# ACCESS ISSUES IN THE DIGITAL TV ENVIRONEMENT

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## Working Group I – Access issues

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## *Introductory note*

The term "access", when considered within the TV sector, has a wide range of meanings: access to the public media by significant social and political groups (as in article 20.3 of the Spanish Constitution); access to TV programmes by natural or moral persons wanting to exercise their right of reply (as recognised by article 23 of the "Television without Frontiers" Directive); access to transmission time in certain TV channels by independent third parties (as in article 31 of the German *Rundfunkstaatsvertrag*), etc.

The present paper will limit itself to focussing on those issues related to access in a digital TV environment. Recent experience has shown that the outcome of competition among broadcasting companies increasingly depends on a number of access-related issues. Anyone wishing to compete in the digital TV markets needs access to audio-visual content, delivery networks, the technology necessary to provide new services, etc. Access can be sometimes be restrained by different reasons, one of them being the use of proprietary technologies by some media companies. Although this kind of practice must be, in principle, deemed as legitimate, in some cases (e.g., when there is a high degree of vertical integration), it might affect the ability of some media companies to compete in the digital TV market, or it might hinder the interoperability of digital TV services. Some of the more relevant access-related issues of this kind are connected with Conditional Access Systems (CAS) and associated facilities, such as Application Programming Interfaces (APIs) and Electronic Programming Guides (EPGs), whose regulation will be the main topic of this report.

## *1. Provision of digital TV services*

### *1.1. Structure of the digital TV market*

The structure of the digital TV market can be explained by looking at the different stages in the supply chain. It is possible to identify at least four markets or layers of participants. Control of key access points in any of these layers may affect competition or media pluralism in the whole system. The four markets or layers that have been identified are the following:

- *Content providers,* who develop multimedia information or elements thereof(e.g., TV producers)
- *Content and service providers/packagers,* who gather information and entertainment content and add value by merging or packaging them into bundled interactive offerings for delivery (e.g., pay-TV broadcasters)
- *Network providers,* who manage the networks and transport information and entertainment content (e.g., satellite distribution service providers, cable networks operators...)
- *Access Application or equipment providers*. Access applications incorporate such elements as consumer electronic devices (such as set-top boxes, integrated digital TV sets, PC-TVs, personal mobile communicators, etc.), data encryption (e.g., CAS) and application software (e.g., navigation software, as EPGs).

This report deals with some access-related issues that relate to the last of the four stages identified in the digital TV supply chain. However, it is important to bear in mind that in a vertically-integrated market such as digital TV, all stages of the digital TV supply chain are

closely related to each other, as exemplified by the impact of the regulation of Italian soccer TV rights in the Italian CAS market[1].

## *1.2. Gateways and access issues*

As shown by several examples, there is scope for dominant positions to arise in the digital TV market, focused around certain bottlenecks in the value chain. Some of these bottlenecks may appear at gateways between service delivery and consumption. For example, set-top boxes, which decode the encrypted signals used for pay-TV, are "gateways" between programme makers and viewers. A gateway of this kind is a necessity in the digital pay-TV market: without one, it would be impossible for a pay-TV service to charge viewers or offer customised bouquets of services. Yet if there were only one gateway (one encryption technology, one CAS) controlled by a single company, its owner would obtain monopoly power, which would allow him to control not just the CAS market, but also upstream or downstream ones.

In technology-driven markets such as digital TV, one way to gain control of a gateway is to develop a proprietary solution that becomes the market standard. Given the uncertainty in the development of the media markets, both manufacturers and customers will tend to choose widely accepted solutions ("band-wagon" or "tipping" effect). Some companies compete to get a "first mover advantage", and they are even willing to subsidise the take-up of their services or technologies in order to become the standard in the market. While these attitudes may speed up the take-up of new services, regulators should avoid a foreclosure of the market, which could end up being dominated by a "gatekeeper" controlling of one or several "bottlenecks" in the value chain.

Regulatory intervention may be needed in order to ensure access to the digital TV market, which is a pre-condition for fair competition and pluralism. Several public authorities (e.g., the European Community) have decided to regulate CAS, as they are gateways whose control by a strong vertically-integrated company could allow it to dominate the pay-TV market. Regulatory authorities are currently studying whether some facilities associated to CAS and decoders (such as APIs and EPGs) are also gateways that should be subject to regulatory intervention, in order to avoid future access problems.

### 1.2.1. Conditional access and decoders

Conditional Access Systems (CAS) are technical systems which ensure that only authorised customers may have access to protected services (e.g., pay-TV). In the digital TV environment, the provision of conditional access services implies the encryption of the TV signal and the use of decoding electronic devices (known as set-top boxes or decoders, which can be sold or rented separately or integrated in a digital receiver).

