

Study on the Development of Competition for Electronic Communications Access Networks and Services

**A report to the European Commission, Information Society
Directorate, on the regulation of Conditional Access
Systems and related facilities**

February 2001

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Background to this report

In parallel with the publication in July 2000 of its proposals for a new regulatory framework for electronic communications services, the European Commission asked Ovum, in association with Squire Sanders & Dempsey LLP (SSD), to advise on the future regulation of Conditional Access Systems and related facilities. This report contains our analysis and recommendations based on detailed discussions and consultation with the telecommunications and broadcasting industries.

The proposed Access and Interconnect Directive¹ is one of the core directives of the new regulatory framework. It proposes that all operators of conditional access systems (CAS) should provide access to broadcasters on fair, reasonable and non-discriminatory terms. It also provides for a future review of this provision, with the possibility to modify these obligations and, if justified, extend them to related facilities, specifically the application program interface (API) and the electronic program guide (EPG).

These proposals lead to two main questions which the study team addresses in this report:

- Should existing conditional access system (CAS) obligations for fair, non discriminatory and reasonable access apply to all CAS operators or only to those with significant market power (SMP)?
- Should CAS obligations be extended to cover application program interfaces (APIs) and electronic program guides (EPGs)?

Key findings

On the basis of our research and analysis as detailed in this report, Ovum and SSD conclude that:

- The current requirement for access to the CAS on fair, reasonable and non-discriminatory (FRND) terms is working well. There is therefore no good reason to change this requirement in the short term.
- As the market for digital television services matures, access on FRND terms will increasingly produce outcomes which are consistent with those which would derive from applying “proportionate regulation” – the general provisions of the Access and Interconnect Directive². There is therefore no compelling reason not to converge the regulation of CAS with the measures of proportionate regulation in the longer term. One suitable trigger for this convergence will arise if CAS (with or without associated facilities) is identified as a distinct market when the Commission publishes its Decision on Relevant Products and Services markets.

¹ COM(2000)384 – Proposal for a Directive of the European Parliament and of the Council on access to, and interconnection of, electronic communications networks and associated facilities (OJ C 365, 19.12.2000).

² We use the term “proportionate regulation” to cover the measures in Articles 9-13 of COM(2000)384. These measures cover transparency, non-discrimination, accounting separation, obligations for access and usage of specific network facilities, and price controls and cost accounting obligations.

- It is too early in the development of digital interactive services market to determine whether regulatory intervention in the supply of APIs and EPGs is required. We believe that an appropriate regulatory response at this stage would have three facets:
 - Actively encouraging the adoption of open standards, such as the Multimedia Home Platform (MHP)
 - Establishing the market conditions and other criteria upon which a future decision to regulate access to APIs and EPGs would be taken
 - Reviewing the market and the need for regulatory intervention before the end of 2002. By this time the interactive services market will be considerably more mature and it will be clearer whether regulatory intervention is justified. Conducting a review before the end of 2002 also leaves open the possibility of regulating³ APIs and EPGs in 2003, shortly after the new regulatory framework is required to be implemented in Member States.
- There is particular need in the digital television market to monitor and, where necessary, to regulate vertically integrated firms which are active in both content production and network distribution. Such vertical integration is already within the scope of *ex post* Competition Law. The new regulatory framework provides the means for sector-specific regulation, if required. However, if any such sector-specific regulation is to be effective, careful consideration will need to be given both to market definition and to the assessment of Significant Market Power.

Industry responses

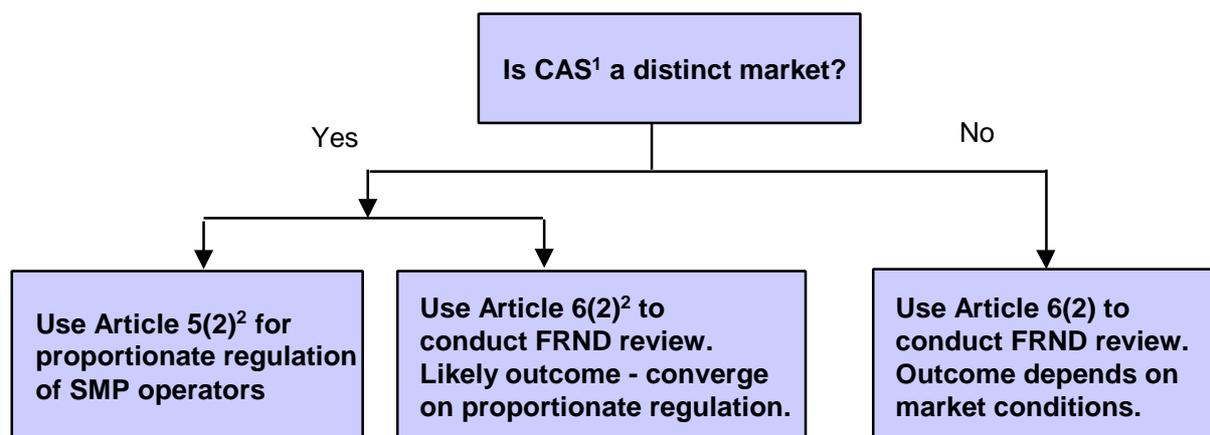
The market for digital interactive services is at the cutting edge of convergence between broadcasting and telecommunications. It is not therefore surprising that there is a clash (or, put more positively, a convergence) of cultures in this market. Whilst the telecommunications industry has been generally supportive of our proposals to harmonise CAS regulation with the approach of proportionate regulation, the broadcasting community, especially the established public service broadcasters, are wary of moving away from the concept of access generally available on FRND terms. They are uncertain as to whether the generic provisions of the Access and Interconnect Directive will provide them with sufficient protection against vertically-integrated competitors which may not be found to have Significant Market Power in a relevant market.

In drawing up our proposals, we have been mindful of the views of both the broadcasting and telecommunications communities. In addition, we have been sensitive to the fact that some of the concerns that have been expressed are outside the scope of the *ex ante* regulation that is under review.

Proposals

Figure 1.1 outlines our key proposals and shows how they are logically linked.

³ Such regulatory review is possible under Article 6(2) of the proposed Access and Interconnection directive.

Figure 1.1: Decision tree for regulating CAS and associated facilities
**Notes:**

1. The market for CAS may be defined to include associated facilities such as API and EPG, and/or to include access control systems for broadband interactive services.
 2. Article numbers refer to the draft Access and Interconnect Directive.
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Proposal 1: The current rules for the supply of conditional access systems, based on FRND regulation, should be retained at least until the Commission has published a Decision on Relevant Product and Services Markets.

Ovum/SSD recognise that the different approach to regulating CAS in the proposed Access and Interconnect Directive reflects the differing regulatory evolution of broadcasting and telecommunications. Given this background, it is understandable that the broadcasting community is more comfortable with retaining FRND regulation for the time being. Furthermore, FRND regulation helps to provide legal certainty in a fast-evolving market with substantial vertical integration.

We are not ourselves persuaded that FRND regulation will have any materially different market outcomes from applying the proportionate regulation which forms the balance of the Access and Interconnect Directive. In the interests of simplicity and harmonisation⁴ we therefore find that there is no strong reason not to converge CAS rules with proportionate regulation in the longer term⁵. However, in order to provide certainty, we propose that this should only be done subsequent to the Commission's publication of a Decision on Relevant Product and Services Markets and the publication of guidelines to NRAs about how to assess market power within those relevant markets.

Proposal 2: Once a Decision on Relevant Product and Services Markets has been published, and in any case no later than the end of 2002, the Commission should conduct a review of the supply of CAS, pursuant to Article 6(2) of the draft Access and Interconnect Directive. This review,

⁴ We are assuming here that in the longer term harmonisation is more important than continuity with the current regulatory framework.

