broadcasting has been defined as the dissemination of programme content to the public at large. Indeed, a large number of OECD countries incorporate this aspect into their domestic laws. In the United States, for example, the Communications Act defines broadcasting as 'the *dissemination* of radio communications intended to be received *by the public*, directly or by the intermediary of relay stations.'⁵ In Japan, the Broadcasting Law stipulates that broadcasting means 'the *dissemination* of radio communications intended to be received *by the public* directly.'⁶ In Canada, broadcasting means 'any transmission of programmes, whether or not encrypted, by radio waves or other means of telecommunications for reception *by the public* by means of broadcasting receiving apparatus, but does not include any such transmission of programmes

that is made solely for performance or display in a public place.’⁷ Underlying these definitions is the notion that access to broadcast programmes requires no particular action by the consumer (apart from turning on the television or radio). The notion of broadcasting differs from that of telecommunications where information is *transmitted* and where the user plays a more direct role in obtaining access to this information. On the other hand broadband audio-visual information differs from both notions in that the information is not private *i.e.* it is available to all users, but there is interactivity and it requires the active participation of the users to access the information as well as allowing selectivity by the users of the type of information they want to receive. In addition, the number of video programmes available over the Internet is in practice unlimited, whereas over-the-air broadcasting has a pre-defined and relatively limited number of simultaneous programmes available. Broadband audio-visual services would tend to fall within a ‘grey zone’ in terms of the applicability of regulations but with a closer affinity to video-on-demand where strict broadcast content regulations do not normally apply. Japan differentiates between broadcasting and telecommunication on the basis of the subjective intention of the sender; if the sender intends that the content be received directly by the public then the service is categorised as broadcasting.

Table 1. Broadcasting administration and regulation in the OECD area

Country	Audiovisual Policy		Regulation	
	Carriage regulation	Frequency allocation	Content regulation	
Australia	Department of Communications, the Information Economy and the Arts	Australian Broadcasting Authority (ABA)	ABA	
Austria	Federal Chancellery/ Department for the Media	Federal Ministry of Science and Transport, Regional Radio and Cable Broadcasting Authority	Federal Ministry of Science and Transport	Commission for the Observance of the Broadcasting Act, Regional Radio Act, Cable and Satellite Broadcasting Act
Belgium ¹		Government of the French Community, <i>Conseil Supérieur de l'audiovisuel</i> (CSA)	Government of the French Community, <i>Conseil Supérieur de l'audiovisuel</i> (CSA)	
Canada	Department of Canadian Heritage	Canadian Radio-television and Telecommunications Commission (CRTC)	Industry Canada	CRTC
Czech Republic	Council of the Czech Republic for Radio and Television Broadcasting	Czech Telecommunication Office	Ministry of Informatics	Council of the Czech Republic for Radio and Television Broadcasting
Denmark	Ministry of Culture	Ministry of Culture, Local Radio and Television Board, National IT and Telecom Agency	National IT and Telecom Agency	Ministry of Culture, Local Radio and Television Board, Satellite and Cable Board
Finland	Ministry of Transport and Communications	Ministry of Transport and Communications	Telecommunications Administration Centre	Council of State, Ministry of Transport and Communications

Table 1. Broadcasting administration and regulation in the OECD area
(cont'd)

