

Terms of supply of conditional access: Oftel guidelines

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Summary

S.1 Conditional access and related services provide amongst other things encryption of broadcast content to digital receivers, to ensure that only those authorised to view the content are able to do so. For example, broadcasters will seek to purchase conditional access to restrict viewing to subscribers, or to people within a defined geographical area. Access control services includes technical services which are supplied to broadcasters who want to provide interactive services to the public.

S.2 In the policy statement entitled *The pricing of conditional access services and related issues* dated 8 May 2002, Oftel confirmed that it did not propose a licence modification to allow the Director General to prices for conditional access services on an ex ante basis. However, the statement confirmed that Oftel would issue further guidance on how the Director General would approach any complaint raised with him regarding conditional access pricing.

S.3 Key points amplified within these guidelines include:

- the obligation on providers of conditional access and access control services is to offer such services on a fair, reasonable and non-discriminatory basis to third parties wishing to purchase services regulated under that licence;
 - in assessing fairness and reasonableness, Oftel will consider whether the terms offered are consistent with those which would be expected in a competitive market;
 - prices should fall between the 'floor' of the incremental cost of providing the service, and the 'ceiling' of the stand-alone cost of the service, whilst not allowing for over-recovery by providers. The prices for services to all categories of user would be expected to cover their costs;
 - a range of factors should be taken into account in assessing prices including the service required, the benefits to the platform for carrying the service, the benefits for the broadcaster or service provider of inclusion on the platform, the revenues accruing to the broadcaster from carriage on the platform, and the willingness to pay of the broadcaster for the service required; and
 - in assessing non-discrimination, Oftel regards it as acceptable for differential prices to be offered where there is no material adverse effect on competition; but the basic approach should be that comparable prices should be offered to comparable users, for comparable services, at comparable times.
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Chapter 1

Introduction

1.1 Oftel is responsible for the regulation of conditional access services needed by broadcasters in order to supply digital television services to those viewers who are authorised to receive them. Conditional access services include encryption services, subscriber authorisation services, subscriber management services and certain other technical services required to display a broadcaster's digitally transmitted services to viewers.

1.2 The obligation to supply conditional access services on a fair, reasonable and non-discriminatory basis stems from the Advanced Television Standards Directive (95/47/EC – 'the Directive'). The Directive was implemented in the UK by the Advanced Television Services Regulations 1996 (SI 1996 No. 3151) and the Advanced Television Services (Amendment) Regulations 1996 (SI 1996 No. 3197) (together hereinafter 'the Regulations'). As a result, Oftel regulates the running of telecommunication systems for the provision of conditional access services through a so-called 'class licence' granted by the Secretary of State for Trade and Industry (the 'Secretary of State') under section 7 of the Telecommunications Act 1984. That licence was first granted on 7 January 1997, but was revoked and an equivalent new class licence granted on 1 August 2001.

1.3 Access control services are telecommunication services (other than conditional access services) which control the supply of other digital telecommunication services to end-users. These typically include interactive and enhanced services (such as banking, shopping, or viewing choices for sporting events). Although these service providers may not appear similar to traditional broadcasters, the term 'broadcaster' will be used throughout this document for reasons of brevity, and because all require a broadcast licence from the Independent Television Commission. Whereas the regulatory regime for conditional access is derived from the above-mentioned Directive, the regime for access control is derived from the Telecommunications Act 1984 in that the running of telecommunication systems for the provision of access control services is subject to obligations under a 'class licence' granted by the Secretary of State on 31 August 1999. That class licence requires so-called Regulated Suppliers of access control services to offer those services also on fair, reasonable and non-discriminatory terms. That obligation is therefore similar to the obligations on providers of conditional access services to offer such services on the same basis. References throughout these guidelines to 'provider(s)' are, unless the context otherwise requires, to provider(s) of conditional access services or access control services.

1.4 Of tel published its consultation document entitled *The pricing of conditional access services and related issues* on 30 October 2001. That document explained Of tel's initial views on issues concerning the regulatory approach, tariff structure and public service broadcasters. Following this consultation, Of tel issued a policy statement ('the statement') on 8 May 2002. Given the similarity of obligations on Regulated Suppliers of access control services, these guidelines also apply to those Suppliers.

1.5 These guidelines expand upon the approach outlined in the statement and outline how Of tel would be likely to interpret the policy in the event of a complaint. They do not represent any change in the policy outlined in the statement and Of tel has therefore decided that a formal consultation exercise on these guidelines would not be necessary. However, any views on how they are operating in practice are welcome.