⁵ Indeed, in the absence of CAS having the characteristics of a market, as opposed to a gateway or bottleneck, this approach is consistent with the conclusions reached in the Commission's 1999 fixed/mobile convergence study.

should consider a) whether there are grounds to retain current FRND regulation of CAS for pay TV services, and b) whether there are grounds to extend FRND regulation to include associated facilities (e.g. APIs and EPGs) for pay TV services and/or broadband interactive services.

A review of current CAS regulation is necessary regardless of the outcome of the Decision on Relevant Product and Services Markets, but it will need to be on a different scale and is likely to have a different outcome depending on whether CAS is identified as a distinct market. The review should not therefore take place until the first market definition process is completed.

Our proposal is designed to give the Commission the maximum amount of time, and thus market information, before taking a decision on regulating APIs and authoring tools. There are two major reasons for waiting until 2002 to make this decision:

- The market for interactive services on digital television is currently embryonic, and it is too early to tell whether and to what extent regulation is required.
- The Commission could not introduce regulation, based on the review procedures outlined in Article 6 of the new Access and Interconnect Directive, until 2003 at the earliest.

By reviewing the state of the market before the end of 2002, the Commission will still have time to enact regulatory measures (if required) to come into force shortly after the new Access and Interconnect Directive is adopted by Member States.

Proposal 3: If the Decision on Relevant Product and Services Markets finds that the supply of CAS (perhaps also including APIs and EPGs) constitutes a distinct market, then the Commission should seek to converge all regulation of digital TV operators (including regulation of CAS as well as APIs and EPGs) into the generic measures of the Access and Interconnect Directive based on “proportionate regulation” of operators having Significant Market Power.

If CAS is identified as a distinct market, the question is whether proportionate regulation provisions should apply to the CAS market, as to all other markets, or whether there is a need to continue with FRND regulation of all suppliers.

It is our opinion that operators which do not have SMP will naturally tend to offer open access to their platforms on fair, reasonable and non-discriminatory terms. If this is true, then the extension of FRND regulation to APIs and other facilities will not be required. Instead, the use of proportionate regulation of SMP operators, with its in-built capability for more aggressive regulation than is possible under FRND, will more likely produce the desired market outcomes.

Proposal 4: If the Decision on Relevant Product and Services Markets does not find that the supply of CAS (with or without the inclusion of APIs and EPGs) constitutes a distinct market, then the Commission should consider either retaining FRND regulation for CAS or extending FRND regulation to include APIs and EPGs if warranted by market conditions.

If CAS (and associated facilities) is not identified as a distinct market, then proportionate regulation of SMP operators cannot be applied. In these circumstances there may be a need to retain or extend FRND,

depending on market conditions at the time of the review under Article 6(2) of the draft Access and Interconnect Directive.

We recognise the concerns of many respondents, that there are at this stage considerable uncertainties in the processes (under the new Directives) for market definition and assessment of significant market power. Many are concerned that these processes will not be sufficiently sophisticated to deal with the peculiar structure of the digital television industry, with its high levels of vertical integration and potential for leverage between related markets. Some question whether the new definition for SMP may be too narrow, or that markets will be defined too broadly, with the result that some operators go unregulated whilst nonetheless being able to exert undue market influence.

Ovum/SSD considers that many of these concerns are likely to prove unfounded, especially if the Commission issues guidelines on the definition and regulation of SMP operators in vertically integrated markets (see Proposal 6 below). If we are right then there will be no need to extend FRND regulation beyond 2002 or beyond the existing controls on CAS providers. However, we believe it would be unwise at the present moment for the Commission to rule out the possibility of extending FRND regulation, in case the problems of vertical integration on the digital TV market prove to be more intractable than we anticipate.

Proposal 5: The Commission should continue to promote the MHP standard.

MHP provides a potential vehicle for achieving open access to digital TV platforms. We do not consider that the Commission should mandate the use of the MHP standard⁶, but it should create suitable incentives for the industry to adopt MHP if it proves to be an appropriate means of achieving open interfaces.

Proposal 6: The Commission should consider issuing guidelines to NRAs for defining and regulating SMP operators in the case of a heavily vertically-integrated industry, such as digital television.

We, along with many in the industry, are particularly concerned about the issues of vertical-integration in the digital television market. In general, vertical integration is dealt with by competition law. However, to the extent that vertical integration is a structural problem specific to the digital television market, we consider that it could be dealt with by the Commission establishing guidelines for regulating SMP operators⁷. The Commission should consider whether the guidelines to be produced by DG Competition in response to the January 2001 request of the Council are sufficient, in this context.

⁶ The technical specification on the MHP standard was published by ETSI on July 12, 2000 (TS 101 812 Version 1.0)

⁷ As, for example, in the Commission's decision regarding British Interactive Broadcasting (case IV/36.539) where conditions were imposed to ensure third party access to pay TV channels.

2.1 Objectives of the study

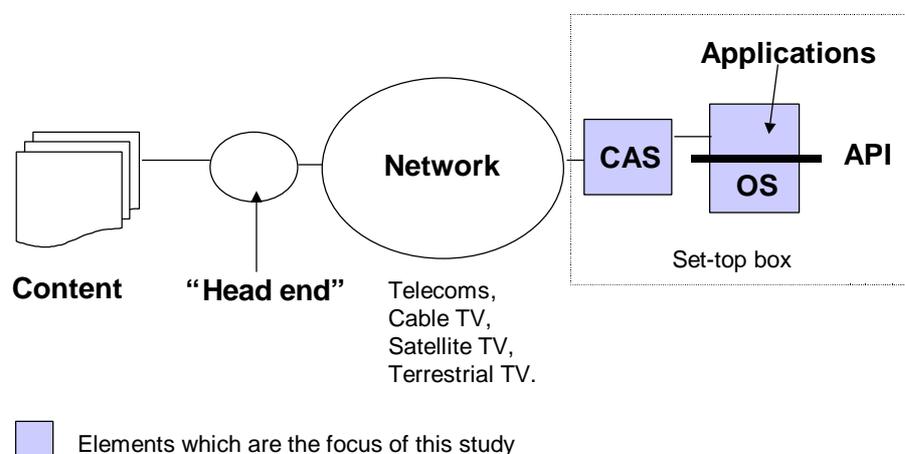
Following the publication on 12 July 2000 of five proposals for new Directives for the common regulation of the telecommunications and TV broadcast industries, the European Commission asked Ovum and Squire, Sanders, Dempsey (SSD) to help develop guidelines for the application of the new Directives to the digital TV industry. We focus our study on four key issues:

- whether existing conditional access system (CAS) obligations should continue to apply to all CAS operators or should be amended to apply only to those with significant market power (SMP)
- whether CAS regulation should continue to be based on fair, reasonable and non discriminatory access, or whether it should be based on “proportionate regulation” – the generic regulatory measures proposed in the Access and Interconnect Directive.
- whether CAS obligations should be extended to cover application program interfaces (APIs) and electronic program guides (EPGs)
- if CAS obligations should be extended, under what circumstances should they be imposed (e.g. when and on whom)?

2.2 Scope of the study

It is important to realise that this study does not provide a full critique of the regulation of the digital television or interactive services market. In fact, as shown in Figure 2.1, the study covered only a few of the key inputs for the delivery of digital television services. The focus of the study was on the service delivery components currently contained within a typical set-top box: namely the conditional access system, the applications programming interface (API) which provides access to the operating system (OS), and applications such as electronic program guides.