Conditional access systems may be

a) Simulcrypt: This involves the creation of proprietary systems, so new service providers who want their services delivered to the existing decoder population of another service provider must negotiate access terms to that decoder population[2].

[1] In principle, no digital pay-TV platform is allowed to control more than 60% of the soccer TV rights of the Italian League (article 2 of Act 79 of 29.03.1999). As a consequence, Italian customers, unlike customers of other European countries, may be willing to subscribe to more than one digital platform, as it is the only way to have access to all TV broadcasts of the matches of a particular soccer team. This brings the issue of decoders' interoperability into the spotlight, as those customers would expect to have access to several platforms with one single decoder, in order to avoid extra costs and several set-top boxes cluttering their living rooms.

b) Multicrypt: This system would make it possible to operate different CAS with a single decoder. The CAS would consist of a detachable conditional access module connected to a set-top box via a common interface. This would mean that the host set-top box could interact with a wide variety of conditional access modules, without the host having to identify the particular CAS employed.

The use of multicrypt or simulcrypt CAS may affect the ability of consumers to receive programmes from different digital TV platforms:

- The use of multicrypt CAS would allow users to receive the programmes of any digital pay-TV platform with a single decoder: they should just insert the CAS module of the digital pay-TV platform in question in the common interface of the decoder[3].

- The use of simulcrypt CAS implies that, in principle, the subscribers of a digital pay-TV platform would only be able to receive the programmes of this platform through their decoders, unless the CAS provider reaches an agreement with other digital pay-TV platforms. If such an agreement is not reached, the other digital pay-TV platforms would have to launch their own population of decoders (which could by very costly, and could deter potential competitors from entering the market), and customers wanting to receive programmes from competing digital pay-TV platforms should buy or rent more than one decoder.

If dominant conditional access service providers use proprietary technology (simulcrypt CAS), they might find themselves in a gatekeeper position, as access to set-top decoding equipment is dependent on the CAS provider's agreement. These providers could be in powerful positions (especially if they are vertically integrated and they also control delivery networks and content), and they could have the potential to abuse their position in a number of ways:

- Services that are viewed as potential competitors may be flatly denied access;
- Gatekeepers may exert undue pressure on entrants to join the service provider's own bouquet;
- Gatekeepers may allow only access on unfavourable terms to dissuade potential competitors;
- Even if there is a rule requiring non-discriminatory pricing, the gatekeeper may simply charge all users a monopoly price;
- There may be pressure to accept bundled services (e.g., CAS and subscriber management services), or there may be contractual restriction on flexibility, preventing new entrants from switching to rival packages.

Multicrypt CAS would directly ensure open access to the market, which could benefit competition and media pluralism. However, this system may not be accepted by some operators, who could well regard it as contrary to their business models.[4]. Moreover, some analysts argue

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[2] See M. Cave and C. Cowie, "Regulating Conditional Access in European Pay Broadcasting", *Communications & Strategies*, nº 23, 1996, p. 128.

[3] A multicrypt decoder ensures that CAS is not a technical barrier, but requires that CASs of competing operators are available in replaceable CA modules. Moreover, it is necessary to take into account that nowadays, most decoders are only able to receive TV signals from just one kind of delivery network (cable, satellite or DTTV). Under such conditions, a multicrypt decoder would only ensure access to those digital pay-TV platforms using the same delivery network (e.g., digital satellite pay-TV platforms, but not cable or DTTV ones). This latter problem could be solved by connecting "sidecar" demodulators (hardware accessories enabling, a terrestrial receiver to decode satellite signals, for instance) to the common interface.

[4] In particular, pay-TV operators worry about "free-riders". Pay-TV operators subsidise pay-TV decoders, as their retail has not been successful in the countries where this has been tried: consumers have perhaps

that mandating multicrypt CAS would not be proportionate, as simulcrypt decoders might ensure enough interoperability if public authorities oblige CAS providers using proprietary technologies to provide access to third parties in fair, reasonable and non-discriminatory conditions.

### 1.2.2. APIs

The Applications Programme Interface (API) is an element of the decoder architecture that defines how applications are displayed and managed. It acts as an intermediary between the application and the operating system, translating interactive TV applications written in a high-level software programming language into a low-level language the decoder can understand. APIs therefore fulfil tasks that most people would associate with those fulfilled by Windows in the PC world.

The APIs currently available on the market (Open TV, Mediahighway, etc.) use proprietary technology. Proprietary APIs will only run applications that are fully compatible with their standards. So, if decoders have proprietary APIs embedded, they will not allow users to receive interactive services from digital platforms that use an incompatible API.