Country	Audiovisual Policy		Regulation	
	Ministry of Culture	Carriage regulation <i>Conseil Supérieur de l'Audiovisuel</i> (CSA)	Frequency allocation CSA (coordinated with ART)	Content regulation CSA
France	Ministry of Culture			
Germany	n.a.	<i>Direktorenkonferenz der Landesmedienanstalten</i> (DLM), Regulatory Authority for Telecommunications and Posts (Reg TP)	Reg TP	DLM
Greece	n.a.	Ministry of Press and Mass Media; National Radio and Television Council	Ministry of Transport and Communication	National Radio and Television Council
Hungary	National Body for Radio and Television (ORTT)	ORTT Communications Authority (HIF)	HIF	ORTT
Iceland				
Ireland	n.a.	The Office of the Director of Telecommunications Regulations (ODTR)	ODTR	Independent Radio and Television Commission (IRTC)
Italy	n.a.	Ministry of Communications; AGCom	Ministry of Communications; AGCom	Ministry of Communications; AGCom
Japan	Ministry of Public Management, Home Affairs, Posts and Telecommunications	Ministry of Public Management, Home Affairs, Posts and Telecommunications	Ministry of Public Management, Home Affairs, Posts and Telecommunications	Ministry of Public Management, Home Affairs, Posts and Telecommunications
Korea	The Korean Broadcasting Commission; Ministry of Culture and Tourism	Ministry of Information and Communication	Ministry of Information and Communication (licenses issued on advice of KBC)	The Korea Broadcasting Commission

Table 1. Broadcasting administration and regulation in the OECD area
(cont'd)

Country	Audiovisual Policy		Regulation	
	Carriage regulation	Frequency allocation	Content regulation	
Luxembourg				
Mexico		<i>Secretaria de Comunicaciones y transportes, COFETEL</i>	<i>La Comision Federal de Telecomunicaciones</i>	<i>Secretaria de gobernacion</i>
Netherlands	n.a.	Ministry of Transport, Media Authority, OPTA	Ministry of Transport	Ministry of Education, Culture & Science, Media Authority
New Zealand	Ministry of Economic Development	No specific broadcasting licence is required	Ministry of Economic Development	Broadcasting Standards Authority
Norway	Royal Norwegian Ministry of Cultural Affairs, Mass Media Authority, Norwegian Posts and Telecommunications Authority	Royal Norwegian Ministry of Cultural Affairs, Mass Media Authority, Norwegian Posts and Telecommunications Authority	Norwegian Posts and Telecommunications Authority	Royal Norwegian Ministry of Cultural Affairs, Mass Media Authority
Poland		National Broadcasting Council	Ministry of Posts and Telecom	National Broadcasting Council
Portugal	Secretary of State for the Mass Media (SECS), Ministry of Culture, Institute of Cinema, Audiovisual and Multimedia (ICAM)	<i>Alta Autoridade para a Comunicacao</i>	<i>Instituto das Comunicacoes de Portugal</i> (ICP)	<i>Alta Autoridade para a Comunicacao</i>
Spain	n.a.	Ministry of Science and Technology; <i>Comisión Nacional del Mercado de las Telecomunicaciones</i> (CMT)	CMT	CMT Autonomous Communities
Sweden	n.a.	Ministry of Culture, The Radio and TV Authority	The National Post and Telecom Agency	The Swedish Broadcasting Commission

Table1. Broadcasting administration and regulation in the OECD area
(cont'd)

Country	Audiovisual Policy		Regulation	
		Carriage regulation	Frequency allocation	Content regulation
Switzerland	Federal Council, DETEC	Federal Council, Department of the Environment, Transport, Energy and Communications (DETEC), Federal Office for Communications (OFCOM)	OFCOM	Federal Council, DETEC, OFCOM
Turkey	Ministry of Culture, Public TV and Radio Broadcasting Organisation	Radio and Television Supreme Council (RTUK) Telecommunications Council	Communications Council	RTUK
United Kingdom	Department of Culture, Media and Sport (DCMS)	DTI Independent Television Commission (ITC)	Department of Trade and Industry (DTI); Radio Communications Agency	Independent Television Commission (ITC)
United States		Federal Communications Commission (FCC)	FCC	FCC

Note: 1) Response from Belgium represents the French-speaking community.

Source: OECD.

