

Study for the European Commission

**Public Policy Issues Arising from
Telecommunications and
Audiovisual Convergence**

Summary Report

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Introduction: A new environment for new services

This summary report is about achieving the European information society in practice. It is about allowing old and new industries the freedom to harness the technological developments that are blurring the boundaries between the provision of telecommunications and audiovisual services. It is about ensuring that the convergence of these services - and potentially the companies that provide them - can occur in a manner that is beneficial to the European Union, its citizens, and its industries. The report proposes an integrated and coherent framework that will allow the applications and infrastructures of the information society to establish themselves and flourish.

This blurring of boundaries calls into question the current regulatory distinctions between telecommunications and broadcasting, and calls for a fresh approach to public policy relating to the converged environment. Without such a radical reappraisal we risk stifling innovation, discouraging investment, choking new enterprise, and undermining established players. We believe that maintaining current regulatory regimes without modification, or worse still, applying current approaches to new industries and services, will damage the prospects of a vibrant information society.

In order to avoid these dangers, we believe that:

- the European Union should define a regulatory vision for the future that supports market-led developments;
- the application of this vision should be based primarily on competition law and should minimise regulatory intervention and avoid market distortions;
- the vision should be applied to new services from their outset;
- the Union should develop practical transition arrangements that progressively migrate current inconsistent regimes to the new vision.

Without appreciation of an appropriate long-term goal, regulatory change may continue to occur in an *ad hoc* manner. This perpetuates current uncertainties for users and suppliers alike. This report describes how we see that regulatory vision and recommends broad lines of policy that the Commission should pursue.

We also highlight key steps that are a necessary part of any transition towards this future vision. Achieving a smooth and transparent change to the new paradigm will not be an easy task for regulators, who must have due regard to substantial practical constraints. Many long-entrenched views will need challenging during this process.

The recommendations stop short of being conclusive; their purpose is to stimulate debate and to initiate a broad consultative process among interested parties. We cannot overestimate the importance of this debate for the Union. The cost of doing nothing, or of reacting to events as they occur, is likely to be significant.

This summary report presents the key findings of a study undertaken on behalf of the European Commission under contract number 70246. A full report, together with supporting appendices, provides a much more detailed presentation and analysis; it should be referred to for further clarification of the overview presented in this document.

In conducting our study, we were assisted by expert advisers who have expertise in EU public policy and implementation issues, economics and regulation, telecommunications and the European audiovisual industry. We wish to express our thanks to: George Yarrow, John Howkins and Joan Majó i Cruzate for their contribution. We would also like to thank Ashurst Morris Crisp for helping us with our work. Particular thanks are due to Tony Ghee, Catherine West and Alison Slack. In addition, we would also like to thank members of DG XIII for their valuable inputs throughout the course of the study.

During our study we conducted a number of interviews. We would like to thank everyone who participated in this programme.

The views expressed in this report are those of the study team and are not necessarily those of the European Commission or of the individuals consulted in our study. All the information has been assembled in good faith and to the best of the ability of the study team. Neither KPMG, Ashurst Morris Crisp, our expert advisers, nor the Commission accepts any responsibility for the accuracy or completeness of the information contained in this report. The information and views do not constitute commercial advice or a legal opinion and should not be acted upon without further professional advice. KPMG, Ashurst Morris Crisp, and our expert advisers accept no responsibility for loss arising from decisions based on this study.

Chapter 1: Realising the information society

"The information revolution is subject to much hyperbole ... what is far from certain - and this is where the most extravagant claims are made - is the speed or manner of this revolution."

The challenge of the information society

The information revolution is subject to much hyperbole. People argue that new technologies will facilitate new methods of accessing and using information and that this will revolutionise the way we do business, enjoy ourselves and study for new skills. There is undoubted truth in this assertion. However, what is far from certain - and this is where the most extravagant claims are made - is the speed or manner of this revolution.

It is consumers who use information, communications and entertainment services, and consumers have many natural animosities to change. Industries that aim to meet new opportunities must be driven by the realities of the market place. Corporations too have their own culture and cannot be expected to change overnight. There will be no quantum leap towards the new environment; instead developments will be gradual and progressive.

"This report is about defining public policy that reflects the co-existence of the old and the new."

Thus, there will be features of the information society that will develop before others. This report is about defining public policy that reflects the co-existence of the old and the new, but does so with a clear view of the goal towards which we are travelling.

The role and reality of convergence

Convergence is a term that means different things to different people. We use the following definition:

"Convergence is an on-going process which entails the coming together of the following:

- *content from the audiovisual and publishing industries;*
- *potentially separate physical infrastructures (such as those supporting broadcast television or telecommunications services) able to carry similar sorts of information at increasingly lower costs;*
- *the interactive information storage and processing capabilities of the computer world;*
- *the ubiquity, improving functionality and ease of use of consumer electronics."*

An important consequence of convergence is the transition from a situation of scarcity in the delivery of services to one of abundance. This is already occurring in broadcast television, where many new channels are planned. Such abundance will reinforce an increasing transactional element in the consumption of audiovisual services, enabling them to be tailored to individual needs. This is in sharp contrast to traditional broadcasting.

Although driven in part by developments in information technology, this study primarily addresses policy in the audiovisual and telecommunications sectors. Unlike the computer

industry, which has evolved in a free-market, the audiovisual and telecommunications sectors are significantly different, both having been heavily regulated.

Convergence between the audiovisual and telecommunications fields will change the way we use information, making it more accessible to a wider audience. As such, this process will help achieve the information society. However, just as there is doubt about the speed and manner of the information revolution, so there is uncertainty, about the speed and manner of convergence itself. We consider these concerns under three headings.

Technology

Convergence of technologies is proven in the laboratory. Audiovisual and telecommunications industries increasingly rely on the digital representation of information. Once in digital format the same systems can manipulate and transfer any signal.

Substantial further investment is required to convert laboratory success into commercial services that can then be deployed in the real world. This real world includes markedly different starting points that will impact the speed of change. For example, cable television infrastructure is widespread in the Netherlands and practically non-existent in Portugal. Technological change also means that there will be many more options for the delivery of audiovisual services. However, demand for services delivered by the new technologies has yet to be demonstrated, and this means volume production - a prerequisite for lower component prices - is some way off. To date, revenues appear insufficient to justify the large and risky investment necessary to achieve full convergence.