1.6 These guidelines replace those guidelines included in Of tel's statement entitled *Digital television and interactive services: Ensuring access on fair, reasonable and non-discriminatory terms*, which was published in April 1999.

Status

1.7 These guidelines represent Of tel's current view of the way it would interpret its responsibilities and exercise its discretion under current legislation. They do not form part of the current statutory provisions and so do not affect the scope of the legislation. The Director General of Telecommunications ('the Director General') will take the guidelines into account in applying the statutory provisions in force. He would normally expect to follow them and to give his reasons if he departed from them. The Director General cannot legally fetter his discretion in advance and therefore he retains the ability to depart from the guidelines where the circumstances warrant it. The guidelines are therefore not binding on the Director General.

Scope of the guidelines

1.8 These guidelines cover the pricing and the terms of supply of conditional access and access control services. Conditional access and related services provide amongst other things encryption of broadcast content to digital receivers, to ensure that only those authorised to view the content are able to do so. For example, broadcasters will seek to purchase conditional access to restrict viewing to subscribers, or to people within a defined geographical area.

1.9 Access control services include the testing of interactive applications, the application of digital certificates, the verification of applications by the receiver to check that they have passed through the certification and testing process; and the authentication of the subscriber's smart card to enable the set top box to communicate with the servers that form part of the system operated by the provider.

1.10 Presently in the UK, conditional access is only relevant to broadcasters using the digital satellite broadcasting route (the 'DSat platform', operated by BSkyB). It does not apply to the digital cable platform. If conditional access were to be made available to third party broadcasters on other platforms, the same regulatory principles would apply. As to access control regulation, most obligations in the class licence referred to in paragraph 1.3 above apply only to Regulated Suppliers of access control services. The Director General has the power to determine a provider to be such a Regulated Supplier if it is in a dominant position after having reviewed the market in question. At present, the Director General has only determined Sky Subscribers Services Limited (in his decision dated 20 June 2000) to be such a Supplier.

Approach to regulation

1.11 The current statutory provisions were framed in terms which enabled Oftel to intervene in firms' pricing only in the event that commercial negotiations fail to arrive at an outcome which is fair, reasonable and non-discriminatory. The statement confirmed that Oftel does not propose to modify the licence to allow the Director General to set prices for conditional access services. Oftel considers that the ex post regulatory mechanism for such services combines the advantages of flexibility to take account of different circumstances, with valuable scope for incentives. It allows for negotiation but at the same time offers the safety net of a complaint to Oftel in the event of negotiations failing.

1.12 The purpose of these guidelines is to enable parties to negotiations to understand the principles which Oftel would be likely to apply if it received a complaint that the prices offered were not fair, reasonable and non-discriminatory.

1.13 The process Oftel would undertake to assess whether prices for conditional access or access control services are fair, reasonable and non-discriminatory incorporates consideration of a number of factors, including the following:

- the structure of tariffs and tariff setting;
- assessment of whether charges are reasonably related to costs; in particular, whether the terms offered by the provider were consistent with those which would be expected in a competitive market;
- assessment of whether prices are non-discriminatory; and
- how the tariffs should approach the distribution of common costs.

This process is described in more detail below.

1.14 In the event that the Director General took the view, after investigation and consultation, that the prices offered were not fair, reasonable and non-discriminatory, he would then take enforcement action in the form of a statutory direction to require the provider to revise its prices in order to comply with the requirement to offer such prices.

Chapter 2

Assessment of whether terms are fair, reasonable and non-discriminatory

Oftel approach to fair, reasonable and non-discriminatory obligations

Fair and reasonable

2.1 The obligation providers is to offer services regulated under the respective class licence (see paragraphs 1.2 and 1.3) on a fair, reasonable and non-discriminatory basis to third parties wishing to purchase them. In assessing fairness and reasonableness, Oftel will consider whether the terms offered are consistent with those which would be expected in a competitive market. Oftel's primary consideration is to ensure that intra-platform competition (ie competition on the same platform, as opposed to competition between platforms) between broadcasters is not adversely affected by the terms under which conditional access services or access control services are offered on a platform. Oftel will also consider the effect on inter-platform competition. However, it is not appropriate for Oftel to use its regulation of conditional access or access control pricing to attempt to compensate for advantages of one platform over another, whether these are intrinsic in terms of technology, or arise as a result of external factors, such as Government policy.

2.2 In any assessment as to whether charges are fair and reasonable, Oftel will usually need to consider whether input costs are reasonably and necessarily incurred in supplying the services in question. In particular, where the provider purchases inputs, such as smart cards, from an associated company, the provider would need to demonstrate that the input costs are not excessive and that it has appropriate arrangements for the independent scrutiny of charges for services from related companies.