Table 2. Definition of 'broadcasting' in OECD countries

Country	Definition of 'broadcasting'
Australia	Service that delivers television and radio programmes to people having equipment appropriate for receiving that service, whether the delivery uses the radio frequency spectrum, cable, optical fiber, satellite or any other means or a combination of those means.
Austria	Provision and distribution to the public of performances of all kinds - in words, sound and picture - using electrical waves without interconnecting wires, or by means of a conductor as well as by operation of technical equipment fulfilling this function.
Belgium ¹	A radio communications service whose programmes are intended to be received directly by the public in general or by a portion thereof. This service may comprise radio, television or other sorts of programmes.
Canada	Any transmission of programmes, whether or not encrypted, by radio waves or other means of telecommunication for reception by the public by means of broadcasting receiving apparatus.
Czech Republic	Diffusion of programmes or picture and sound information by transmitters, cable, satellites and other means intended to be received by the public.
Denmark	Not defined.
Finland	Initial transmission or provision by wire or over the air, including that by satellite, in unencoded or encoded form of television or sound radio programmes intended for reception by the public.
France	Audio-visual communication is defined as the transmission of text, sounds, and images of all types transmitted by telecommunications and not having a characteristic of private correspondence.
Germany	Production and dissemination of performances of all kinds in word, sound and picture using electromagnetic oscillations without a connecting line or along or by means of a line. The concept includes performances which are disseminated in encrypted form or for which a certain charge is made for reception.
Greece	n.a.
Hungary	Regular provision of television and radio broadcasts bearing permanent titles/names, during the broadcasting time published in advance, through the channels of any broadcast dissemination system as identified and made public, for anyone who operates a suitable operating apparatus.
Iceland	
Ireland	
Italy	Initial transmission of radio-television programmes to the public by wire or over-the-air including that by satellite, in clear and encoded form.
Japan	Transmission of radio communications intended to be received directly by the general public.
Korea	Transmission of the broadcast programmes which are planned, produced and scheduled to the public by means of telecommunication facilities via cable, satellite as well as terrestrial radio wave.
Luxembourg	
Mexico	All transmission of radio and television signals that can be freely received by the general public and that provide a public service that fulfils a social function.
Netherlands	Everything connected with the preparation, compilation, execution and transmission of public programmes which are intended for broadcast.
New Zealand	Any transmission of programmes, whether or not encrypted, by radio waves or other means of telecommunication for reception by the public by means of broadcasting receiving apparatus.

**Table 2. Definition of 'broadcasting' in OECD countries
(cont'd)**

Country	Definition of 'broadcasting'
Norway	Transmission of speech, music, images and the like by radio waves or cable, intended to be received directly by the general public within geographically delimited areas.
Poland	
Portugal	<p>Television broadcasting: transmission, encoded or not, of non permanent images and sounds by means of electromagnetic waves or any other appropriate medium, whether through air or through cables, that is intended to be received by the public.</p> <p>Radio broadcasting: unilateral transmission of sound communications, by means of radio electric waves or any other suitable medium, intended to be received by the general public.</p>
Spain	Primary broadcasting, via cable, terrestrial means or satellite of encrypted or unencrypted television programmes for the general public.
Sweden	Transmission of sound radio and television programmes directed to the public and intended for reception using technical aids.
Switzerland	Transmission by means of telecommunications technology of programmes for the general public.
Turkey	Service that delivers television and radio programmes to be received by the public, whether the delivery uses the radio frequency spectrum, cable, optical fibre, satellite or any other means or a combination of those means.
United Kingdom	In general, a service consisting in broadcasting of television or radio programmes for general reception in, or an area in, the United Kingdom.
United States	The dissemination of radio communications intended to be received by the public, directly or by the intermediary of relay stations.

Note: 1) Response from Belgium represents the French-speaking Community.

Source: OECD.