Figure 2.1: The focus of the study



There were a number of areas specifically excluded from our study, including:

- “Must carry” regulation, which in many Member States specifies some broadcasting content which must be carried by cable networks. As part of this study we have produced an inventory of must carry rules in Member States⁸, but we have not attempted to assess the merits of those rules nor to make proposals for interpreting Article 26 of the Commission’s proposed Directive on Universal Service and User Rights. This article proposes that must carry rules should be:
 - based on clearly defined general interest objectives,
 - designed so that network operators receive appropriate compensation
 - such that obligations and compensations are met in a transparent and proportionate way and are limited in time.
- Access to networks. Currently different rules apply to different networks (e.g. telecoms, cable TV, satellite TV, terrestrial TV) and in different Member States. The general measures of the new Access and Interconnect Directive provide a framework for harmonising access rules across all technology platforms and all Member States.
- Vertical integration between network and content. This area of regulation is generally dealt with through Competition Law, but the new regulatory framework also allows for ex-ante obligations on vertically-integrated firms which have significant market power.

Each of these issues plays an important part in the overall regulation of the digital television market, but they lie outside the scope of this study and report.

2.3 Approach

Our approach to this study was to consult with the broadcasting and telecommunications industries. This consultation was held in two phases.

- In the first phase we prepared a detailed discussion document and circulated it to key industry representatives. The research sample was a representative mix of content providers, satellite broadcasters, cable network operators, telecoms network operators and regulators, both in broadcasting and telecommunications. We then held detailed face-to-face discussions with 13 organisations, operating primarily in Belgium, France, Germany, the Netherlands, Spain and the UK.
- In the second phase we opened up the consultation process to the whole industry across all Member States. A public workshop was held in Brussels on 17 October, at which our draft findings were presented. Following the workshop we invited further submissions from the industry. In total 13 written submissions were received from organisations in Belgium, France, Germany and the UK.

2.3 The structure of the report

The report is in three main parts:

⁸ This report is available on the Commission’s website at www.ispo.cec.be

- Chapter 3 describes the regulatory proposals contained with the draft Directives published by the Commission on 12 July 2000. In particular we highlight the regulatory treatment of CAS, which may in the future be extended to include APIs and EPGs.
- Chapter 4 examines the impact of harmonising the regulation of CAS with the proportionate regulatory approach of the new regulatory framework. On the basis of this analysis we present Ovum/SSD's proposals for the future review of the regulatory treatment of CAS.
- Chapter 5 considers if, when, and in what form, regulation of APIs and EPGs may be required.

Chapters 4 and 5 follow a common format. In each case we describe the key issues, report on industry views on how to deal with them, and present our own proposals and supporting rationale. In particular we have summarised and taken into account comments received from the industry on the draft proposals which we presented in Brussels on 17 October 2000.

3.1 Objectives of the new regulatory framework

In 1999 the European Commission conducted a major review of the existing regulatory framework for communication services⁹. Following extensive public consultation, the results of this review, were published in April 2000¹⁰. Following further consultation the European Commission then published its proposals for a new regulatory framework in July 2000 – primarily through six new draft directives.

In drafting these directives the Commission recognised that the existing legislative framework was primarily designed to manage the transition from monopoly to competition, and was therefore focused on achieving a competitive market and ensuring the rights of new entrants. It has largely been successful in achieving these aims. However, the Commission recognised that changes in the regulatory framework were now necessary, partly as result of this success, but also because of changes in the market, technology and user requirements.

The new regulatory framework has three principal objectives. These are to provide:

- A harmonised regulatory framework for all electronic communications networks and services throughout the European Union.
- Continuity with the provisions of the existing regulatory framework both for broadcasting and telecommunications
- Proportionality – no more regulation than is strictly required to correct for actual or potential market failures.

It is apparent that these objectives are not entirely mutually consistent. In particular, continuity with the current regulatory framework cannot be fully achieved at the same time as harmonisation and proportionality. In such circumstances the principle of continuity is concerned with providing a seamless transition from the existing to the new regulatory environment. It is about carrying forward the existing regulatory measures wherever it is possible to do so without compromising harmonisation or the development of a competitive market.

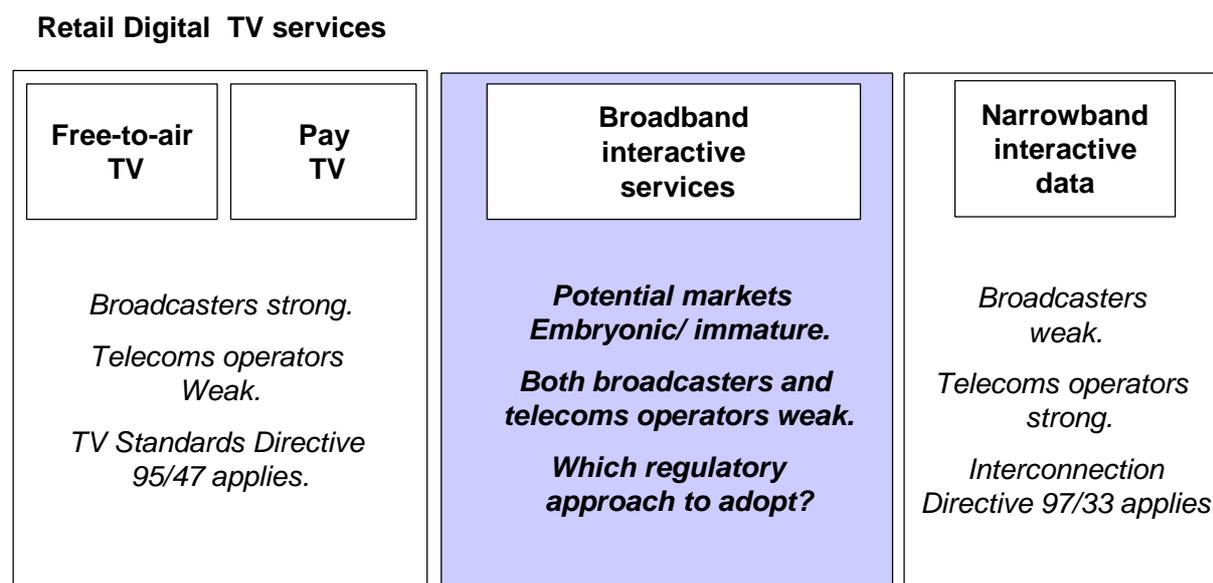
3.2 A convergence of cultures

The tension between continuity with the existing regulatory framework and harmonisation and proportionality, are most strongly felt in the market(s) for digital interactive services. In this market the diverse cultures of broadcasting and telecommunications come face-to-face. It is the role of the new regulatory framework to ensure that this meeting provides a convergence rather than a clash of cultures.

Figure 3.1 illustrates this convergence of cultures, on the basis of five separate types of retail electronic service.

⁹ Review of the telecommunications regulatory framework – a new framework for electronic communications infrastructure and associated services, the 1999 Communications review (COM(1999)539).

¹⁰ Communications on the results of the public consultation on the 1999 Communications Review (COM(2000)239).

Figure 3.1: The convergence of broadcasting and telecommunications


On the one side the provision of linear, free-to-air TV and pay TV services has to date been dominated by the broadcasting companies. Only recently have telecommunications suppliers been able to address this market (e.g. through DSL technology) and their market position remains weak. Overall it is the broadcasters which dominate this market, and the prevailing regulatory paradigm comes from the broadcasting community – the TV Standards Directive (95/47/EC).

On the other side the provision of narrowband interactive data services has, to date, been dominated by the telecommunications operators. Only recently have broadcasters been able to address this market (e.g. providing Internet access through “walled gardens”) and their market position remains weak. Overall it is the telecommunications operators which dominate this market, and the prevailing regulatory paradigm comes from the telecommunications community – the measures of Open Network Provision and especially the Interconnection Directive (97/33/EC).

In the middle is the emerging market for broadband interactive services. These services can be separated into two types – interactive television services (e.g. interactive advertising) and broadband interactive data services (e.g. high speed internet service). This separation indicates that there are some interactive services which broadcasters are perhaps better placed to provide, while there are others which better suit the telecommunications operators. However, overall, this is an embryonic market in which both broadcasters and telecommunications operators are still weak.