- This situation could affect the ability to compete of those new entrants wanting to provide interactive services (associated to TV programmes or not), as they would be forced either to use the API of the dominant operator (which could unduly take advantage of its position), or to create a new population of decoders with their own API (which could be too costly, and it would imply an inability to provide interactive services through the existing population of decoders).

- The use of incompatible APIs could also limit the ability of consumers to receive all digital TV services (including interactive services) with a single receiver.

- The lack of standardisation at this level could also be negative for the consumer equipment market: it could deter consumers from buying decoders or integrated digital TV sets, as the consumers would be tied to an API proprietary technology which could be abandoned soon afterwards, and that in any case would not allow them to receive all the digital services offered by the different digital TV platforms.

- The companies that provide interactive services (i.e., home banking) would have to convert their applications if they wanted to make them compatible with different proprietary APIs. This means they would have to face a relevant increase of their costs if they wanted to reach the customers of digital platforms using incompatible APIs.

The DVB (Digital Video Broadcasting) has developed an open API, the MHP (Multimedia Home Platform), which would make it possible to replace software (by downloading new versions) and to achieve backward compatibility with existing APIs through plug-ins. This could be a first step to a new software-led environment for receivers, much more flexible than

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found them too expensive or hesitated because of the uncertainties caused by competing systems. Pay-TV operators have therefore assumed the cost of bulk-purchasing decoders and either renting or giving them to customers, in order to promote the take-up of their services. These operators claim that if they are forced to use multicrypt solutions, any other pay-TV operator could launch a platform using the decoders paid for by the operator that had subsidised them. However, some analysts consider that the potential "free rider" problem could possibly be solved by permitting operators to close the common interface during a certain period, on the model of simlock in GSM phones, although some authors consider that this solution could be unsatisfactory from the competition point of view. An alternative would be to devise some scheme for annualising the cost of the subsidy and sharing it among market participants (subsidy recovery).

the hardware approach that characterised analogue and the early digital markets (when the reception of the services of each platform implied the use of its hardware). An open system as MHP would support a number of business models, thus fostering the development of the digital TV market. Given its advantages for consumers and the industry at large, governments may consider mandating MHP, although some experts warn that governments should just promote the uptake of these systems without "picking winners", as imposing standards would not create markets.

### 1.2.3. EPG

Electronic Programme Guides (EPGs) are navigation aids similar to browsers in the PC world, which display lists of available services. They will become increasingly important to users as they have access to more and more digital channels. Also, because they are the first service that the viewer sees when a digital receiver is switched on, EPGs are a point of strategic control in digital television environments.

EPGs tend to be operated by vertically integrated digital platforms. A gatekeeper might set barriers to competition with practices such as program exclusion, discrimination, cross-promotion and proprietary branding/advertising. Rival broadcasters could provide competing EPGs, although this solution raises technical problems, such as the expensive use of transmission capacity or the memory requirements of the set-top box.

A key element for EPGs is Service Information (SI), as it can be used as a simple guide in raw form, or used by sophisticated EPGs to update their listings. A particular operator's EPG may not recognise another broadcaster's SI, and therefore be only able to identify its own channels and not those of third parties. Some organisations (such as DVB) are trying to create standard specifications for Service Information in Digital Broadcasting Systems.

In a new digital environment, the problems related to EPGs may affect not only programmes delivered as part of digital bouquets, but also traditional free-to-air broadcasters, including the public service broadcasters. Some provisions (such as the EC Directive 95/47) ensure that digital decoders must pass free-to-air transmissions in respect of audio and video, but they do not cover interactive elements or navigation aids.

On certain platforms, in order to display in the EPG a service that is not part of the CAS platform (e.g., a digital free-to-air TV programme), this service needs to obtain a number from the operator. This enables it to be listed in the EPG itself.

- In some cases, pay-TV platforms locate all receivable services and list them in a basic navigator. A higher level EPG is reserved for pay-TV services. If all broadcasters are listed in the basic navigator, should any access be mandated to the higher level EPG?

- Other platforms have a single EPG. These platforms issue EPG numbers to any broadcaster that is willing to conclude a commercial EPG agreement against a fee. Broadcasters and platforms could have problems reaching agreements on the amount of the fee and on the position of the broadcaster's programme in the EPG. Alternatively subscribers can manually tune to other services which are not automatically listed on the EPG and save them in the "Other channels" screen on the EPG. The difficulty that consumers face in selecting particular channels manually is a source of concern. Sometimes these user preferences are lost when the decoder is updated.

It may be necessary for authorities to encourage or mandate solutions to these problems.