Nevertheless, the trends are clear and early indicators of the future exist. The Internet is a reality and increasingly supports and conveys information in different formats. To many it is a narrowband realisation of the future; a future that will encompass increased processing power and speed of information transfer.

Convergence is enabled by current technological developments, but certain commercial and regulatory factors have still to be resolved before new technology is widely adopted.

Markets and Services

We have already hinted at slow take-up rates by the market for new services. There is a natural life-cycle in the adoption of new products, and we can characterise many new information services as being in the early stages of market development. Business to business e-mail is arguably becoming mainstream - at least for large companies. However, the situation is less certain in consumer markets. Even rapid Internet growth is restricted to the limited percentage of the population already owning high specification computers.

"We believe that the trend towards a transactional world where the consumer is in control of his or her purchasing behaviour and expenditure is a natural and inevitable process for all new services."

Audiovisual services offered to consumers cannot yet be considered a stimulus of information society developments. Conservatism in this area is general. Irrespective of whether news, general entertainment, cultural or educational programming is being provided, consumers have limited individual say in what is made available to them or what

price they pay. The marked variation between different markets in the propensity to consume audiovisual services further limits exploitation strategies.

Despite this negative picture, there is evidence of change. Some consumers are subscribing to 'premium' audiovisual products and are open to new delivery mechanisms. Such high value products are not purely substitutions and do appear to grow the overall market.

Convergence is a long way from being a consumer-driven phenomenon. However, we believe that the trend towards a transactional world, where the consumer is in control of his or her purchasing behaviour and expenditure, is a natural and inevitable process for all new services. The change may not occur quickly but it will occur.

We believe that change will bring great benefit to users. Some new services will fail, others will be very successful. One certainty, however, does exist. An environment is needed that supports innovative change.

Economics and Industry Structure

To date, there is little convergence between the telecommunications and audiovisual industries. There have been some early attempts in, for example, the USA, but many companies in Europe are observing rather than directing change.

"Industrial convergence is unclear and may not happen in a predictable manner... change, when it happens, will quickly develop its own momentum and will be difficult to stop or redirect."

There is considerable uncertainty about the future. Many, especially in the traditional audiovisual sector, are doubtful whether industrial convergence will occur, or is even necessary. Arguments centre on the lack of synergies between service areas. Variations in opinions across national markets and sector

boundaries are pronounced. Observations include:

- the IT industry has much to gain from convergence. Provided it gets its product planning right it has little to lose. It is already a highly dynamic sector and has already adopted new distribution strategies;
- the telecommunications industry is undergoing considerable change. In particular, vertical structures are being broken and competition is being introduced. Operators are keen to increase network usage and will drive convergence to achieve this end. They are concerned to keep usage charges high and maintain margins. Operators are also seeking to maintain revenue growth in the face of increasing competition by offering higher-value services;
- the audiovisual industry is responding to convergence through, for example, alliance, formation. However, it has not been subject to the same pressures to change as the IT and telecommunications sectors. Indeed, for the consumer there has been no fundamental quality improvements in broadcast television since the introduction of colour in the 1960s. Within parts of the sector, there is resistance to change including a desire to preserve vertically integrated structures. There is uncertainty about how best to respond to the new opportunities being created;
- public service broadcasting exists to support public interest obligations. Potentially, convergence will have a profound impact on this sector and organisations need to prepare for what may be radical change. Appropriate responses remain uncertain.

Industrial convergence is unclear and may not happen predictably, although some encroachment across traditional boundaries is already happening. For example, cable television companies are providing or planning to provide telephone services. The difficulty facing organisations developing their future strategy is that changes in formerly separate industries will have a consequential effect in their own areas. Change, when it happens, will develop its own momentum and may be difficult to stop or redirect. The Internet demonstrates how quickly things can change.

Chapter 2: Challenges to current policy

"Extending current broadcasting regulation to a transactional world where there are multiple channels, switched services, transfrontier service provision, and increased consumer choice will ... lead to inconsistencies and confusion."

Broadcasting policy today

Today's regime for regulating broadcasting is focused to a large extent on achieving public interest objectives. Broadcasting is perceived to be highly influential and this, coupled with the reliance on scarce spectrum resources, has led to substantial government intervention. Furthermore, current broadcasting structures mean that most consumers have limited choice - they have access to only a small fraction of the material potentially available. Member States have, not only used operating licence controls to ensure diversity and quality and to protect public interests, but have also established public authorities to monitor compliance.

"Protection of public broadcasters is often an implicit feature of policy."

Public interests encompass a wide range of topics such as promotion of culture, pluralism, consumer protection and universal service. Such obligations are often imposed on public sector broadcasters who, in return, are granted selected benefits. These may include: free access to scarce resources such as spectrum, government funding, or monopoly rights to advertising revenues. Protection of public broadcasters is often an implicit feature of policy.

Broadcasting regulation is applied at a national or, for some countries, a regional level resulting in considerably different approaches by different Member States. The *Television without Frontiers Directive* begins to address a number of cross-border concerns. However, broadcasting continues to have a largely national focus and differences in regulation both between and within Member States are sufficiently great for us to consider them a barrier to market entry by new operators and, if maintained, will be a barrier to the realisation of a single market in new information services.

Telecommunications policy today

Telecommunications policy has developed along a substantially different path. Like broadcasting, there are aspects of the telecommunications services that support public interest objectives. These objectives have both a social and a commercial dimension. In a social context universal access to telecommunications services is a key ambition. Commercial concerns primarily address the vital role that the sector has in supporting other parts of the economy.

"The traditional regulatory approach has been to grant telecommunications operators protected monopoly rights within a highly regulated framework."

Given these public interest concerns and the complexity and cost of developing a cohesive telecommunications infrastructure, the traditional regulatory approach has been to grant telecommunications operators protected monopoly rights within a highly regulated framework. This model has now been surpassed - a process that was

recognised and encouraged by EU telecommunications policy over the last decade.

Nowadays, the telecommunications value chain is broken down into functionally discrete units and competition is encouraged at all levels and will be required in most markets by 1998. Current regulation does not preclude vertical integration, but it does require there to be no discrimination across functional boundaries. The potential benefits of liberalisation of telecommunications are high although they remain to be seen across all Member States.