A key for the new European regulatory framework is to determine the regulatory paradigm which should be applied in this immature convergent market for broadband interactive services. This is particularly important for the wholesale access markets which underpin both telecoms and television retail service markets. Should the prevailing regulatory paradigm be that of the broadcasting community (based on the TV Standards Directive) or should it be the approach of the telecommunications community (based on ONP rules)? In the proposed

Access and Interconnect Directive the Commission has left open the answer to that question. Instead it has:

- Established general access provisions which apply to all markets
- Continued the specific provisions for digital television which are contained in the TV Standards Directive¹¹
- Allowed for a review of these specific provisions, leaving open the possibility of their removal or their extension as justified by market developments.

3.3 General provisions

The general provisions of the Access and Interconnect Directive are focused on suppliers which have Significant Market Power (SMP) in relevant access markets. These provisions are similar to those which apply under the current Interconnection Directive, but there are two key differences:

- The definition of SMP has been revised to be consistent with the concept of dominance under competition law. An undertaking shall be deemed to have significant market power if, either individually or jointly with others, it is able to act to an appreciable extent independently of competitors, customers and ultimately consumers. Under competition law there is a rebuttable assumption of dominance if a firm has a 50% market share¹², whereas under the current regulatory framework SMP obligations normally apply to suppliers with more than 25% market share.
- The definition of relevant markets will be determined as follows. The Commission, after consultation with the national regulatory authorities (NRAs) and the High Level Communications Group, will issue a Decision on Relevant Product and Service Markets, which will identify the markets whose characteristics may be such as to justify ex-ante regulation. This Decision will not prescribe the approaches to be taken by NRAs, but it will limit ex-ante regulation to the specified markets, and it will require NRAs to conduct market analysis and to justify their decisions on regulation in the specified markets.

Where, after due market analysis, an NRA determines that an operator has SMP in a relevant market, the proposed Access and Interconnect Directive provides for a range of possible regulatory obligations¹³ to be imposed. These include:

- Transparency – undertakings should make publicly available specified information such as technical specifications, network characteristics, terms and conditions for supply and use, and prices.

¹¹ It is not clear to what extent the conditional access provisions of Directive 95/47/EC apply solely to Pay TV markets, or whether they also apply to broadband interactive services. The Directive applies to conditional access to “digital television services broadcast to viewers”. This suggests that personalised interactive services, using the TV set as display and using a return channel for interactive communications between a user and a server (eg. video on demand, email, webTV), are not covered by the current CAS regime. However, other one-to-many services such as near-video-on-demand or electronic programme news may be, because they are purely broadcast and the selection is done by the CAS system and not by a personalised return channel.

¹² However, it is quite possible to be deemed dominant with a market share of less than 50% (e.g. as a result of control of essential facilities).

¹³ These are specified in Articles 9-13 of the Access and Interconnect Directive, COM(2000)384.

- Non-discrimination – undertakings should provide services and information to others on the same conditions and of same quality as they provide services to themselves or to their subsidiaries and partners.
- Accounting separation – undertakings should provide separate accounts for specified activities. In particular vertically-integrated companies should provide transparent wholesale prices and internal transfer prices.
- Obligations for access to and use of specific network facilities, especially in situations where denial of access would hinder the emergence of a sustainable competitive market at the retail level or would not be in the interests of end users.
- Price control and cost accounting obligations. In particular cost accounting obligations and cost orientation of prices may be required where market analysis indicates that a potential lack of competition means that an operator may be capable of sustaining excessive prices or applying a price squeeze.

In this report we refer to this menu of regulatory options as “proportionate regulation”. This term describes a flexible menu of regulatory options which can only be applied where they are shown to be justified by the extent to which a particular market falls short of effective competition.

3.4 Special provisions for digital television

In addition to the general provisions of the Access and Interconnect Directive, Article 6 lays down additional rules specifically relating to conditional access to digital television. Irrespective of the means of transmission, operators of conditional access systems who produce and market access services to digital television shall:

- Offer access to all broadcasters on a fair, reasonable and non-discriminatory (FRND) basis
- Keep separate financial accounts regarding their activities as conditional access providers.

Throughout this report we refer to these specific measures as “FRND regulation”, which we compare and contrast with the “proportionate regulation” of the general provisions in the Access and Interconnect Directive.

Article 6 expressly confers the right on the Commission to review FRND regulation, in consultation with the Communications Committee, in the light of market and technological developments. Furthermore, in the explanatory memorandum which accompanies the draft of the proposed Directive, the Commission indicates that “preliminary work in this area could begin in the near future, in order to prepare the ground for formal decisions that could be taken once the new regulatory framework is adopted”. This report forms part of that preliminary work.

4 The regulation of Conditional Access Systems

4.1 Outline of the key issues

Within the Commission's proposed new regulatory framework there are three elements which distinguish the regulation of conditional access systems (CAS) from the general provisions of the proposed Access and Interconnect Directive. These are that:

- Conditional access is presumed to be a service which should be regulated ex-ante, rather than waiting for the outcome of the Commission's proposed market definition process
- The form of regulation is based on the imposition of fair, reasonable and non-discriminatory (FRND) terms rather than proportionate regulation.
- Regulation is applied to all operators which produce and market CAS rather than simply to those which have significant market power

The key issue for CAS regulation is whether any or all of these distinguishing features should be retained subsequent to the review proposed in the Access and Interconnect Directive. The answer to that question depends on two things:

- An assessment of whether, or to what extent, the specific provisions for CAS regulation produce different market outcomes from the general provisions of the Directive.
- Whether priority is given to continuity with the current regulatory framework or to harmonisation of regulation for all electronic media within the new framework.

In the following sections we describe the views put to us by the industry on each of these dependencies, and then we present the analysis of Ovum/SSD.

4.2 Industry views

The case for special regulatory provisions on CAS

Generally the broadcasting community, both public service broadcasters and their regulators, wish to retain the current distinctive regulatory approach to conditional access systems. They argue that:

- There are substantial industry structure differences between broadcasting and telecommunications which justify different regulatory treatment. In particular, they point to the fact that interconnection and any-to-any connectivity, central elements in telecommunications regulation, are not relevant for most broadcasting applications. They also assert that vertical integration of access and content is a much more substantial problem in broadcasting than it is in telecommunications, and stronger measures are required to deal with this situation.
- The use of FRND regulation has been important in providing certainty in the broadcasting market and encouraging investment in digital television. This investment certainty, and the user confidence which goes with it, will perhaps be even more important over the next few years during the transition from analogue to digital TV. For instance, digital TV penetration has grown fastest in the UK market where FRND regulation has been most rigorously applied.

- FRND regulation is considerably simpler to apply than proportionate regulation since it does not rely on complex market analysis. This, proponents of FRND argue, is particularly true in the television industry which is strongly vertically integrated, thus creating the opportunity for significant market power to be leveraged from one market into another. Market definition is further complicated by the range of competing technology platforms (e.g. cable, terrestrial, satellite). The extent to which these separate technologies represent discrete markets depends on an assessment of how far they are substitutable.
- There is a concern that some players within the digital television market may not have sufficient market power to be classified as SMP operators (and thus fall outside the scope of proportionate regulation), nevertheless what market power they have, if combined with vertical integration, creates a disincentive to provide open access to other broadcasters. Only FRND regulation is able to deal effectively with this situation.