2.3 Oftel takes 'reasonableness' to mean, amongst other things, that terms and conditions under which products are offered are fair between the parties; sensible, practical, and proportionate. Timeliness in the provision of information, and of the products themselves is also critical to ensuring that access is effective. The following offers some guidance as to what Oftel would consider to be 'reasonable':

- the provider should be able to recover its efficiently incurred costs over a reasonable period; and
 - the services offered must, if technically feasible, be sufficiently 'unbundled', so that the broadcaster only pays for what it needs.
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Treatment of risk

2.4 Oftel recognises that there are different levels of risk in agreements entered into and so would consider it appropriate for providers to take into account the level of risk for a novel service.

2.5 Oftel also would consider the relationship between input costs and expected revenues. Oftel's approach would be to consider whether the pricing framework was such that the provider would be expected on average to make a return on its investment that was neither inadequate nor excessive, taking proper account of risk and uncertainty applying to the investment at the time it was made. In a competitive market, neither excessive nor inadequate returns could be sustained over an extended period.

2.6 The treatment of risk over time is important: Oftel would not use the benefit of hindsight to review the pricing structure. The existence of high returns in the short to medium term, if the investment turned out to be more successful than originally projected, would not necessarily be regarded as evidence that prices were too high. The supplier would have to bear the losses if the business were less successful, and must conversely be allowed to reap the benefits of greater success than was guaranteed. Further details of Oftel's treatment of issues relating to risk are provided in annexes two and four.

2.7 Oftel would also need to consider whether the expected rate of return used by the provider in calculating prices was consistent with the appropriate cost of capital. Details of the method used by Oftel and other regulators for assessing the cost of capital are covered in annex four.

Non-discrimination

2.8 Non-discrimination obligations particularly arise where an undertaking (eg the provider) is vertically integrated (eg with its own broadcasting arm). A vertically integrated provider may have an incentive to provide products on terms which discriminate in favour of its own business. Therefore, an important aim of a non-discrimination condition is to ensure that a vertically integrated supplier does not treat itself in a way that benefits itself, its subsidiaries or its partners in such a way as to have a material effect on competition. The provider must offer the required services on terms that are no less favourable than those on which it provides equivalent services to its own operations (ie it must offer services to at least the same quality, the same timescales and at the same prices as it does to itself or its subsidiaries or partners). The practical effect in the case of conditional access or access control is to ensure that the provider should offer products in such a way that the broadcasters seeking services are placed in an equivalent position to the platform operator's own broadcast channels. This includes the information they receive about products and the terms and conditions under which they are made available.

2.9 Non-discrimination does not necessarily mean that there should be no differences in treatment between broadcasters, rather that any differences should be objectively justifiable, for example by differences in underlying costs or the absence of a material adverse effect on competition. As outlined at 2.4-2.7, justifications for differentiation may also include the degree of risk presented or an overall benefit to competition through facilitating entry to platform. This would be considered on a case-by-case basis. For example, an agreement entered into at the launch of a platform, and which hence implicitly or explicitly involved the sharing of risk, could not be considered as having been entered into 'at a similar time' as one signed at a different date, even if the conditional access or access control services provided are similar. This would also apply to any rollover agreements in the earlier contract. Similarly, the value to digital platform operators of having broadcasters' content on their platforms will in general be greater in the platform's infancy. This is because, at such times, the need for quality content to make its platform attractive will be of premium importance to the operator.

2.10 Oftel's presumption is that a vertically integrated provider discriminating in favour of its own downstream business would have a material adverse effect on competition.

2.11 In order to ensure compliance with the non-discrimination obligation, a provider should ensure, amongst other things, that:

- it applies equivalent conditions in equivalent circumstances to other broadcasters providing equivalent services;
- it provides services and information to other broadcasters under the same conditions and of the same quality as it provides to its own broadcasting channels; and
- it can objectively justify any differentiation.

Discrimination between categories of broadcasters

2.12 Oftel's key non-discrimination principles for conditional access and access control pricing are that:

- comparable broadcasters, purchasing comparable services at broadly similar times, should pay comparable prices; and
- where broadcasters are not providing directly competing services, differentiation in pricing is unlikely to have a material adverse impact on competition, and should therefore not be prohibited in itself.

2.13 To assess whether different users of conditional access or access control are comparable or not, Oftel initially identifies the following three categories:

- free to air television broadcasters;
 - pay TV broadcasters; and
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- interactive broadcasters (who require access control, and are also likely to need conditional access).