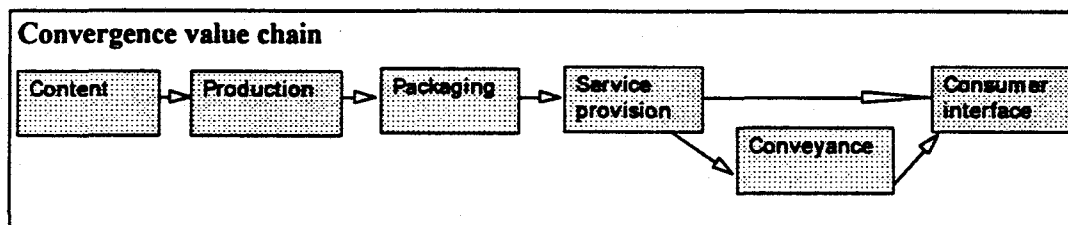
An increasing emphasis for telecommunications policy is regulation aimed at promoting economic efficiency within the sector by ensuring open network interfaces, adequate interconnection, and cost-based tariffing. There is also a recognition that, since existing players have the potential to abuse their position of dominance, interim measures are needed to help develop a more openly competitive environment.

A new supply paradigm and a new regulation

Convergence will blur traditional boundaries. Ultimately, there will be essentially no differences between broadcasting and telecommunications. The highly regulated approach to broadcasting based on scarcity will clash with the more open approach applied in the information technology and publishing markets, and, as a result of more recent changes, in the telecommunications sector.

"Neither existing broadcasting nor telecommunications regulation can be applied unmodified to the new industry or services."

Convergence is also about the development of greater choice in the manner in which new services are consumed - a move towards what we have termed the transaction-based model. To realise this change a new value chain (see figure below) is likely to develop. Major industry restructuring may, as was suggested in Chapter 1, take time to achieve, but some changes are already happening. Telecommunications companies need increasingly to be aware of content acquisition and management. For the audiovisual industry the key change will be the need to manage both the customer's interface to the service and the wider choice of distribution methods. Currently, the service is made available and the consumer tunes in to the selected channel from the limited number that are available. For most terrestrial broadcasters, consumer billing is not a concern. Even for many cable companies flat-rate billing is still common. In the future, sophisticated billing and customer access systems will be needed.



The new value chain does not imply that the same organisation will work across all areas, or that no organisations will work in more than one area. We believe that a mixed approach will develop. We also foresee increasing horizontal integration across markets. Organisations will work with each other either formally in alliances and joint ventures or less formally through co-operative deals.

What is the impact of this new supply model on regulation? We believe that neither existing broadcasting nor telecommunications regulation can be applied unmodified to the new industry or its services. Consistency requires a new, common framework.

In what circumstances should this framework be applied? The answer, in our view, is where a transactional element is introduced into an audiovisual service or where audiovisual content services are added to traditional point-to-point telecommunications offerings. This begs the question as to whether the new regulation is already too late. Potentially it is - an assertion demonstrated by the current confusion regarding the regulation of near-video-on-demand services as opposed to true video-on-demand, or by the hurried moves in many countries towards regulating the Internet.

Extending current broadcasting regulation to a transactional world where there are multiple channels, switched services, transfrontier service provision, and increased consumer choice will exacerbate problems. Such an approach risks institutionalising barriers to entry. It will also lead to increased inconsistencies and confusion. These are already beginning to become apparent between Member States and between telecommunications and broadcasting regulation within Member States.

There will be challenges to traditional operators from non-traditional sources including, for example, from the largely unregulated information technology industry. The Internet will challenge the stable worlds of the broadcasters and publishers as its capacity increases. As yet the challenge is remote and small scale, but momentum is building. If this commercial reality is not factored into policy considerations, broadcasters may find themselves fettered rather than protected by maintenance of current regulation, since it will prevent them from realising new opportunities and not allow them to face up to new competitive threats.

The impact of failure

"Promotion of convergence could result in a revenue increase of 40% by 2005."

There are many challenges that must be overcome before convergence becomes a reality. Failure to change will have a number of potentially serious consequences for Europe. It will slow the development of the information society and could jeopardise our ability to compete in the increasingly global market for new services. A sound regulatory framework will

not ensure success - however a fragmented and confused framework will have a negative impact.

An economic model has been developed by KPMG. It suggests that, on the basis of reasonable assumptions, promotion of convergence could result in a revenue increase of 40% by 2005 when compared to the maintenance of the *status quo*. It also shows that new services could account for over 60% of total revenues for information, communications and entertainment services. These figures have been derived for France, Germany, Italy, Netherlands and the UK. They are highly dependent on the assumptions used and should be considered merely indicative as there is a lot more than regulation that will determine whether or not this potential is achieved. However, this analysis does show the magnitude of loss that could result from a mis-directed policy.

Chapter 3: Guidelines for new regulation

"Once we are clear of the reason why regulation is needed, we can then define for each regulatory objective the method by which it will be achieved."

The need for regulation

We concluded in the previous chapter that neither the current audiovisual nor the telecommunications regulatory frameworks are appropriate for the new transactional services or the industry that delivers them. But how can something better be defined? To help us answer this question it is worth recalling some principles for regulation.

The first question to ask is why regulation is needed. Two main reasons are usually given. Firstly, governments may wish to intervene because there is a perceived failure by the market to deliver an economically efficient outcome. Secondly, they may wish to ensure that public interests, such as cultural promotion or consumer protection, are achieved.

Once we are clear of the reason why regulation is needed, we can then define for each regulatory objective the method by which it should be achieved. This will include answering questions such as the following:

- to what services or organisations should regulation be applied?
- how can the regulatory objective be achieved, and what mechanisms (for example licensing conditions) should be used?
- who should be the body responsible for applying regulation?

Different policy objectives may be achieved in different ways, and actions will be targeted at different parts of the value chain. The regulatory framework should be clear about this.

In order to help set out a vision of how public policy should develop, we endorse the following guidelines. We believe policies should:

- specifically address an identified problem of concern and be focused on this problem;
- lead to only small secondary economic effects;
- have low enforcement and compliance costs.

Whilst these might appear obvious once stated, our appraisal of current public policy approaches suggests that such factors have not always driven intervention in the sectors under consideration.

Competition law versus regulation

Competition law is embodied in the Treaty of Rome and is an important element of government intervention to promote the efficient use of economic resources. In certain sectors, however, governments conclude that additional regulation is needed to take account of special circumstances. This has been the case in both the audiovisual and telecommunications sectors.