Table 3 . Regulatory treatment of 'Webcasting service' in OECD countries

Country	Detail of regulatory treatment
Australia	Audio and video streaming over the Internet outside of the broadcasting services band are not broadcasting services.
Austria	Whether such services are covered by regulation needs to be decided if challenged.
Belgium ¹	Current regulations do not cover the provisions of audio or video services on switched networks such as the Internet. Nonetheless, proposals are being formulated to make the necessary adjustments to current regulations.
Canada	A broadcasting service as defined in the Broadcasting Act distributed on the Internet is exempted from regulation.
Czech Republic	No specific legislation at present.
Denmark	Defined and treated as telecommunications services.
Finland	n.a.
France	Either as for broadcasting if these services provide content to the public, or as for telecommunications if the services consist of private communications.
Germany	The agreement between the <i>Länder</i> on media services adopted in 1997 stipulates that media services, unlike broadcasting, do not require prior authorisation.
Greece	n.a.
Hungary	n.a.
Iceland	
Ireland	No regulation at this time.
Italy	Currently not regulated with specific provisions.
Japan	Broadcasting means transmission of radio communication intended to be received directly by the general public, and telecommunications consist of private communications.
Korea	The Korean Broadcasting Commission can deliberate on the content of Internet broadcasting. A <i>laissez-faire</i> stance has been adopted to date.
Luxembourg	
Mexico	
Netherlands	Defined and treated as telecommunications services.
New Zealand	It is likely that Webcasting would be treated as broadcasting services as far as content is concerned.
Norway	The same regulation applies to broadcasting services provided over the Internet as other broadcasting services
Poland	Position has still to be clarified.
Portugal	Would need to be considered on a case-by-case basis.

**Table 3. Regulatory treatment of 'Webcasting service' in OECD countries
(cont'd)**

Country	Detail of regulatory treatment
Spain	No specific legislation at present.
Sweden	"Real-time" (live) broadcasting over the Internet would probably be defined and treated as cable broadcasting. On the other hand, presenting audio or video files for downloading on a Web site would probably not be considered as "broadcasting" under the present legislation.
Switzerland	At present, such services are not considered as broadcasting. Consumer attitudes to this type of service and the quality offered by the Internet do not yet warrant considering it as a broadcasting medium.
Turkey	There is no regulation of such services.
United Kingdom	The ITC and the Radio Authority have not sought or found it necessary to interfere with such services in practice.
United States	The FCC does not regulate services delivered by the Internet or the World Wide Web.

Note: 1) Response from Belgium represents the French-speaking community.

Source: OECD Communications Outlook 2001.

Table 4. 'Must carry' rules in the OECD area

Country	Restricted	Detail of restriction
Australia	No	
Austria	Yes	Cable television operators must carry programmes of the public broadcaster. Additionally, they may be forced by the regulatory authority, on request of a programme supplier, to carry a specific program under special conditions.
Belgium ¹	Yes	Cable television operators must carry programmes of the public broadcaster; private television stations; pay TV stations; local and community television stations; international broadcasters designated by the government and in which the public broadcaster is a participant.
Canada	Yes	Cable television operators and wireless system operators must carry programmes of the public broadcaster, local and regional stations, and educational programmes. Satellite operators must carry programmes of the public broadcaster and of at least one affiliate of each of the national television networks licenced on a national basis. Additionally, all operators are required to carry all Canadian specialty and pay television services appropriate for their markets.
Czech Republic	Yes	Cable television operators must carry programmes of the public broadcaster and other broadcasters whose services are receivable by standard equipment in the cable operator's service area.
Denmark	Yes	Cable television operators must carry programmes of the public broadcaster. Additionally, if a cable system has more than 8 channels, the operator must provide one channel for local television.
Finland	Yes	Cable television operators must carry programmes of the public broadcaster and other national broadcasters intended to be received in the territory of the cable operator.
France	Yes	The Law of 1986 permits the regulatory authority to require cable television operators to simulcast terrestrial broadcasting which is normally received in the area.
Germany	Yes	In analogue cable transmission, "must carry" regulations are set by regional media authorities.
Greece	n.a.	
Hungary	Yes	Cable television operators must carry programmes of the public broadcaster.
Iceland		
Ireland		Cable operators must carry the channels of the national broadcaster and TV3, the private broadcaster with national coverage.
Italy	Yes	Cable television and satellite operators must provide certain capacity by way of licence.
Japan	Yes	Cable television operators must carry programmes of all terrestrial television broadcasters of the area intact and simultaneously, subject to the regulatory authority's designation.
Korea	Yes	Cable system operators, relay cable operators and satellite broadcasters, must simultaneously carry programmes of terrestrial broadcasters which the Presidential Decree designates. Cable systems operators and satellite broadcasters must also provide three or more channels for public and missionary work.