The case against special regulatory provisions for CAS

In general cable and satellite TV operators, telecommunications network operators and telecommunications regulators are in favour of harmonising CAS regulation with the proportionate regulation provisions of the proposed Access and Interconnect Directive. Apart from their concern that Article 6 is inconsistent with the rest of the Directive, they argue that:

- There is evidence in the market of incentives both for network operators to carry as rich an array of content as they can obtain, and for content providers to reach as many customers on as many platforms as possible. Although these incentives may be diluted where an operator has significant market power and vertical integration, proportionate regulation can be used to control these situations. For non-SMP operators the incentives are to provide a wide range of programming. For example, an Oftel survey in August 2000 found that the main reasons why consumers choose digital TV is because it offers a broader choice of programmes.
- Different regulation of two logically-linked parts of the supply chain (the network and the conditional access system) leads to market distortions. At present the most significant distortions are on cable networks. Thus, even though broadcasters have a right to access a cable network's CAS on FRND terms¹⁴, this right is of no value since they have no guaranteed right to access the transmission network.
- The market is too immature for any form of regulation, including proportionate regulation based on an assessment of SMP. This argument, which is propounded mainly by cable and satellite operators, suggests that the market is too dynamic for any reasonable assessment of sustainable market power. (Of course this argument can be (and is) used by others as a justification for regulating all operators, on the principle that the same rules for all is at least fair.)

¹⁴ This right is dependent on an operator producing **and** marketing the CAS. See also the discussion in Section 4.5.

4.3 Ovum/SSD analysis

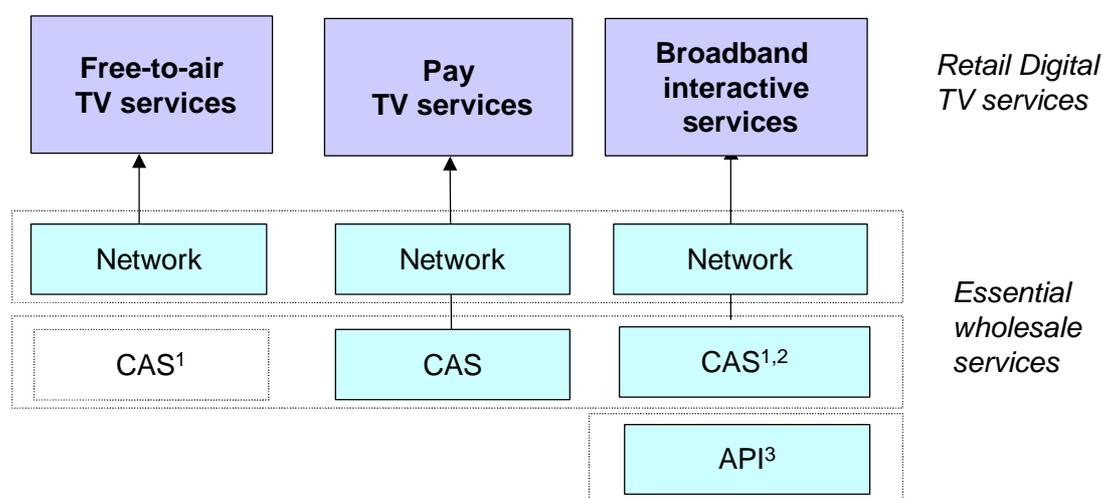
Analysis of the issues

Our analysis of the CAS environment leads us to believe that there would not be substantial difference in practice between the current FRND regulation and the proportionate regulation which forms the general provisions of the proposed Access and Interconnect Directive. We reach this conclusion from an examination of the three key issues listed in Section 4.1.

Issue 1: Conditional access is presumed to be a market to which regulation is applied, rather than waiting for the outcome of the Commission's proposed market definition process

This issue is only of practical relevance if, as a result of its market analysis and definition procedure, the Commission decides that conditional access is not a market in its own right. We believe that this is unlikely. It is often helpful to consider wholesale markets in the context of the downstream retail services, to ensure that the market definition will be sufficiently broad as to include all possible demand-side substitutes. Figure 4.2 provides such a framework for market definition in the context of retail digital TV services.

Figure 4.2: A framework for market definition



- (1) TV or interactive data services delivered free-to-air do not require the CAS but it may be used by some providers e.g for copyright management through distribution control.
 (2) Access control systems for broadband interactive services may be legally distinct from the conditional access systems referred to in Directive 95/47/EC.
 (3) Related facilities (e.g.authoring tools and memory allocation) are also required for some applications.

The relevant downstream retail services are (linear) free-to-air TV, pay TV, and broadband interactive services¹⁵. To access each of these services a

¹⁵ We do not necessarily conclude that each of these services represents a market in itself. Markets could either be more tightly defined (recognising separate constituent services within

number of wholesale inputs are essential. For each of the downstream retail markets a network platform is required; for all but free-to-air television conditional access is required, and interactive services also require access to the application program interface and, often, to related facilities such as authoring tools. Furthermore, because each of the main service groups can be provided over a range of different platforms¹⁶, a significant degree of supply substitution is likely to develop before the review. It therefore seems likely that, to the extent that a market were found to exist, any market definition process would identify CAS, possibly in conjunction with the API and related facilities, as a platform-neutral market.

Issue 2: The form of regulation is based on the obligation to provide access on fair, reasonable and non-discriminatory terms rather than proportionate regulation.

We believe that the obligations of FRND regulation and proportionate regulation have more similarities than differences. Each contains an explicit reference to non-discrimination; the concept of fairness in one is mirrored by the concept of transparency in the other; and each offers a good deal of flexibility in interpretation, in the one case surrounding the interpretation of the word “reasonable” and in the other deriving from a menu of regulatory options.

The key difference between the two approaches is that proportionate regulation allows for a variety of obligations to be imposed depending on an assessment of the market power of each operator, whereas FRND regulation implies a consistent approach to all operators. Thus, proportionate regulation is the more flexible concept, offering a broader scope of regulatory response than FRND regulation.

Issue 3: Regulation is applied to all operators which produce and market CAS rather than simply to those which have significant market power

Although this appears to be a major difference between the two approaches to regulation, in practice it may prove to be inconsequential. Those who propose to retain FRND regulation make much of the fact that it is not a particularly tough access standard, and thus can be appropriately applied to all suppliers regardless of market power. Put another way, this argument suggests that providing access on FRND terms is the norm for almost any supplier which does not have significant market power¹⁷: non-SMP operators have market incentives (through competition with SMP operators) to supply CAS on similar or better terms. Consequently, the removal of FRND regulation from non-SMP suppliers is likely to have little real impact on the market.

these service groups), or more broadly (to reflect the fact that to some extent these services overlap).

¹⁶ Following our public workshop presentation on 17 October, a few respondents seem to have misinterpreted Figure 4.2. We are not suggesting that providers of free-to-air services do not require access to the CAS or API. Rather we are suggesting that they (like other suppliers) do need access in order to supply interactive services but not to provide free-to-air television services.

¹⁷ Assuming that the definition of SMP is sufficient to deal with the case of a vertically-integrated operator leveraging market power from one defined relevant market into another.

Proposals

Proposal 1: The current rules for the supply of conditional access systems, based on FRND regulation, should be retained at least until the Commission has published a Decision on Relevant Product and Services Markets.

Ovum/SSD recognise that the different approach to regulating CAS in the proposed Access and Interconnect Directive reflects the differing regulatory evolution of broadcasting and telecommunications. Given this background, it is understandable that the broadcasting community is more comfortable with retaining FRND regulation for the time being. Furthermore, FRND regulation helps to provide legal certainty in a fast-evolving market with substantial vertical integration.

We are not ourselves persuaded that the retention of FRND regulation will lead to materially different market outcome from the application of proportionate regulation (consistent with the balance of the Access and Interconnect Directive). In the interests of simplicity and harmonisation¹⁸ we therefore find that there is no strong reason not to converge CAS rules with proportionate regulation in the longer term¹⁹. However, in order to preserve certainty, we propose that this should only be done subsequent to the Commission's publication of the first Decision on Relevant Product and Services Markets and the publication of the guidelines to NRAs about how to assess market power in those relevant markets.

4.4 Responses from the industry to our proposals

Although there has been a good deal of support for the above Ovum/SSD proposal there remain concerns, especially among some public service broadcasters and regulators. The principal concerns are that:

- The supply of CAS on FRND terms is not normal behaviour for non-dominant players *if those players are vertically integrated*, and
- Consequently, moving to proportionate regulation would lead to less favourable supply terms.