Competition law and regulation are applied differently. Competition law is applied retrospectively by a competent authority once a concern is raised. Regulation imposes

obligations on companies with the aim of preventing potential problems before they occur. We believe that regulation in any sector over and above competition law must be fully justified.

Convergence alters the basis of government intervention in the telecommunications and audiovisual sectors and changes the balance between competition law and regulation. A key reason, and this a point to which we will return in Chapter 4, is that there will be many more distribution channels open to service providers. Many of our key recommendations reflect this fundamental change in regulatory emphasis.

Regulation under convergence

While the discussion so far in this chapter is applicable to any industry, this study is concerned with applying such general principles to the services and industries that will result from convergence. We have to consider why regulation will be needed in the future and then consider the best approach to achieve these objectives. This should be done taking full regard of today's motivating forces. In particular, policy makers have to question:

- the underlying rationale for continuing some of the current public policy objectives;
- the practicality of maintaining the current policy;
- the suitability of current regulatory mechanisms for achieving new policy objectives.

The answers to these questions help define a suitable policy approach that will be applicable for the convergent world. The next chapter considers this analysis while Chapter 6 summarises our key recommendations for the future.

Transition towards the goal

"The problem faced by regulators is that the old and the new world will co-exist for many years to come."

The tendency has been to make incremental adjustments to existing regulatory frameworks. It is now time for a fundamental re-think of regulatory principles as a result of convergence.

Defining a regulatory framework for the future is only the first stage of a long process. The problem faced by regulators is that the old and the new world will co-exist for many years to come. New transactional services are currently only a small part of overall revenues for information, communications and entertainment services. They will gradually increase in significance while, at the same time, traditional broadcasting services will decline in importance.

The next step is, therefore, to define suitable transitional approaches that take today's disparate approaches into a common framework for the future environment. This is a stage of the process where particular attention to detail is needed. There are many practical constraints that limit the options for change, and these must all be factored into the equation.

The scope of our study excluded us from attempting to answer all these questions. However, we have defined a number of principles and made a number of 'top-level' recommendations. These are outlined in Chapter 7.

Chapter 4: Regulation supporting convergence

Characteristics of a convergent world

We cannot be prescriptive about how convergence will occur or the time scales over which it will happen. We do not know what services will be offered, what technology platforms will be used, or how industry will structure itself to provide these services.

Although we cannot predict the future with precision, this is not necessary for the development of a regulatory framework. Indeed, the best regulatory framework will support a range of development options. Our framework is therefore based on a set of broad implications of convergence. These are:

- there will be a transition from scarcity in distribution to abundance;
- there will be increased use of distribution networks;
- new and complex industry structures will emerge.

"The new transactional services will have much in common with the current publishing market."

From scarcity to abundance

Currently there are a limited number of television and radio channels available to broadcasters. Digitalisation and convergence will change this situation. The new transactional services will have much in common with the current publishing market. A key feature of this trend is that consumers will pay directly for what is consumed rather than today's situation where payment is largely indirect.

Other consequences of the removal of scarcity are as follows:

- along with greater consumer choice, there is likely to be an additional consumer expenditure on new services;
- there will be an expansion in the range of services;
- there will be much greater scope for price differentiation and targeting of services to specific users;
- globalisation - the cross-border trade in services - will increase;
- copyright, security and data protection will become more difficult to enforce and monitor;
- there is likely to be increased production - including more local content - to meet the new demand;

Use of networks

A proliferation of new services requiring large bandwidth will mean greater traffic volumes on networks. There will also be greater competition between network operators to attract traffic onto their networks. Operators will need to be increasingly efficient if they are to compete successfully.

As a result:

- network operators will be looking to exploit economies of scale and scope;
- there will be lower unit costs for conveyance services.

Industry structure

New and established operators will be seeking to exploit opportunities resulting from convergence. They will be looking to work within structures that best protect their interests. Some issues are as follows:

- companies will be seeking to establish a first mover advantage;
- they will look to maximise the value of their existing investment;
- vertically and horizontally integrated structures will emerge;
- because of high start-up costs, there will be imperfect competition in networks;
- universality of network or service coverage may not naturally occur.

We believe that the market should be left to develop unhindered, even though we cannot yet be certain that, left to its own devices, the market will produce an economically efficient or a socially desirable outcome. If an undesirable outcome becomes apparent it should be corrected once it is identified. Restrictions applied too early may stifle development. This matter is of concern during the transition phase and is discussed further below.

Regulatory Framework

The characteristics that we have just described provide the basis of a formal approach for considering the long term policy framework. Drawing on today's motivating forces, we have identified a number of regulatory objectives. As has already been mentioned, different objectives will apply to different parts of the value chain. In the following diagram we map some of the key objectives (which will be discussed below) onto the value chain presented in Chapter 2.

	Content			Service provision	Conveyance	Consumer interface
	Creation	Production	Packaging			
Economic Efficiency	Vertical integration					
	Exclusive rights to content					
	Interoperability and interconnection					
	Conditional access systems					
	Competition between networks					
	Affordability					
	IPR protection					
Public interest	Industrial and trade policy					
	Universality					
	Culture					
	Quality and diversity					
	Pluralism					
	Consumer protection: taste and decency, freedom of speech					
	Consumer protection: security, privacy and data protection					
Consumer protection: fraud, incitement and defamation						

In the following section we consider, in particular, how these regulatory objectives may change as a result of the characteristics of convergence outlined above. A much fuller analysis is presented in our main report - highlights only, of what is a very complex area, are given here.

Regulatory objectives - economic efficiency

General economic concerns

The table below discusses general economic objectives of vertical integration, interoperability and interconnection, conditional access systems, competition between networks, exclusive right to content, and affordability.