### 1.2.4. Other associated facilities (decoder storage capability, return path)

Other associated facilities (such as the decoder storage capability or the return path) have the potential to become bottlenecks. Even if a dominant CAS operator were forced by the authorities to ensure that all broadcasters have access in fair, transparent and non-discriminatory conditions to the technical means needed to allow the reception of their digital TV services, this dominant CAS operator could still be able to restrict the ability of new entrants to compete, e.g., by setting unfair conditions on the access to a return path, or by using or reserving all the decoder storage capability for its own services.

## *2. The regulation of access issues in a digital TV environment*

### *2.1. Policy goals*

According to several analysts, the main policy goals in this field are[5]:

- Economic regulation (ensuring free competition and the removal of barriers to entry into the market);
- Safeguarding of media pluralism;
- Promotion of the new technologies, as a key factor in a convergent information society;
- Consumer welfare (interoperability; diversity, availability and affordability of new services);
- Promotion of the national industry (service providers, content producers, manufacturers, etc)

The main policy problem is how to strike the right balance between conflicting interests. European broadcasting has a strong tradition of *ex ante* standardisation and interoperability that differs from telecommunications, and is radically different from the information technology industry. As the European Commission has pointed out, the problem is how to reconcile these very different traditions during the early stages of convergence. Policymakers and consumers expect broadcasting to continue to fulfil its traditional social and cultural role. New digital technologies offer much more rapid service evolution, but without the certainties that *ex ante* standardisation guaranteed in the analogue era. The traditional assumption that all broadcasters were using the same systems and that all their services could be received at all times on all receivers may no longer be true.

The fact that proprietary technologies are allowed may be an incentive for companies to innovate and to subsidise the take-up of their services. Consumers have an interest in continuing technical innovation, which can lead to an increase in the quality and quantity of services available, as has happened in the PC world, in which standards are not mandatory, and consumers take increasing responsibility in exchange for increased choice.

Nevertheless, consumers also have an interest in interoperability, which has historically been a feature of the TV world: most consumers will not be willing (or, in many cases, able) to constantly renew their equipment in order to be able to experience the benefits of every innovation.

Public authorities can:

[5] On this matter see, among others, D. Levy, "The regulation of digital conditional access systems - A case study in European policy making", *Telecommunications Policy*, 1997, nº 7, pp. 661-676 and S. Kaitazi-Whitlock, "The Privatising of Conditional Access Control in the European Union", *Communications & Strategies*, 1997, 1st quarter, nº 25, pp. 91-122.

a) Leave it to the market to decide which standards will be used, at the risk of reducing interoperability and, thus, the traditional universality of TV services.
b) Promote the adoption of open standards, reached by industry consensus and not imposed by *ex ante* regulation, at the risk of a possible failure from the industry to provide a timely and widely accepted solution.
c) Impose the adoption of open standards, in order to increase interoperability and foster consumer and manufacturers' confidence. The public authorities should then "pick winners" from amongst competing standards, at the risk of taking wrong decisions not supported by the market.

The degree of intervention of public authorities may well depend on the overall situation of the digital TV market, and on the views of the authorities as regards its future development. Some authorities believe that it is necessary to apply regulatory measures to ensure that no one platform becomes dominant (at the risk of introducing "too much competition" in which some consider a natural monopoly). Other authorities are in favour of allowing companies to take their strategic decisions (about merger, standards, etc.), in order to ensure economic viability (at the risk of eliminating competition or damaging pluralism in the media). Those who advocate this second option believe that competition should take place within the same platform at national level. In any of those cases, guaranteeing access to gateways, related to the reception of digital services, remains one key policy goal.

### *2.2. Legal approach: General competition law vs. sector specific legislation*

In order to deal with access issues in the digital environment, public authorities can rely solely on general competition law, or they can additionally approve special regulatory provisions.

General competition law is certainly a useful legal tool to deal with access-related issues. It forbids anti-competitive practices, such as the abuse of dominant positions or cartels. Its provisions are behavioural rules, which easily adapt to new circumstances (as opposed to sector-specific provisions, which involve long decision-making processes, and which need to be amended to cover adequately new situations).

Moreover, general competition law entitles public authorities to assess the impact of the mergers in the market, and, if necessary, to approve them only if the parties comply with the commitments they have entered into (e.g., to use a standard API, like MHP) with a view to rendering the concentration compatible with competition law.

However, general competition law has its drawbacks. It is difficult to apply, as it relies on complex market analysis and decisions are taken on a case-by-case basis (thus creating considerable uncertainty among both affected parties and new entrants). Moreover, competition authorities may not sufficiently take into account other legitimate interests (consumer welfare, media pluralism), whose protection may only be ensured by sector specific legislation.

Some authorities (e.g., those from the European Union) have considered it appropriate to approve sector specific legislation related to CAS. There is an on-going debate about whether it would also be necessary to approve sector specific provisions for APIs or EPGs. The debate also encompasses other subjects, such as the level of standardisation that can be imposed by sector specific legislation in a rapidly changing environment, or the role that self-regulation or co-regulation should play.