**Table 4. 'Must carry' rules in the OECD area
(cont'd)**

Country	Restricted	Detail of restriction
Luxembourg		
Mexico	No	
Netherlands	Yes	Cable television operators "must carry" programmes of national, regional and local broadcasters in the region where the cable network is located; and Dutch language programmes of the Belgian public broadcasters.
New Zealand	No	
Norway	Yes	Cable television operators must carry programmes of the public broadcaster, other national broadcasters and local public television stations.
Poland	Yes	Cable operators are required to give priority to national and regional public channels and to private local channels.
Portugal	Yes	Cable television operators must carry programmes of the public broadcaster. Additionally, they must reserve three channels of their network for the distribution of terrestrial regional or local television channels, and video or radio signals from non-profit entities for research, educational and cultural purposes.
Spain	Yes	Cable television operators must carry programmes of national broadcasters, both public and private; autonomous community television stations; and local television stations. Additionally, cable television and satellite operators are required to reserve 40% of their network for independent productions.
Sweden	Yes	Cable television operators must carry programmes of national broadcasters, both public and private, and one local television service designated by the regulatory authority. Digital cable networks must carry 3 digital PSB channels and one private broadcaster (TV4).
Switzerland	Yes	Broadcasters unable to negotiate transmission of a programme with a cable network may appeal to OFCOM, which may compel the cable operator to broadcast the programme subject to certain conditions (including the requirement for the broadcaster to refund the necessary expenses to the cable operator).
Turkey	No	
United Kingdom	Yes	Cable television operators who hold licences issued before the Broadcasting Act 1990 must carry programmes of all national broadcasting services. Subject to the Broadcasting Act 1996, digital cable television operators are required to carry programmes of all national and regional terrestrial television services.
United States	Yes	Cable systems must carry: <ul style="list-style-type: none"> - Each local commercial television station in the same geographic market which elects to adopt a "must carry" status (cable systems must set aside up to one-third of channel capacity to meet their "must carry" obligations). - At least one local non-commercial educational station.

Note: 1) Represents the French-speaking community.

Source: OECD.

Table 5. Major domestic and local content requirements in the OECD area

Country	Terrestrial television	Cable television	Direct broadcast satellite
Australia	At least 55% of the annual broadcasting time between 6a.m. to midnight must be Australian programmes.	At least 10% of annual programme expenditure on pay TV drama services must be on new eligible (Australian) drama programmes.	- Same requirements as their terrestrial counterparts for free to air services. - Same requirements as cable television services for subscription services.
Austria	no		
Belgium ¹	- Public broadcasters must broadcast an average of 7 hours per day of own or co-produced programmes over the year. Additionally, at least 33% of the programmes must be works by French-speaking professionals. - Private broadcasters must broadcast at least 20% of own programmes. - Pay television broadcasters must broadcast at least 5% of own programmes. - Local and community broadcasters must produce at least 33% of own programmes.		
Canada	- At least 60% of CBC's entire broadcasting time must be Canadian programmes. - For private broadcasters, at least 60% of the entire broadcasting time, and at least 50% of their broadcasting time between 6p.m. to midnight must be Canadian programmes.	- Cable television and satellite operators must ensure that the majority of the broadcasting services are devoted to the distribution of Canadian programming services. - Broadcasting distribution undertakings with more than 2 000 subscribers must contribute at least 5% of their gross annual broadcasting revenues to the creation and presentation of Canadian programming.	
Czech Republic	Broadcasting content is subject to Act No. 231/2001 Coll. On Broadcasting. Broadcasting operators have the obligation to reserve more than half of total broadcasting (broadcast performances) for European works (programmes).		
Denmark	Minimum of one hour per day on programmes based on the local community. Significant element of other programmes are in the Danish language or produced for the Danish public.		
Finland	As specified in the Directive of the European Commission		n.a.
France	For films and audiovisual programmes, at least 60% must be European programmes and at least 40% must be original French language programmes. Terrestrial broadcasters must invest at least 15% of their revenue in original French language programmes; 3% in European programmes; and 2.5% in original French language films.	The same broadcasting requirements are imposed on cable television operators except for the first three years of service. No obligations are imposed regarding investment.	
Germany	As specified in the Directive of the European Commission.		
Greece	European works should account for at least 50% of transmission time.		
Hungary	At least 20% of the annual broadcasting time of national and regional broadcasters must be Hungarian programmes.	n.a.	n.a.
Iceland			
Ireland	European works should account for at least half of transmission time.		