Definition	Economic efficiency is achieved when the prices paid for the services reflect the costs of providing the services. Two key reasons for economic inefficiencies are imperfect competition and externalities.
Application	<p>Under convergence, there are a number of areas where economic inefficiencies could arise (or governments may wish to intervene for equity reasons). These are as follows:</p> <p>Vertical integration: Vertical integration can encourage innovation, reduce transaction costs and stimulate start-up industries.</p> <p>A targeted approach to vertical integration must:</p> <ul style="list-style-type: none"> ■ focus on horizontal issues; ■ only address vertical issues where dominance is abused; ■ recognise that integration and control do not necessarily lead to abuse of dominance. <p>Interoperability and interconnection: Vertical integration is less of a problem if interfaces within the value chain are opened. This needs functional and accounting (but not necessarily organisational) separation across the value chain. Standards have a vital part to play in this process but must be carefully applied. Enforcing standards inappropriately can have a detrimental effect.</p> <p>Wholesale markets should be encouraged - without price regulation.</p> <p>Conditional access systems: Conditional access systems allow their operators to extract economic rents. They encourage development of new services and inherently support transactional services; there is however, a risk of abuse of dominance through control of conditional access systems. Proprietary conditional access systems are currently being developed although a standard approach is possible.</p> <p>Competition between networks: Different delivery mechanisms are possible and competition between these will encourage innovation and efficiency. Technological developments and growth in demand question</p>

	<p>current natural monopoly arguments. Spectrum must be economically assigned. Environmental concerns need addressing.</p> <p>Exclusive rights to content: Exclusive distribution deals are likely to lead to a maximisation of transfer of consumer surplus to rights owners. Governments will need to take a view as to the extent to which this is desirable. The general principle of minimal economic distortion is again valid.</p> <p>Affordability: It is a legitimate social concern for governments to ensure that disadvantaged groups are not excluded from accessing some of the services available. To date, this objective has been achieved through public service broadcasting and obligations to provide universal service. Under convergence, a 'library' concept could be extended. A minimum set of services could be defined and provided by library type service provision, either in public places, via direct subsidy to certain consumer groups, or by allocating bandwidth for the purpose.</p>
<p>Monitoring and enforcement</p>	<p>In the long run, monitoring and enforcement of any regulatory provision aimed at achieving economic efficiency will need to be facilitated. The industry will be largely subject, like any other, to the appropriate application of competition law. It will, however, be important to define markets to allow this to occur. Under convergence, expertise in both the sector and the application of competition rules will, given the potentially complex market structures, be required.</p> <p>We believe that standards encouraging interoperability and interconnection should be developed through market mechanisms.</p>
<p>Future regulation</p>	<p>There are three key areas of potential concern:</p> <ul style="list-style-type: none"> ■ abuse of dominance; ■ inefficient entry into new markets; ■ exclusion of certain groups from key services. <p>The first requires the application of competition law and the second a rigorous assessment of natural monopolies. The final concern can be prevented in a number of ways including: price caps (although it is difficult to target these effectively); service provision in public areas (akin to libraries); and vouchers or payments to certain consumer groups.</p>

Intellectual property rights protection

Rules relating to intellectual property rights (IPR) are the means by which the value of the content is transferred across the value chain. When looking at economic regulation the subject has to be addressed as a specific concern.

Definition	Intellectual property rights (IPR) protection relates to mechanisms for ensuring that the value of creative processes can be extracted. There are incentive and reward functions which are closely linked. Two main systems exist - Continental droit d'auteur and Anglo Saxon copyright - although there is some evidence that the two systems are becoming less distinct. IPR protection remains a valid objective under convergence.
Application	Regulation needs to balance the rights of creators, exploiters and consumers with a view towards maximisation of economic efficiency under the convergent environment. Consistency of approach across frontiers is required as rights are increasingly traded internationally.
Monitoring and enforcement	Increasingly diversity of services and distribution channels will make it difficult to track and control the use of rights. The ability to manipulate and browse information challenges traditional definitions of rights and introduces the need for new forms. Collecting societies are favoured for some forms of rights. On the Internet, much material is not subject to copyright.
Future regulation	Technical solutions need to be devised to allow usage to be monitored. The suitability of current approaches needs to be appraised. Courts and collecting societies will be the main forms of implementation.

Regulatory objectives - public interest

In the following set of tables we consider key public interest objectives. We consider industrial and trade policy, universality, culture, quality and diversity, pluralism, and different aspects of consumer protection.

Industrial and trade policies

Definition	Industrial and trade policies aim to achieve a range of objectives. A key rationale for intervention is typically based on "externality" arguments - too little of a service is produced because the benefits to producers are lower than for society as a whole. Trade policies are also aimed at protecting domestic producers from 'unfair' international competition.
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Application	A key issue is to determine whether, under convergence, the market outcome delivers a sub-optimal level of new services. Areas of concern include audiovisual production (especially film) and specific sub-sectors such as the Internet, online and consumer electronics.
Monitoring and enforcement	Policies are likely to target specific segments of the value chain. This may be problematic under convergence if, for example, there is horizontal or vertical integration. It may be increasingly difficult to design and target policy. Application of policy requires accounting and functional separation of the "protected" activity from open areas.
Future regulation	Intervention under convergence should only occur if there is unfair competition from international competitors and there are identifiable externalities that cannot be corrected by markets.

Universality

Definition	Universality has three different aspects: access to services; network coverage; and affordability. Public service broadcasting spans all three aspects. Affordability is discussed above.
Application	<p>Services: it is too early to extend universal service obligations to new services; interconnection between service providers aids access.</p> <p>Networks: it is unnecessary to expand universal obligations for broadband access.</p> <p>Public service: a valid concern that diminishes as scarcity is removed.</p>
Monitoring and enforcement	There is no need to monitor service and network access unless universal service obligations are extended to include new services. We believe that there will be an increasing need to distinguish audiovisual content production from service provision and transport. In this way, any subsidy for public services can be explicit and can minimise distortions.
Future regulation	<p>There is no need to extend universal service obligations. Governments should "buy" services on the open market if universality objectives are not being achieved.</p> <p>Public service broadcasters should be allowed to provide new services, subject to safeguards against cross-subsidy from their publicly-funded operations.</p>

Culture

Definition	Culture includes factors such as a country's language, literature, history, heritage, customs, arts, social institutions and attitudes which together define the essence of a nation, region or society.
Application	It remains valid under convergence for governments to promote culture, although we believe that the objective is more likely to be self-fulfilled as product differentiation occurs. The publishing market, for example, produces cultural material. If governments are of the view that insufficient cultural material is being supplied by the market, then they should purchase it directly on the open market to avoid distortions. Public service broadcasters currently have an important role in this area.
Monitoring and enforcement	Under convergence, channel multiplicity means that monitoring and enforcement of a desirable cultural mix will be difficult, costly and may be impractical to achieve through regulation. Governments could ensure the provision of such services, but should do so in such a non-distortionary manner. A promotional rather than restrictive approach is preferable. A public service fund to which all providers contribute may be an option.
Future regulation	Intervention may no longer be required.