Sector specific regulation on this field may not only be found in legal instruments such as Acts or Decrees. Some obligations for broadcasters as regards CAS and associated facilities are set

out by the regulatory authorities in the licenses[6]. While this approach has certain advantages, it could nevertheless lead to a certain fragmentation of the market, as each operator may be subject to different obligations, set out by their licences and, eventually, by the competition authorities.

# *3. Access issues: the European approach*

## *3.1. European Union*

### 3.1.1. Sector specific regulation

#### a) EC Directive 95/47

The objective of the European Union in this field was to arrive at a compromise between those that wanted open decoders (notably, free-to-air broadcasters, and specially public service broadcasters) and those that proposed proprietary, simulcrypt systems. Those in favour of open decoders feared that CAS providers (normally vertically integrated pay-TV operators) would obtain an incontestable first-mover advantage and foreclose entry into pay-TV markets by second movers. For their part, pay-TV operators were concerned that regulators would destroy their business model by mandating multicrypt (common interface). They intended to subsidise the acquisition of decoders in order to promote the take-up of their services and, were multicrypt CAS to become mandatory, a classic free-rider problem would appear, as any other pay-TV operator could launch a platform using the decoders paid for by the operator that had initially subsidised them.

The European Union finally decided to accept both multicrypt (open) and simulcrypt (proprietary) CAS. It attempted to protect public interest in a way it considered proportionate by imposing some behavioural rules, notably in article 4 of the EC Directive 95/47[7]. Those rules include:

- A requirement on conditional access service providers, who administer a population of digital television decoders, to offer conditional access services to all broadcasters on fair, reasonable and non-discriminatory terms in order that the programmes of those broadcasters may be received via that population of decoders.

- A requirement that all free-to-air broadcasts should pass unhindered through digital decoders' conditional access systems.

- Requirements on transparency, including the need for operators to keep separate accounts for conditional access and other activities, and also for broadcasters to publish lists of tariffs, which take account of whether associated equipment is supplied or not.

#### b) The proposal for a new Directive on interconnection and access

A new Directive on interconnection and access should deal with all access issues related to electronic communications networks, including conditional access systems and associated

[6] For example, according to the Commission Communication *The development of the Market for Digital Television in the European Union - Report in the context of Directive 95/47/EC*, COM (1999) 540, 09.11.1999, p. 19, in the UK the Independent Television Commission (ITC) included the Common Interface as a licence condition for the digital terrestrial pay-TV operator ON Digital.

[7] Directive 95/47/EC of the European Parliament and of the Council of 24 October 1995 on the use of standards for the transmission of television signals.

facilities. According to the version of the Proposal for a new Directive presented by the European Commission in July 2001, specific rules for access in the digital TV sector are needed as competition rules alone may not be sufficient to achieve all public policy goals, in particular the safeguarding of media pluralism (Recital 7). Although EC Directive 95/47 is to be repealed, the behavioural rules that its article 4 imposed upon CAS providers have been incorporated into the new Proposal (article 6 and Annex I). These rules are deemed necessary to ensure that a wide variety of programming and services are available. The Proposal acknowledges that technological and market developments could make it necessary to review these obligations on a regular basis, in particular to determine whether there is justification for extending obligations to new gateways, such as APIs and navigation systems (e.g., EPGs).

The Commission, when approving the Proposal it presented in July 2001, did not accept some amendments proposed by the European Parliament, which intended to extend immediately the current regulatory regime on CAS for digital TV to associated facilities such as APIs and EPGs. Furthermore, one proposed amendment mandated the availability of a common interface and the licensing of holders of industrial rights of their encoding systems in the form of replaceable modules to be accessed through the common interface. The Commission does not support that degree of intervention, as it considers that the best way to deal with developments in such a rapidly changing field is adequate consultation with market players. It is still to be seen which approach will be followed by the new Directive in its final version.

### 3.1.2. Application of EC Competition Law to access issues related to Digital TV

The European Union does not only apply sector specific measures related to CAS and associated facilities: EC competition law is also being used to safeguard fair access to the digital TV market.

As early as 1994 (i.e., prior to the EC Directive 95/47 being approved), the EC Commission decided to forbid a concentration (Media Service Group[8]) because it considered that the company resulting from this operation (a merger involving Bertelsmann, Kirch and Deutsche Telekom) would obtain a dominant position likely to endanger competition in several markets, including the emerging market for technical and administrative services for pay-TV (CAS, subscriber management services, EPGs, etc.). The merger prevented possible competition between the companies involved, and, once the new company was established in the markets, it was very unlikely that any other company would be able to compete against it, on the face of the combined competitive advantages of the parties to the merger. In this scenario, the proprietary CAS which MSG intended to use could easily become the market standard, which would allow this new company to use its gatekeeper position in this market to restrict competition.