To alleviate these residual concerns of the broadcasting community, the Commission will need to demonstrate that the approach of proportionate regulation is sufficiently robust to deal with vertically integrated content and network operators.

However, we see no reason why proportionate regulation cannot be made to work in broadcasting as in the telecommunications market, so long as the Commission establishes clear guidelines for assessing SMP in relevant markets and dealing with vertically-integrated operators.

4.5 Other issues relating to CAS

The scope of CAS regulation

At the public workshop in Brussels on 17 October 2000 we made two other detailed proposals, namely that the regulation of the CAS should:

¹⁸ We are assuming here that in the longer term harmonisation is more important than continuity with the current regulatory framework.

¹⁹ Indeed, in the absence of CAS having the characteristics of a market, as opposed to a gateway or bottleneck, this approach is consistent with the conclusions reached in the Commission's 1999 fixed/mobile convergence study.

- Apply to all suppliers and not just to those which “produce and market” conditional access. The point of this proposal was to ensure that FRND regulation applied to vertically integrated operators which self-provide CAS even though they may not market it to other broadcasters.
- Include access to customer information so that a content provider can perform its own billing and subscriber management.

These proposals generated a number of responses from the industry, both in support and in opposition. There are two main arguments:

- A number of respondents considered the latter proposal to be disproportionate, potentially in breach of privacy rules, and liable to encourage “free-riding” and thereby inhibit investment. We believe that this is a misinterpretation of our proposal. We were not suggesting that a content provider should have access to information on all customers using the CAS, but only those which the content provider has recruited. Our proposal would enable this provider to do its own subscriber management as well as using the service offered by the CAS operator
- It was pointed out that both FRND regulation and proportionate regulation could be interpreted by NRAs as giving them the mandate to enforce these proposals if justified.

We are persuaded by the latter argument that no changes to the proposals of the Access and Interconnect Directive are required. Already NRAs have the freedom to interpret FRND regulation as applying to all CAS suppliers including those which self-provide (i.e. *market* to themselves). And under proportionate regulation there is clearly scope for NRAs to require SMP operators of CAS to provide non-discriminatory access to customer information. However, we believe that the Commission should take steps to ensure that NRAs’ powers in this respect are used in a consistent manner across Member States.

Access to CAS by public service broadcasters

A number of industry representatives have stressed to us the fact that television is not a “standard” market owing to its cultural, educational and social significance. Some use these arguments to justify the existing FRND regulation. Others suggest that it is in this area that the access rules need to be linked with “must carry” rules. The idea is that general interest content, such as that which comprises a public service broadcaster’s remit and/or which is subject to “must carry” obligations, should be available to all citizens.

Ovum/SSD find some merit in these arguments, although they immediately raise concerns about the definition of “must carry” or “public service” content. These concerns notwithstanding, so long as Member States retain the concept of public service broadcasting, it is reasonable that all suppliers of conditional access (and all other necessary facilities including, potentially, APIs and EPGs) should provide access to public service broadcasters on FRND terms.

At present a rule to this effect is not normally necessary because access to the CAS on FRND terms applies to all broadcasters, and because of must carry obligations on cable networks. However, either or both of these stronger requirements may be rescinded in the future. In such circumstances it may still be appropriate for public service broadcasters to be granted access on FRND terms both to the CAS and, potentially, to the API or other technical services which are not currently regulated.

Ovum/SSD consider that the strength of these arguments depends to a large extent on the definition of public service broadcasting. So long as the definition of public service broadcasting is restricted to linear free-to-air television then there is generally no need for FRND supply of CAS²⁰. Only if the definition extends to interactive services does this need arise. The Commission should therefore consider the merits of separate supply rules for public service broadcasters in conjunction with must carry rules and the role of public service broadcasting in interactive television.

²⁰ There may be specific instances when access to the CAS is required, e.g. in Germany where the platform operators insist on encryption of free-to-air television.

5.1 Outline of the key issues

Reference model

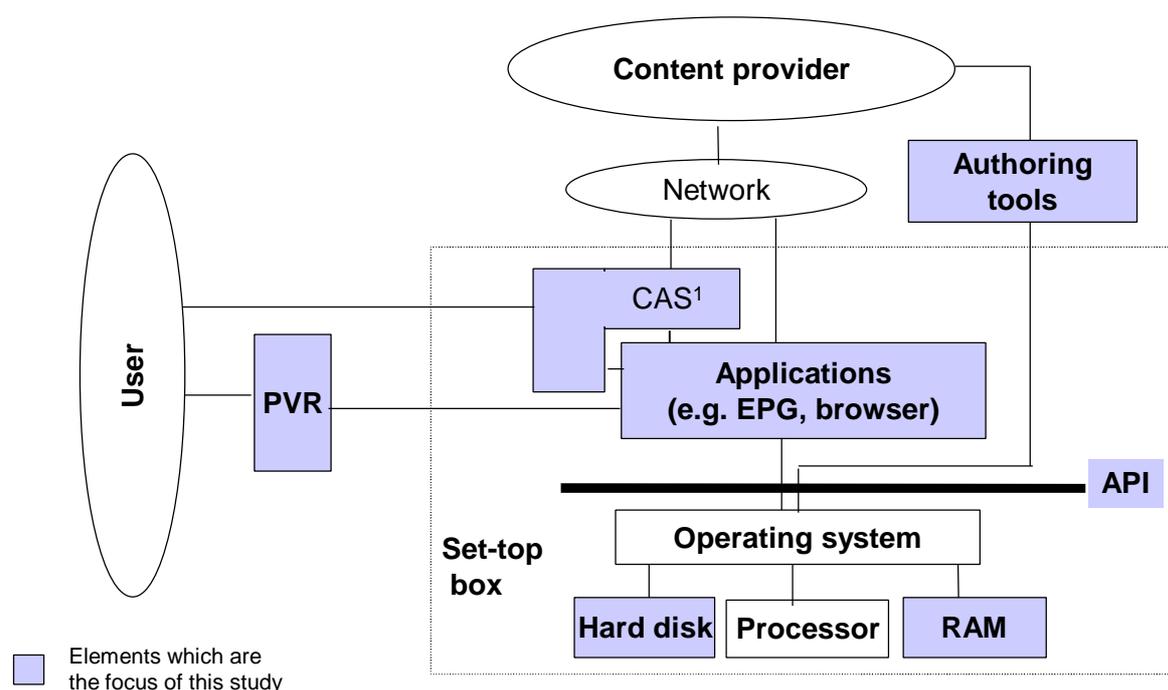
Figure 5.1 presents a reference model for considering the facilities necessary to provide interactive services using a digital TV platform. These facilities include:

- The **personal video recorder** which provides a customised means of selecting and storing content for presentation to the customer.
- The **conditional access system** which ensures that users can only access the applications for which they are authorised. Regulation of the CAS has been considered in Chapter 4 of this report.
- The **applications** themselves. Most applications are proprietary and do not require regulation²¹, but a number of them (e.g. **electronic programme guides** and **browsers**) act as gateways to a broader range of content. Access regulation is particularly concerned with these gateway applications.
- The **application programming interface (API)** which separates applications from the operating system upon which they sit. Access to the API is necessary for a content provider to develop new applications to work on the operating system of the set-top box supplier.
- **Authoring tools** which provide the means for developing new applications.
- **Memory**, both on the hard disk and in RAM, which is necessary to run applications.

The model of Figure 5.1 is not intended as a definitive reference architecture but as a working tool for regulatory analysis of various approaches to use of the set top box. The following points are worth noting:

- the user components of the reference model may be located in a single box or physically separate boxes
- the model allows for use of application programs independently of use of the CAS eg by free-to-air broadcasters.

²¹ At least they do not require access regulation; in this report we do not consider the case for content regulation.