Quality and diversity

Definition	Quality (of content and delivery) is subjective, but policy makers may wish to define it. Diversity requires a broad range of products.
Application	Service providers will have their own quality objectives. Both niche and mass services of varying quality will emerge under convergence. Again, the publishing market analogy can be applied. Quality and diversity that matches market requirements should, we believe, become increasingly self-fulfilling as the market for new services develops.
Monitoring and enforcement	Quality and diversity will be difficult to monitor and control. Maintenance of current diversity and quality controls on traditional broadcasters will create a market distortion (see Universality) and may become unnecessary as they compete with new entrants. However, abuse of dominant positions will still need to be guarded against (see Economic efficiency).
Future regulation	Quality and diversity objectives should be increasingly self-fulfilling as product differentiation develops. Governments may wish to intervene, but there are no strong economic grounds for doing so. There is, as a consequence, no role in the long term for a sector-specific regulator.

Pluralism

Definition	Pluralism relates to safeguards to ensure variety in sources of news, opinion and information. Although the prospects for increased pluralism are improved with convergence, it remains a valid objective.
Application	Removal of scarcity means that plurality of opinion will more readily occur. It will therefore become less of a concern to regulators. Despite this, convergence may separate content production from service provision and conveyance, and controls must reflect this. Current approaches largely focus on ownership, although in the future a new measure of 'share of voice' (or equivalently 'share of audience') may be required. It is necessary to consider whether controls should be applied to content producers or service providers. The long term removal of scarcity suggests that measures should be applied to those with editorial control, even though service provision and delivery are currently a bottleneck.
Monitoring and enforcement	Convergence challenges current methods and raises doubts on the ability of regulators to monitor and control in a cost effective manner. Definitions that include account transactional services are needed.
Future regulation	New procedures are required and new definitions need to be made. The competition authority appears to be the most appropriate body to regulate for pluralism as it is, in essence, a market share issue. The influential nature of the industry means that more stringent measures are needed than for other consumer markets.

Consumer protection: protection of minors, human dignity and freedom of speech

Definition	Protection of minors and human dignity both relate, although in different ways, to an adequate standard of morality for publicly available content. There may be an element of criminal activity. Freedom of speech is, to some extent, the opposite side of the same coin. The objective is to ensure that people have the right to express their opinions openly and fairly.
Application	Concerns regarding both the protection of minors and human dignity naturally reduce under convergence. Reasons include the transactional nature of the services. Technical solutions are also being developed that can be used to restrict access by minors. Service providers are likely to adopt mechanisms that support the classification of material.

Monitoring and enforcement	It will be impossible and inappropriate due to high volumes, encryption techniques and rules on freedom of speech to police and control all content. Cross-border traffic adds further complications. The volume of adult material is small compared to all new services. Blanket responses are not appropriate.
Future regulation	<p>Freedom of speech implies that people should be able to make material available provided it is not illegal. Self-regulation should be encouraged and criminal courts used as the ultimate sanction.</p> <p>Obligations could be placed on service providers to remove known illegal material from databases controlled by them although responsibility for all information that is accessed through the service is inappropriate.</p> <p>Regulation should not be specific to particular services or technologies.</p>

Consumer protection: security, privacy and data protection

Definition	Security, privacy and data protection all relate to basic civil liberties to ensure that information about individuals is not unlawfully disclosed or misused. This regulatory objective remains valid under convergence.
Application	The <i>Data Protection Directive</i> addresses some of the concerns. Good security controls will become part of the selling proposition. Key issues relate to informed consent and prevention of unauthorised access.
Monitoring and enforcement	This is highly complex and we can only raise, but not solve, the issues. Current practices will become increasingly impractical to monitor and enforce. Significant concerns relate to payment transactions (for example, credit card fraud).
Future regulation	Security, privacy and data protection are issues for service providers and network operators, and a reasonable duty of care should be placed on them. Policing will be difficult and, long term, the abused party may need to demonstrate negligence rather than be covered by pre-emptive protection.

Consumer protection: fraud, incitement and defamation

Definition	Fraud, incitement and defamation are all examples of criminal acts or civil offences that can be committed over electronic media.
Application	Member States will need to recognise in their laws that such crimes can be committed easily on new media. Cross-border provision introduces additional concerns. A harmonised EU framework is desirable.
Monitoring and enforcement	It is unreasonable to impose liabilities on service providers or network operators, although they should be obliged to remove known fraudulent or defamatory material when identified.
Future regulation	Co-ordination at EU level is preferred. International law may need to be developed. Courts should be the enforcement mechanism.

Strategies for the new world

This analysis allows us to outline the future regulatory framework suitable for handling new transactional services. This should be applied to such services now. Regulation of traditional services should be migrated to this vision over an agreed timetable.

"This framework will apply light-handed regulation ... it will use competition policy as the main mechanism for enforcement."

This framework will apply light-handed regulation consistent with the publishing market analogy. It will use competition policy as the main mechanism for enforcement which will be applied by a body having both competition and sectoral skills. Vertical integration should not be precluded *per se* - it is only vertical integration coupled with an abuse of a dominant position that is a problem.

Cultural, quality and diversity objectives should be largely self-fulfilling and government's 'editorial' role should be removed, since it will anyway become unsustainable over time. If market intervention is required to overcome a market failure to meet public interest obligations then this should be done explicitly and so as to avoid secondary effects. Universality obligations should not be extended to new services.

Detailed recommendations are provided in Chapter 6 of this report.

Chapter 5: Realising change

The need for a transition strategy

The preceding chapter summarises our analysis of a number of policy objectives based on the characteristics of convergence. These characteristics will not exist, at least not ubiquitously, for many years to come.

Existing regulation is designed for the current environment - the new services need a different regime. Can both exist in parallel and, if not, how should we migrate from one to the other smoothly?

"There are many valid reasons why the current rules cannot continue in force unmodified."

Our view is that there are many valid reasons why the current rules cannot continue in force unmodified. Take, for example, current treatment of video-on-demand and near-video-on-demand. Both these services meet the same consumer need, but, because they have different delivery mechanisms, they are often subject to separate regulation. Another example relates to public broadcasters. Such companies will face competition from new transactional service providers. Eventually new services may develop to such an extent that advertising revenues for commercial broadcasters are threatened or that consumers begin to question the benefit of the licence fees. In order to survive, public broadcasters may have to enter new markets. In doing so, however, they may find themselves fettered by existing controls or, on the other hand, able to abuse privileges resulting from their status (for example free access to spectrum or subsidised content). Many other examples can be propounded.