The EC Commission subsequently opposed several proposed mergers that followed similar patterns:

- Nordic Satellite Distribution [NSD] (1995[9]): NSD was a joint venture set up by Telenor, TeleDanmark and Kinnevik, which was denied permission to provide digital pay-TV services and technical and administrative services for pay-TV because the Commission feared that the creation of a company which controlled content and distribution means and which intended to use a proprietary CAS would have led to the creation of a dominant position likely to restrict competition in the market.

[8] Decision *MSG Media Services*, of 9.11.1994 (OJ L 364, 31.12.1994, p. 1).
[9] Decision *Nordic Satellite Distribution*, of 19.7.1995 (OJ L 53, 2.3.1996, p. 20).

- Cablevision (1996[10]). This was a joint venture set up by the Spanish telecom incumbent Telefonica, and the only Spanish pay-TV and CAS provider at that time, Canal Plus, for the provision of cable pay-TV and technical services for pay-TV. The EC Commission expressed serious doubts as to whether this operation was compatible with the common market, because the creation of this new vertically integrated company could prevent new players from entering any of the affected markets. The parties finally decided to withdraw the operation before the Commission could adopt a final Decision.

- Bertelsmann/Kirch/Premiere and Deutsche Telekom/BetaResearch (1998[11]): the Decisions of the Commission are very similar to the MSG Decision, since the companies involved (Kirch, Bertelsmann, Deutsche Telekom) were the same, and the Commission also considered that their joint venture could also restrict access to several relevant markets, including the market for technical services for pay-TV. Once more, this joint venture, which would dominate content and delivery networks, intended to use a proprietary CAS, and even if the parties made some undertakings (disclosure of the set-top box interface, provision of non-discriminatory access), the Commission found them insufficient to guarantee unimpeded market access to third parties.

- Telewest (2000[12]): Microsoft intended to acquire joint control over the British cable operator Telewest, but the Commission started an in-depth probe into the deal over fears that it would reduce competition regarding the cable digital market, and in particular the supply of software for digital set-top boxes in the United Kingdom. There were already links between British cable operator NTL and Microsoft, and if the latter was to jointly control cable operator Telewest, it could end up imposing its software for set-top boxes as market standard in the UK. Microsoft finally decided to give up joint control over Telewest. Following this case, the Commission decided to examine Microsoft's strategic investments in leading European broadband cable operators. In order to avoid problems with the European competition authorities, Microsoft agreed not to influence technology decisions of European digital cable operators[13].

In some cases, the EC Commission has cleared some concentrations or agreements that affected the market for technical services for pay-TV only after the parties offered certain commitments.

- In the British interactive Broadcasting case [BiB, now Open] (1999[14]), on the other hand, the parties (BSkyB, BT, Midland Bank and Matsushita) were willing to agree to substantial conditions on the operation of the joint venture, which provides digital interactive services (such as limited internet access or home banking) by means of digital satellite broadcasting with a telecommunications return path. As originally notified to the Commission, there was a serious concern that BiB would not allow third parties, whether pay-TV operators or digital interactive services operators, to have non-discriminatory access to the digital set-top boxes which BiB was to subsidise. Conditions were agreed to ensure that third parties have fair, reasonable and non-discriminatory access to all proprietary components of the digital set-top box.

- In the KirchPayTV/BskyB case (2000[15]), the Commission considered that KirchPayTV would be the only undertaking able, in the foreseeable future, to offer pay-TV in combination with digital interactive TV services. As a consequence, its set-top box would become the standard for

[10] Decision on the opening of the proceedings *Cablevisión / Telefónica / Sogecable*, of 19.7.1996 (OJ C 228, 7.8.1996, p.5).
[11] Decisions *Kirch/Bertelsmann/Premiere*, of 27.05.1998 (OJ L 53, of 27.2.1999, pp. 1-30) and *Deutsche Telekom/Beta Research*, of 27.05.1998 (OJ L 53, of 27.2.1999, pp. 31-45).
[12] See EC Commission press notes IP/00/287, "Commission opens full investigation into the Microsoft/Liberty Media/Telewest concentration", of 22.3.2000 and IP/00/733, "Microsoft gives up joint control over Telewest as Commission objects to deal", 07.07.2000.
[13] See EC Commission press note IP/01/569, "Microsoft agrees not to influence technology decisions of European digital cable operators", of 18.04.2001.
[14] See Decision 1999/781/EC, of 15.09.1999, *BiB/Open* (OJ L 312, of 6.12.1999, pp. 1-38).
[15] See Decision *BSKyB/KirchPayTV*, of 20.3.2000 (EC Commission press note IP/00/279, of 21.3.2000).