Figure 5.1: A reference model for interactive services on digital TV


(1) Access control systems for broadband interactive services may be legally distinct from the conditional access systems referred to in Directive 95/47/EC.

Key issues

The key issues for the regulation of interactive digital TV services are threefold:

- Which of the facilities of Figure 5.1 require regulation in order to ensure effective competition in interactive services?
- What form should any regulation of those markets take?
- Should regulators act now?

5.2 Industry views

Focus on APIs and authoring tools

Although there is a lively debate within the industry as to the need, form and timing of regulation, we have found almost unanimous agreement that the key facilities to be considered for regulation are the API and authoring tools. Open access to these resources will facilitate competition in the other markets as well. For example, if a content provider is able to use the authoring tools of a platform provider and has access on reasonable terms to its API, then that content provider is able to construct its own EPG to compete with that of the platform provider.

Access to the API and authoring tools forms the focus of this chapter. However, NRAs also need to monitor the supply conditions for the other service inputs to ensure that no market failure or distortion occurs. In particular, many respondents have suggested that:

- Some regulation of EPGs is necessary at least until such time as open access to the API allows for competing EPGs to be developed. Many

support the use of FRND regulation for this purpose. Such an approach has already been adopted in the UK, where the EPG is seen as being closely-coupled with the CAS and thus subject to the same form of regulation. This, however, is not the only available solution. In Germany the EPG itself is a programme-provider-specific application, but different EPGs can be reached through a basic navigator tool which is the first screen automatically shown to the viewer. Access to the basic navigator is guaranteed under German law on FRND terms.

- Similar issues of gatekeeper control apply to the PVR as to the EPG. PVR suppliers could define user options which exclude the programmes of other content providers, or give greater prominence to their own programme content.
- Access to memory within the operating system, both hard disk storage and RAM, could also represent a bottleneck for content providers seeking to compete with a vertically-integrated platform provider. The memory bottleneck will continue to exist even if open access to APIs and authoring tools is achieved.

The status of authoring tools

Many players in the industry are concerned that authoring tools should be made available, in a timely manner and on reasonable terms, to content providers which compete with a vertically-integrated supplier of content and network services. Their aim is to ensure that competing suppliers are not disadvantaged simply because they do not have proprietary control of the authoring tools.

This is an important issue. But it is unclear to what extent the regulation of authoring tools is an issue for content regulation rather than access regulation. Certainly there are significant content issues (e.g. intellectual property rights) which are outside the scope of this report. Furthermore the Commission needs to clarify the legal issues relating to content regulation, before making any decisions on regulating this area, e.g. the compulsory licensing of authoring tools.

The case for regulating APIs and authoring tools

Most broadcasters, content providers and regulators believe that there is a strong case for regulating APIs and authoring tools. For them the case rests on the following arguments:

- TV penetration in Europe is roughly double that of the PC. Over the next ten years digital TV is expected to be installed in almost all households, whereas PC penetration is projected to reach a ceiling of 50 to 60% of households. This means that initiatives to establish the e-society, which require the widest possible range of interactive services to be made available to the widest possible group of consumers, have to rely on digital television as their primary access channel. If, because of inadequate regulation, many interactive and broadband applications are not available on digital TV, up to half the population of Member States could be excluded from the developing e-society.
- Some of the generally available functionality of analogue TV, in particular teletext, can only be provided in the digital environment through access to the API. Without open access to the API consumers would be excluded from the full range of functionality which digital TV is capable of providing, ranging from digital text services to interactive

advertising. This would either slow the uptake of digital TV as consumers develop a sub-optimal perception of its capabilities, or/and tilt the market in favour of vertically integrated suppliers.

- Unless the API operates independent of the CAS (i.e. the interface between the CAS and the API uses published definitions and/or open standards) the development of a horizontal API market will be inhibited. This would happen (and has already happened in some Member States) because market entrants would have to establish multiple interfaces with proprietary CAS.
- This is a market in which first-mover advantages can be quickly cemented into impregnable market positions, particularly given the prevalence of vertical-integration within the industry. To wait until market failure has occurred and been detected, and only then to establish regulatory remedies is to wait too long. To be effective regulation has to take place before the players establish entrenched positions.
- The use of FRND regulation has not constrained investment in, or the development of, pay TV markets. Rather it has produced the legal certainty which underpins investment. It is reasonable to suppose that regulation would have a similar effect in the interactive TV market.

The case against regulating APIs and authoring tools

Most network and digital TV platform providers believe that it is too early to consider regulating the interactive services market. They argue that:

- The market is too embryonic to determine whether there is or ever will be any market failure worthy of regulation. The penetration of digital TV in Member States is less than 10% on average²², and the penetration of interactive services is a tiny fraction of the digital TV market.
- There is a significant risk of regulation reducing or distorting market development. Consumer needs for interactive services are highly uncertain and much of the current investment in applications is highly speculative. If regulation were to burden investors with open access requirements at this early stage of market development it would curtail innovation and investment.
- There are market incentives for suppliers to open interfaces even in the absence of regulatory enforcement. For example, all European members of the digital video broadcasting industry have undertaken to support the Multimedia Home Platform standard which is being developed by the TV Standards project. MHP provides for a standardised API so that third parties will no longer be required to adapt their applications to proprietary standards. There are also market examples (e.g. NTL in the UK, Canal+ in France) of operators offering open access to their platforms in order to achieve richer content provision and, ultimately, more customers.
- Similarly, suppliers have incentives to license their authoring tools in the same way that computer vendors have open-source software (e.g. the Microsoft Windows Development Toolkit). In the digital environment there are few limitations on channel capacity, with the

²² Although penetration is unevenly distributed being >20% in some markets as well as rapidly growing.

result that content becomes the key to success. Most platform operators will have incentives to license their authoring tools (and to make them available on reasonable terms) in order to make a richer array of interactive content available to customers on their platform. Even for vertically-integrated suppliers these incentives exist and should provide sufficient discipline towards open access, especially if working alongside a stringent application of competition law (as for example applied in the recent Microsoft case in the US).

The form of API regulation

There are strong differences of opinion (even between respondents with a common view on the case for API regulation) as to the best form of regulation.

- Some suggest that regulation is acceptable only if it focuses on operators with significant market power, either directly in the provision of the API, or leveraged from another closely related market (e.g. content). Placing obligations on all operators would simply deter investment by smaller players and reinforce the position of entities with market power.
- Others argue that the regulation should apply to all operators of digital TV networks in order to maximise consumer benefits and achieve a rapid uptake of digital TV. It has also been argued that obligations placed solely on SMP operators create a disproportionate burden on these operators, requiring them to bear all the costs of establishing a competitive market for interactive services.
- Some suggest that only the adoption of a common European standard (i.e. the MHP standard) would create the market conditions necessary to allow all consumers to benefit from the innovation open networks will provide.
- Others are fundamentally opposed to the enforcement of standards, believing that there is a track record of failure in standards imposed by regulation (e.g. the X400 email standard). In general the market is able to work out better solutions that are satisfactory to consumers. So the most successful standards are those which an industry adopts voluntarily.