Existing regulation must, therefore, be developed in a phased way so that it becomes consistent with the new approach required by the emerging convergent world.

Recognising practical limitations

Such a transition must be governed by practical considerations.

The Internet has challenged many preconceptions about the practicality of control and well illustrates potential future problems. For the would-be regulator, the Internet is unwieldy and difficult to police. However, to many users the advantages of the Internet outweigh concerns about potential abuse even though these, for example in the case of child pornography, may be significant. Controls are likely to have limited effect and even these may be expensive to apply and delay the deployment of new services. Furthermore, services delivered from overseas may ride rough-shod over any local controls.

So far, the Internet has been allowed to develop relatively free from regulatory control. We believe this to have been, on balance, an overall benefit to the achievement of information society goals. We would all be much more comfortable if we could guarantee that criminal or immoral use of electronic delivery mechanisms would never happen but is this a practical goal? Governments do not, after all, ban the telephone because it can be used to plan or perpetrate a crime. Policy makers have to balance the benefits of a new development against either the cost of policing and prevention, or the 'cost' to society of allowing an abuse to occur. The balance-point may change with time and, in any case, we should as a community ensure the best affordable protection possible at any given time.

The preceding discussion is just one example of practical concerns that happen to focus on the issue of policing and control. Other practical considerations must also be addressed. For example, we cannot simply change the ground rules under which the industry currently operates. Such an approach may undermine existing business plans and organisations can rightly expect a reasonable time in which to respond to what may be significant regulatory changes.

Furthermore, the situation in each Member State is different. Each will need to define its own timetable and address its own problems within a harmonised framework that is directed towards an agreed common goal. However, as is the case in recent telecommunications legislation, a common timetable would have advantages in terms of providing a secure environment for investment.

"Tactics to achieve a smooth change must reflect these many practical concerns."

We also find an increasing danger that turf wars may develop between regulators with differing responsibilities. Such an approach is undesirable to the industry and its customers; it must be confronted and avoided even if some sacred cows are challenged.

Once practical issues are introduced we find ourselves quickly embroiled in a morass of detail. In our work, we found many such practical constraints. Their existence does not mean that we should prevent or slow the inevitable process of convergence, but it does present a challenge to regulators. This area will exercise the attention of policy makers for several years. It will require creative solutions and an element of risk for regulators themselves. However this challenge must be faced if the dangers of unsuitable regulation that have already been discussed are to be avoided.

Tactics for transparent change

Tactics to achieve a smooth change must reflect these many practical concerns. Our brief did not cover a full implementation plan for a new policy regime although some high level recommendations are made in Chapter 7. In developing these recommendations we drew on a number of principles. These included the following:

- regulation of new transactional services should be based from the outset on a new regulatory model and not on the incremental extension of existing measures;
- it is important that a level playing field be defined as soon as possible, encompassing both traditional and new services;
- transitional arrangements will need to reflect practical concerns, and will have to recognise different starting points within Member States;
- conditions should be defined that will trigger change in a transparent manner so as to provide the investment community with a degree of certainty;

- no measures should be introduced that would result in additional inconsistencies between markets and industries;
- inability to control the activities of service providers is not, *per se*, a valid reason for prohibiting their operations.

Chapter 6: Recommendations - the vision

In this chapter, we summarise our recommendations concerning the target regulatory framework for convergence. These recommendations are developed from a consideration of the characteristics of the future converged world. The framework should be applied to transactional services when it is finalised and agreed.

In this summary report we concentrate on high level recommendations. More detailed observations, as well as a full justification, are provided in our full report.

Recommendation - Overall

Our overall recommendations are that:

- the Union should define a regulatory vision for the future that supports market-led developments;
- the application of this vision should be based primarily on competition law and should minimise regulatory intervention and avoid market distortions;
- the vision should be applied to new services from their outset;
- the Union should develop practical transition arrangements that progressively migrate currently inconsistent regimes to the new vision.

Other recommendations concerning the long term framework are as follows:

Recommendation - Competition policy

EU competition policy should be the main tool by which the convergent sector will be regulated. It will be applied by an authority having competition expertise augmented by specific sectoral and technical experience.

As part of this change, the following definitions should be developed:

- markets (this should be based on the users' view of the services and should be independent of the technical method of delivery);
- the different elements of the value chain - covering content (creation, production and packaging), service provision, conveyance and consumer interface.

Recommendation - Vertical integration

Vertical integration should not be prohibited *per se*. Instead the extent of horizontal concentration should be assessed. Vertically integrated structures should not be forced open unless there is clear evidence that other players wish to enter the market and are prevented from doing so, and that there is a net benefit in opening the market.

Functional and accounting separation is necessary to allow the competition authority to judge whether abuses are occurring.

Recommendation - Competition between networks

Regulation should be technology neutral and it should be a fundamental principle that there should, from a regulatory perspective, be no barriers to the delivery of any service over any suitable network.

Recommendation - Interconnection and conditional access

Obligations to interconnect to other service providers or network operators should be a fundamental tenet of the new regime.

Despite the potential threat of exclusion through proprietary conditional access systems, government intervention to develop or improve technological solutions should be avoided. The key issue with respect to conditional access will be the monitoring of the development of such activities and intervention if there is abuse of a dominant position.

Recommendation - Universality and distributive objectives

Obligations to provide universal access should not be extended to new transactional or broadband delivery services unless there is a demonstrable benefit. Universal objectives should be achieved through open-market purchases by government or transparent levies on operators. The targeting of specific services to selected groups (low income, elderly, children) should be explicit.

Recommendation - Licensing of content providers and packagers

Content providers and packagers need not be subject to individual licences - class licences or general authorisations will, in general, be the most stringent requirement. Self-regulation is our preferred method of control.

Recommendation - Public interest issues

In addition to the competition authority that will be focused on economic issues, a democratically accountable body will address issues of public interest and define how these should be applied in a non-distortionary manner.

Recommendation - Public service provision

Governments are likely to perceive the need for continued public service provision, although we believe that a free market may in fact provide an adequate level of service unaided. Where an organisation provides both public and commercial services, there should be complete, transparent and clear accounting separation of the costs of providing these services and their funding sources.