both services. As this set-top box is a closed decoder which uses proprietary technology, a third party service provider wishing to reach customers via this set-top box would be dependent on its competitor. The parties offered commitments, which prevented KirchPayTV from leveraging its dominance in the pay-TV market into the market for digital interactive TV services. KirchPay-TV agreed to implement the open API "Multimedia Home Platform" (MHP) and to facilitate the negotiation of Simulcrypt agreements. Moreover, competing providers of digital interactive TV services can manufacture decoders using Kirch's CAS in combination with others. This would allow subscribers of Kirch pay-TV services to keep receiving them even if they are using a decoder provided by a third party digital interactive service provider.

### *3.2. Council of Europe*

While the European Union has mainly focussed on the potential negative effects of proprietary CAS and associated facilities in the media market, the Council of Europe has stressed their importance as regards diversity and pluralism in the media.

Council of Europe Recommendation N R (99) 1 on measures to promote media pluralism is designed to foster non-discriminatory, fair and transparent access to facilities and services, including electronic access control systems, which are particularly mentioned as bottlenecks in digital television.

In this document, the Council of Europe recommends that its Member States monitor the development of the new media with a view to taking any measures which might be necessary in order to preserve media pluralism and ensure fair access by service and content providers to the networks and of the public to the new communications services. According to the Council of Europe, Member States should consider introducing rules on fair, transparent and non-discriminatory access to systems and services that are essential for digital broadcasting, providing for impartiality for basic navigation systems and empowering regulatory authorities to prevent abuses. Over and above these measures, Member States should also examine the feasibility and desirability of introducing common technical standards for digital broadcasting services. Furthermore, given that the interoperability of technical systems can help to extend viewers' choice and enhance ease of access at a reasonable price, Member States should seek to achieve the largest possible compatibility between digital decoders. The Recommendation also proposes that specific initiatives be taken to prevent vertical concentration.

The issue of technical standards for set-top-boxes and user access to content/services is further touched upon on the Report on Media Pluralism in the digital environment approved by the Steering Committee on Mass Media of the Council of Europe in October 2000.

## *4. Access issues: the Spanish experience*

### *4.1. The implementation into Spanish Law of the EC Directive 95/47: Act 17/1997*

The EC Directive 95/47 has been incorporated into Spanish Law by the Act 17/1997, of 03.05.1997[16] (as amended by the Decree-Law 16/1997, of 13.09.1997[17]). The Act 17/1997 aims to protect the public interest in terms of access to information and to guarantee fair competition in TV services through digital satellite, cable and terrestrial TV systems. The national authority in charge of applying this Act is the *Comisión del Mercado de las Telecomunicaciones* ("CMT", Telecommunications Market Commission).

[16] http://www.setsi.mcyt.es/legisla/radio_tv/ley17_97.htm.
[17] http://www.setsi.mcyt.es/legisla/radio_tv/rdl16_97.htm.

The main article in the Act 17/1997 is article 7, which incorporates into Spanish Law article 4 of the EC Directive 95/47:

- According to article 7 of Act 17/1997, the providers of conditional access services for digital TV (digital terrestrial, digital cable, digital satellite) must use decoders which are directly and automatically open, whether because they use a multicrypt system, or because the decoders' owners reach an agreement with the other digital TV operators.

The CMT has the responsibility to approve the agreements reached by the operators, assuring that the terms of the agreements are fair, transparent and non-discriminatory, and allow consumers to receive all digital TV programme services with one single decoder. If such an agreement is not reached, the CMT is allowed to establish the legal, technical or economic conditions necessary to allow the decoders to be directly and automatically open.

- As for the relationship between independent content providers and digital pay-TV platforms, article 7.c of the Act 17/1997 establishes that the providers of conditional access services for digital TV shall ensure that all independent content providers and broadcasters in general have access in fair, transparent and non-discriminatory conditions to the technical means needed to allow the reception of their digital TV services by the decoders of the customers of those providers of conditional access services. The price to be paid for the use of decoders will be freely established by the parties, and will be cost-orientated. The providers of conditional access services for digital TV shall keep separate accounts.

The CMT shall adopt the necessary binding resolutions in order to solve the conflicts which may arise between independent content providers or broadcasters in general and providers of conditional access services for digital TV.

- Article 7.c) of the Act 17/1997 states that the providers of conditional access services for digital TV (cable, satellite, terrestrial), must reserve 40% of their transmission capacity for independent content providers, provided there are enough of them requesting access to the digital pay-TV platform in question and offering programme services with adequate quality.