**Table 5 . Major domestic and local content requirements in the OECD area
(cont'd)**

Country	Terrestrial television	Cable television	Direct broadcast satellite
Italy	- Each national broadcaster must devote more than half of monthly programming time (including prime time) to European works	no	no
Japan	no		
Korea	At least 80% of monthly broadcasting time must be Korean programmes. Individual quotas also apply for film, animation and popular song genres.	At least 50% of monthly broadcasting time must be Korean programmes. Individual quotas also apply for film, animation and popular song genres.	
Luxembourg			
Mexico	no	80% of daily programming must be in the Spanish language (originally produced, sub-titled or dubbed). In addition, for those companies that include advertising in their programmes, 7-8% of their daily programming must be produced in Mexico	
Netherlands	At least 50% of the broadcasting time must be individual programmes which qualify as European works. At least 40% of the broadcasting time must be individual programmes in Dutch or Frisian.		
New Zealand	no		
Norway	European programmes should account for at least 50% of transmission time (excluding news, sports and entertainment programmes); 10% should be produced by independent producers. 50% of programming on local radio must be locally produced.	no	no
Poland	The European quota should not fall below 50%, including a Polish quota of between 35% and 60% depending on the type of broadcaster.		
Portugal	European programmes should account for at least 50% of transmission time (excluding news, sports and entertainment programmes); For national broadcasters, at least 50% of the broadcasting time must be Portuguese programmes. Additionally, at least 10% of the broadcasting time must be European programmes from independent producers.		
Spain	As specified in the Directive of the European Commission.		

**Table 5. Major domestic and local content requirements in the OECD area
(cont'd)**

Country	Terrestrial television	Cable television	Direct broadcast satellite
Sweden	A significant extent of the broadcasting time must be Swedish programmes.	- At least 50% of the annual broadcasting time must be European programmes. - At least 10% of the annual broadcasting time or at least 10% of the programming budget must be devoted to European programmes produced by independent producers.	
Switzerland	Specific obligations may be negotiated on a case-by-case basis in the licences granted to broadcasters, taking into consideration national, regional and cultural identity.		
Turkey	n.a.	n.a.	n.a.
United Kingdom	- For Channel 3 and 5: At least 25% of programming in specific categories must be independent programmes. - For Channel 3 regional: At least 65% of the annual broadcasting time must be Channel 3-origin programmes. Additionally, at least 80% of regional programming must be programmes of regional origin.	At least 10% of the programming in specific categories must be independent programmes.	
United States	No		

Note:1) Represents the French-speaking community.

Source: OECD.