5.3 Ovum/SSD analysis

In trying to reconcile, or at least to take account of, the many different views held within the industry, Ovum/SSD has been mindful that:

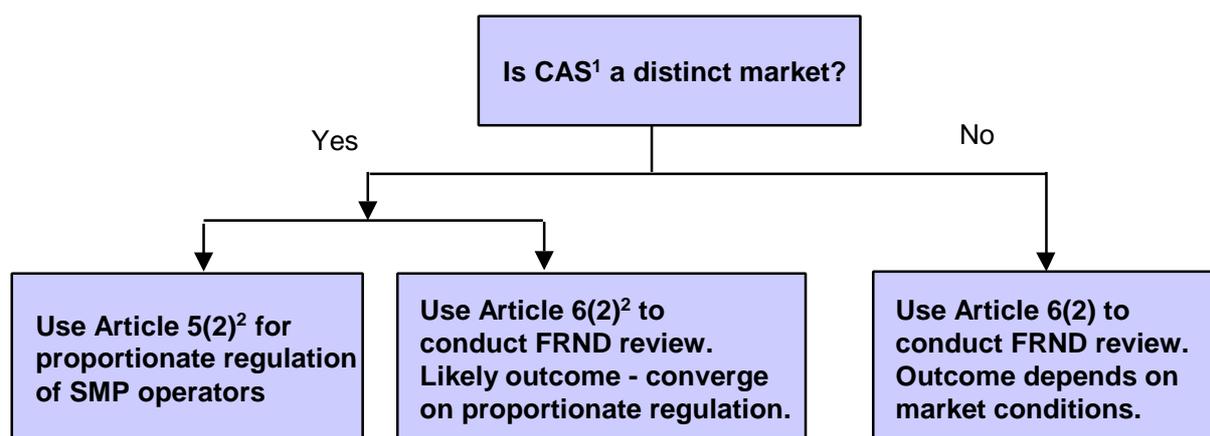
- The measures in the proposed Access and Interconnect Directive are unlikely to be implemented in Member States significantly before 2003;
- By that time the market for interactive services, much of it on digital television platforms, will be considerably more mature than it is today.
- By that time the Commission will also have published a Decision on Relevant Product and Services Markets, identifying whether CAS (with or without associated facilities) is a distinct market.
- There is scope within the new Directive for a further review of the need for regulation of digital TV, and explicitly for the extension of FRND regulation to include APIs and EPGs.
- If, as a result of such a review, the Commission decides to extend FRND regulation to APIs and EPGs, this could be achieved by means

of a Regulation (similar to the one currently being adopted for local loop unbundling in the telecommunications market) which could become law within a period of one year.

- The regulation of APIs could be introduced across all Member States by mid-to-late 2003 at the earliest, following both the adoption of the new Directives and any Regulation which the Commission might issue on API regulation.
- In the meantime NRAs are able to regulate APIs and EPGs as warranted by national market conditions, either using the provision for FRND regulation of CAS or by regulation of operators with significant market power²³ in the market for digital interactive services²⁴.
- With or without the extension of FRND regulation to APIs and EPGs, once the new Directives become law in 2003, NRAs will be able to apply proportionate regulation of operators with significant market power in the market(s) for digital interactive services²⁵.

Figure 5.2 illustrates how these points may be formed into a logical decision tree upon which our proposals are based.

Figure 5.2: Decision tree for regulating CAS and associated facilities



Notes:

1. The market for CAS may be defined to include associated facilities such as API and EPG, and/or to include access control systems for broadband interactive services.
2. Article numbers refer to the draft Access and Interconnect Directive.

Proposals

Proposal 2: Once a Decision on Relevant Product and Services Markets has been published, and in any case no later than the end of 2002, the Commission should conduct a review of the supply of CAS, pursuant to Article 6(2) of the draft Access and Interconnect Directive. This review,

²³ Based on the existing definition with a presumed 25% market share threshold.

²⁴ As, for example, has been done by Oftel/ITC in the UK.

²⁵ Or whichever equivalent market is defined by the Commission's market analysis process.

should consider a) whether there are grounds to retain current FRND regulation of CAS for pay TV services, and b) whether there are grounds to extend FRND regulation to include associated facilities (e.g. APIs and EPGs) for pay TV services and/or broadband interactive services.

A review of current CAS regulation is necessary regardless of the outcome of the Decision on Relevant Product and Services Markets, but it will need to be on a different scale and is likely to have a different outcome depending on whether CAS is identified as a distinct market. The review should not therefore take place until the first market definition process is completed.

Our proposal is designed to give the Commission the maximum amount of time, and thus market information, before taking a decision on regulating APIs and authoring tools. There are two major reasons for waiting until 2002 to make this decision:

- The market for interactive services on digital television is currently embryonic, and it is too early to tell whether and to what extent regulation is required.
- The Commission could not introduce regulation, based on the review procedures outlined in Article 6 of the new Access and Interconnect Directive, until 2003 at the earliest.

By reviewing the state of the market before the end of 2002, the Commission will still have time to enact a Regulation (if required) to come into force immediately after the new Access and Interconnect Directive is adopted by Member States.

Proposal 3: If the Decision on Relevant Product and Services Markets finds that the supply of CAS (perhaps also including APIs and EPGs) constitutes a distinct market, then the Commission should seek to converge all regulation of digital TV operators (including regulation of CAS as well as APIs and EPGs) into the generic measures of the Access and Interconnect Directive based on “proportionate regulation” of operators having Significant Market Power.

If CAS is identified as a distinct market, the question is whether proportionate regulation provisions should apply to the CAS market, as to all other markets, or whether there is a need to continue with FRND regulation of all suppliers.

It is our opinion that operators which do not have SMP will naturally tend to offer open access to their platforms on fair, reasonable and non-discriminatory terms. If this is true, then the extension of FRND regulation to APIs and other facilities will not be required. Instead, the use of proportionate regulation of SMP operators, with its in-built capability for more aggressive regulation than is possible under FRND, will more likely produce the desired market outcomes.

Proposal 4: If the Decision on Relevant Product and Services Markets does not find that the supply of CAS (with or without the inclusion of APIs and EPGs) constitutes a distinct market, then the Commission should consider either retaining FRND regulation for CAS or extending FRND regulation to include APIs and EPGs if warranted by market conditions.

If CAS (and associated facilities) is not identified as a distinct market, then proportionate regulation of SMP operators cannot be applied. In these circumstances there may be a need to retain or extend FRND,

depending on market conditions at the time of the review under Article 6(2) of the draft Access and Interconnect Directive.

We recognise the concerns of many respondents, that there are at this stage considerable uncertainties in the processes (under the new Directives) for market definition and assessment of significant market power. Many are concerned that these processes will not be sufficiently sophisticated to deal with the peculiar structure of the digital television industry, with its high levels of vertical integration and potential for leverage between related markets. Some question whether the threshold for SMP may be too high, or that markets will be defined too broadly, with the result that some operators go unregulated whilst nonetheless being able to exert undue market influence.

Ovum/SSD considers that many of these concerns are likely to prove unfounded, especially if the Commission issues guidelines on the definition and regulation of SMP operators in vertically integrated markets (see Proposal 6 below). If we are right then there will be no need to extend FRND regulation beyond 2002 or beyond the existing controls on CAS providers. However, we believe it would be unwise at the present moment for the Commission to rule out the possibility of extending FRND regulation, in case the problems of vertical integration on the digital TV market prove to be more intractable than we anticipate.

Proposal 5: The Commission should continue to promote the MHP standard.

MHP provides a potential vehicle for achieving open access to digital TV platforms. We do not consider that the Commission should mandate the use of the MHP standard²⁶, but it should create suitable incentives for the industry to adopt MHP if it proves to be an appropriate means of achieving open interfaces.

Proposal 6: The Commission should consider issuing guidelines to NRAs for defining and regulating SMP operators in the case of a heavily vertically-integrated industry, such as digital television.

We, along with many in the industry, are particularly concerned about the issues of vertical-integration in the digital television market. In general, vertical integration is dealt with by competition law. However, to the extent that vertical integration is a structural problem specific to the digital television market, we consider that it could be dealt with by the Commission establishing guidelines for regulating SMP operators²⁷. The Commission should consider whether the guidelines to be produced by DG Competition in response to the January 2001 request of the Council are sufficient, in this context.

²⁶ The technical specification on the MHP standard was published by ETSI on July 12, 2000 (TS 101 812 Version 1.0)

²⁷ As, for example, in the Commission's decision regarding British Interactive Broadcasting (case IV/36.539) where conditions were imposed to ensure third party access to pay TV channels.