- The CMT also approves the texts of the contracts between pay-TV broadcasters and consumers (article 7.a of Act 17/1997), andis in charge of the management of a Public Registry for providers of conditional access services for digital TV (art. 1.2 of the Act 17/1997).

### *4.2. The CMT and access issues in the Digital TV environment*

- The CMT has passed several Resolutions approving the texts of the consumer contracts which CAS providers for digital TV, as well as five Resolutions inscribing CAS providers for digital TV in the Public Registry created for these purposes.

- In October 1999, the CMT answered a consultation by the CAS provider Euskaltel on some aspects related to their obligation to keep separate financial accounts regarding their activity as conditional access providers (article 7.c of the Spanish Act 17/1997, and article 4.c of the EC Directive 95/47).

- To date, no operator has lodged any complaints before the CMT regarding the fulfilment by CAS operators of their obligation to use decoders which must be directly and automatically open (whether because they use a multicrypt system, or because the decoder's owners reach an agreement with the other digital TV operators).

However, the CMT did receive a complaint related to the use of proprietary APIs. In Spain, the main operator in the Digital Terrestrial TV (DTTV) market, Quiero TV, has chosen a proprietary API, Open TV. One of its rivals, the broadcaster Sogecable, has complained that this choice may affect competition in the DTTV market, and could restrict the ability of customers to receive all digital TV and interactive TV services with a single decoder. Quiero TV has argued that when it started operating it had to choose a proprietary API because there were no open APIs at that time, and that it accepted then a compromise to start the migration to an open API (MHP) as soon as it became available. Nevertheless, in September 28 2000, the CMT decided to open an inquiry in order to assess the impact of the choice of API made by Quiero TV on the digital TV market.

- Following that complaint, the CMT decided to investigate gateways in the digital TV market, especially bearing in mind the impact of those gateways in the development of the digital terrestrial TV (DTTV) market, as terrestrial TV is considered as an essential public service, and DTTV is expected to substitute analogue terrestrial TV before 2013.

  As a result of this investigation, in May 2001 the Board of the CMT decided to launch a public consultation on the shared use of decoders in a digital TV environment. In Spain there are currently five registered providers of conditional access services for digital TV (digital satellite platforms *Canal Satélite Digital* and *Vía Digital*; digital terrestrial TV platform *Quiero TV*, and cable operators *Euskaltel* and *Madritel*), which have not yet reached any agreements for the shared use of their decoders. This situation could hamper the development of the digital TV market. The CMT has decided to ask all the affected parties their views on the potential bottlenecks which may exist in this market (not only as regards decoders, but also associated facilities, such as APIs, EPGs, hard disk., etc.), and their views on a possible intervention of the CMT in these matters. The deadline for the submission of papers was June 29 2001. At present, the services of the CMT are analysing the answers provided by the interested parties, in order to assess if an intervention of the CMT in this field would be appropriate or not.

## *5. Points for discussion*

- CAS providers could be subject to: 1) sector specific regulation which expressly deals with CAS; or 2) a convergent legal framework on access to electronic communications infrastructures which should also apply to CAS; or 3) only general legislation (competition law, consumer protection law, general provisions that require authorities to protect media pluralism, etc.). Which approach should be favoured?

- In order to foster interoperability, should decoders or television sets with an integrated decoder have a common interface, allowing the user to use the device with replaceable CA modules?

- Should regulation focus on the provision of conditional access services for digital TV (as, for example in EC Directive 95/47), or should it also cover the provision of radio services and interactive services?

- Should sector specific regulation only deal with CAS, or should it also cover APIs and EPGs?

- Should authorities mandate open standards, in order to enhance competition and media diversity? Or should they merely promote the adoption of those open standards?

- In the Digital Terrestrial TV (DTTV) environment, possible alternatives to mandate open standards are: 1) to oblige digital TV licensees to reach an agreement on technical matters if they want to keep their licenses; 2) to establish that one technical operator will be in charge of the technical management of the multiplex, and then other TV licensees will provide DTTV services. Could any of these be considered as an adequate solution to interoperability problems?

- Under European Law, decoders must pass free-to-air transmissions. However, the decoder used to receive the programmes of a digital satellite (or cable) TV platform may not be able to pass free-to-air DTTV transmissions. Would it be appropriate to mandate that decoders should technically allow users to receive any free-to-air digital TV signals, regardless of the delivery network used?

- Pay-TV operators would have to shift their set-top box to implement certain open solutions, like MHP APIs. Even the software cannot be upgraded by downloading so far, because of the memory needed to implement MHP APIs. If open standards are to be implemented, how should the transition take place? Who should bear the costs?

- Should public service broadcasters receive special treatment, as regards CAS or EPGs?

- Which authority should deal with these issues: a telecom authority; an audio-visual authority; both; a convergent authority?

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