Recommendation - Pluralism

A consistent method of measuring 'share of voice' should be developed, based on the concept of 'influential material'. A definition of editorial responsibility is also required. Rules relating to concentration of 'voice' could then be applied. Application procedures (in terms of the degree of concentration permitted) need not necessarily be identical across Member States. Monitoring and enforcement would be undertaken by the competition authority. It is likely that market share tests will be more stringent, compared to many other industries.

Recommendation - Culture, quality and diversity

We believe that these objectives will be largely self-fulfilling. Where intervention is necessary to correct any perceived market failure it should be done explicitly and should minimise any additional distortions. We would recommend direct purchase of content that government considers desirable on the open market.

Recommendation - Industry and Trade

Governments may wish to foster local industry. This should be done in a manner that minimises secondary distortions and is promotional rather than restrictive. It is questionable whether quotas are the best mechanism for achieving this goal.

Chapter 7: Recommendations - transitional phase

The following recommendations concern the transitional phase - the tasks needed to progress from today's regime to the consistent regime that will support full convergence. The scope of our study excluded detailed implementation steps.

Recommendation - Do not simply extend current regulation to new services

Traditional audiovisual content regulation should not be applied to new transactional services. Regulators should avoid the expansion of universal service obligations and should examine alternative ways of providing universal coverage.

The licensing regime for new services should not simply follow that currently used for existing audiovisual services. A new class licensing system for content services should be developed. Interim procedures may be needed.

Recommendation - Sector-specific regulator

As the sectors tend towards convergence, sector-specific regulation will still be required to ensure a smooth transition. Industry knowledge covering content and its delivery will be important at this stage. However governments must plan for the convergence of regulators in a way that recognises the split between economic regulation and a democratically accountable body looking at the 'public interest'.

Recommendation - Separation of the value chain

Regulation should be increasingly directed at the various segments of the value chain so as to ensure interoperability, interconnection and transparency. The value chain should be broken down into definable parts and open interfaces between segments should be developed. Organisational separation is not essential, but regulators should plan for accounting separation.

Recommendation - Vertical integration

A balance needs to be struck between fostering innovation and avoiding dominance. Attacking vertically integrated structures or horizontal concentration too early can stifle competition and innovation. This may require a lenient view during early stages. This requires markets to be defined more rigorously, in anticipation of more complex market structures and horizontal integration agreements. Accounting separation is necessary if the regulator is to ensure that a position of vertical integration is not abused. Conditions that will prompt a review of the lenient approach must be specifically stated.

Recommendation - Existing operators

During the evolution of convergence, existing established players are likely to want to enter new markets. Public service broadcasters should be allowed to enter these markets, subject to protection against unjustified cross-subsidises from publicly funded activities and resources (including access to spectrum and subsidised content).

Recommendation - Competition between technologies

Competition between technologies must be encouraged, although there may be a need for specific measures to support market entry in the short-term (ie line of business restrictions) where existing operators are dominant. Service providers, integrated or not, must be provided with the ability to use more than one network in a non-discriminatory way; this will encourage and facilitate the development of new services and competition. Specific measures include:

- the need to foster open interfaces between network operators and service providers;
- the need to permit satellite operators to use a return path on the telephony network - telecommunications law permits this but the permission should be explicit;
- duct sharing must be encouraged;
- subject to demonstrable natural monopoly arguments, there should be no restriction on the construction of new networks except on valid environmental grounds;
- there should be no restriction on the use of satellite dishes or radio antennas except on valid environmental grounds.

Recommendation - Access to local loop

Telecommunications operators should make the physical infrastructure of the local loop available to others wishing to provide, for example, asymmetric digital subscriber line services. This obligation should be extended to access to the final drop where the new operator wishes to develop a fibre-to-the-kerb network. Charges should be cost based.

Recommendation - Role of public broadcasters

As new services develop and attain critical mass, the role and provision of public service broadcasting should be reviewed. Governments may legitimately define an explicit set of public audiovisual services and monitor whether these are provided in the market place. Where there is inadequate provision, governments may wish to correct perceived failures. They should do so in a way that minimises secondary distortions.

Recommendation - Access to rights

Access to exclusive rights for key events that are in the public interest (for example sporting and cultural events) should be addressed. Replay and highlight rights provide some protection to vulnerable groups. The issue should be addressed quickly before any long term exclusive deals are made. If rights are granted free and exclusively to public broadcasters, the value must be considered when allowing them access to new markets. The distribution of the value of property rights across the value chain must be assessed.

The industry needs to examine and encourage the development of new collection mechanisms for rights.

Recommendation - Economic allocation of spectrum

As scarcity in delivery diminishes, governments will need to consider alternative uses for and economic allocation of spectrum. A timetable should be developed to remove uncertainty.

Recommendation - Consumer protection

Consumer protection measures including criminal and civil offences (for example data protection, security, defamation, fraud, incitement, obscenity, etc) must recognise electronic media. However, we must also reflect that convergence will make policing and enforcement harder, and it is not a matter of extending current regulation to the new services. It is neither appropriate nor practical to place obligations to monitor content on service providers or network operators, although they should be required to remove material from their databases where it is known to be illegal. Obligations should primarily lie with the content owner or generator. International co-ordination is needed to address cross-border concerns.

Self-regulation is the preferred method of control of content. This requires technical solutions that allow customers to filter material. The free and universal provision of such systems should not, however, be obligatory.

Queries on this report should be directed to the following:

		Role in project	Telephone	E-mail
Paul Styles	KPMG	Project Director	+44 171 311 2283	paul.styles@kpmg.co.uk
Martin Bicknell	KPMG	Joint Project Manager	+44 171 311 2875	martin.bicknell@kpmg.co.uk
Dr Alison Sprague	KPMG	Joint Project Manager	+44 171 311 2347	alison.sprague@kpmg.co.uk
Dr George Houpis	KPMG	Lead Economics Consultant	+44 171 311 2734	george.houpis@kpmg.co.uk
Tony Ghee	Ashurst Morris Crisp	Legal input	+44 171 638 1111	

The KPMG team was drawn from our Information, Communications and Entertainment (ICE) consulting practice which can be contacted at 1 Puddle Dock, London EC4V 3PD, UK: phone +44 171 311 1000; fax +44 171 311 2266. Ashurst Morris Crisp can be contacted at 5 Appold Street, London, EC2A 2HA, UK; phone +44 171 638 111; fax +44 171 7990.