Table 6. Specific cross-sector ownership restrictions in OECD countries

Country	Restricted	Detail of restriction
Australia	Yes	Those controlling commercial television broadcasting licences or public broadcasters are not permitted to control data caster transmitter licences. There are also television/radio/newspaper cross ownership restrictions; a restriction on one television or two radio licences per market; the 'reach rule' restricting a television network from servicing more than 75% of the population.
Austria	Yes	ORF, the public broadcaster, is not allowed to invest in cable television operators.
Belgium ¹	Yes	<ul style="list-style-type: none"> - Cable operators are not allowed to provide terrestrial television services. Cable operators are not allowed to own more than 24% of the shares of a private television station or of a local or community television station. Nor may they manage or have more than a one-third share in the management body of such television stations. - Terrestrial television companies are not allowed to provide cable television infrastructure and services.
Canada ²	No	
Czech Republic	No	
Denmark	No	
Finland	No	
France	Yes	<ul style="list-style-type: none"> - Terrestrial television companies licensed to provide services to an area having a population of 4 million or more are not allowed to provide cable television infrastructures. - Cable television operators licensed to provide cable television infrastructures covering an area having a population of 6 million or more are not allowed to provide terrestrial television services.
Germany	No	
Greece	Yes	<p>A company which holds a licence for the provision of a pay TV or pay radio service cannot hold a licence for a free to air service.</p> <p>A company can hold only one licence for pay TV with the same mode of transmission (terrestrial, cable, satellite) and one more licence for a pay TV service with a different mode of transmission.</p>
Hungary	Yes	<ul style="list-style-type: none"> - Cable television operators are not allowed to provide or invest in terrestrial television companies.
Iceland		
Ireland	No	
Italy	Yes	<ul style="list-style-type: none"> - The Communications Act specifies three separate markets: terrestrial TV; radio; and cable and satellite. For each of these markets, no operator may collect more than 30% of the financial resources of that market. A company may operate in two or three markets, provided it does not exceed the 30% limit in any one market.
Japan	Yes	<ul style="list-style-type: none"> - Terrestrial television companies may be permitted to establish cable television infrastructures in special cases.
Korea	Yes	<ul style="list-style-type: none"> - Cross ownership among terrestrial broadcasters and cable systems operators is not permitted. - A terrestrial broadcaster can not own more than 33% of the shares of a satellite operator. - A satellite broadcaster can not own more than 33% of the shares of a cable systems operator. - Restrictions on cross ownership among cable network operators, cable systems operators and program providers.
Luxembourg	No	
Mexico	No	
Netherlands	No	
New Zealand	No	
Norway	Yes	The Media Ownership Authority may intervene against the acquisition of an ownership interest in a newspaper or broadcasting enterprise if the person acquiring the interest, alone or in co-operation with others, has (or gains) a significant ownership position in the national, regional or local media market, and this is contrary to the objectives of the Act.
Poland		
Portugal	No	

**Table 6. Specific cross-sector ownership restrictions in OECD countries
(cont'd)**

Country	Restricted	Detail of restriction
Spain	yes	<ul style="list-style-type: none"> - Private terrestrial television companies are not allowed to provide cable television infrastructure. - Private terrestrial television companies also providing cable television services are not allowed to hold more than one licence. - Private terrestrial television companies also providing telecommunications services are not allowed to hold more than one licence.
Sweden	no	
Switzerland	no	
Turkey	no	
United Kingdom	yes	<ul style="list-style-type: none"> - BBC is specifically prevented from holding a licence to provide cable television services. - The broadcasting regulator is required to fully ensure that commercial television licensees do not obtain licences for cable television services. - The statutory ban preventing British Telecom and other public telecommunications operators from providing television through their telecommunications network was lifted in January 1999.
United States	yes	A cable system cannot carry the signal of any television broadcasting station which is owned, operated or controlled by the cable system and which overlaps the service area of the cable system.

Notes:

1. Response from Belgium represent the French-speaking community.
2. CRTC examines the issue on a case-by-case basis. Additionally, a telecommunication carrier wishing to provide cable television service must hold a structurally separate entity.

Source: OECD.

NOTES

- ¹ The discussion below concentrates on digital television although new opportunities may be arising from digital radio.
- ² An API is an interface to an operating system.
- ³ FCC, Ninth Annual Report on the Assessment of the Status of Competition in the Market for the Delivery of Video Programming, FCC 02-338, December 2002.
- ⁴ OECD, Regulation and Competition Issues in Broadcasting in the light of Convergence, DAF/CLP(99)1, Paris 1999.
- ⁵ Article 3-(6).
- ⁶ Article 2.
- ⁷ Refer to Canadian Broadcasting Act 1991.