2.14 Oftel's initial presumption is that there would not be a material effect on competition if a provider offered different prices for the same or similar services to these different categories of broadcaster. For example, the provider may offer different terms and conditions to free-to-air broadcasters from those offered to subscription broadcasters.

2.15 Within any one category of broadcaster, Oftel presumes that comparable terms and conditions offered to one would be available to another similarly situated at the same time. When examining the prices charged towards different broadcasters within the same category, Oftel expects that, where those broadcasters are requiring different services, the prices charged should reflect, amongst other things, any differences in the cost of providing those services. Other considerations may include revenue issues and willingness to pay (as noted at 3.7-3.8).

2.16 As to pay TV services, Oftel's initial presumption would be that comparable pay TV broadcasters should be offered comparable prices. However, as noted throughout these guidelines, providers may differentiate in pricing between broadcasters if it is unlikely to have a material adverse effect on competition between them. Oftel would have particular concerns where a differential price favoured the provider's own broadcasting arm against a competing pay TV operator.

Transparency obligations

2.17 The regulatory regime obliges the licensee to keep separate financial accounts regarding its operation of conditional access and access control services. The form and content of the regulatory accounting information request would typically provide for separate statements for a number of business activities of a vertically integrated supplier showing inter-group transactions on a non-discriminatory charge/cost basis. Transparency of this information would be aided by publication of a set of independently audited financial statements together with detailed explanatory documents showing the methodologies used to prepare the information. These documents might include details of accounting, attribution, valuation and long-run incremental cost methodologies, which would normally be agreed with Oftel.

Chapter 3

Tariff structures

Allowable costs

3.1 The general principle that Oftel would follow in assessing the costs to be recovered from conditional access or access control charges, is that those costs should be reasonably and necessarily incurred in the provision of those services. Notwithstanding that principle, there are a range of cost categories for which there is an issue about the extent to which they should be recoverable via such charges.

3.2 A proportion of the investment made by the provider in acquiring generic expertise relating to the provision of conditional access or access control may be recovered from above-mentioned charges. However, only costs that are truly generic may be recovered in this way. The provider would need to demonstrate that it had a proper methodology for establishing whether it was appropriate to regard particular costs as investments in generic expertise.

3.3 Oftel also accepts that it is legitimate in principle to recover marketing expenditure through conditional access and access control charges, where it can be demonstrated that such expenditure relates to wholesale activities that promote the platform generally (and not any particular broadcaster), and where the method of cost recovery is competitively neutral between different broadcasters. In an investigation, Oftel may therefore require visibility of marketing material and costs in order to assess the extent to which individual market campaigns were purely platform-related and, if so, to what extent it is legitimate to recover some or all of the costs of such marketing via charges.

Fixed and common costs

3.4 With a conditional access or access control system, most of the actual costs involved in the set up and running of the system do not vary significantly with the number of channels provided. The presence of economies of scale and scope means that the incremental cost of supplying the service to one additional broadcaster or channel is likely to be low. As the fixed and common costs of running the system must be recovered through the charge, it is not possible for the provider to charge a price equal to the incremental cost to every purchaser. Such a price would not cover all the costs associated with the infrastructure that makes the operation of the service possible.

3.5 Oftel considers that it is appropriate that all users of the service should pay a charge that is equivalent to incremental costs together with a reasonable contribution to common costs (ie a price that falls between the floor of incremental costs and a ceiling of the 'stand alone' cost of providing the system). This is the outcome that would be expected in a market where there was competitive supply of conditional access or access control services, although the relative contributions might well vary between different users. More detail on estimating incremental and stand-alone costs is set out in annex one.

3.6 Oftel would expect that the result of negotiations between providers and the broadcaster is that common costs are likely to be distributed amongst different bundles or single channels at differential levels depending on the overall balance of benefits which could accrue to the provider and the broadcaster. Oftel recognises that there are economies of scale and scope which are available to both parties.

Willingness to pay

3.7 Where a channel generates retail revenues, either through subscription, advertising or otherwise, Oftel considers that such revenue is a key indicator of 'willingness to pay' and would expect a reasonably close linkage between retail revenues and conditional access or access control charge. This is not the only factor to be taken into account, as there would be other attributes a broadcaster might ask to be considered in negotiations, such as those outlined at paragraphs 3.13-3.14. Oftel is not suggesting that this should form the basis of a 'formula' between retail price and conditional access/access control charges, but would expect the agreements as a whole to be broadly reflective of the retail revenues expected by the broadcaster when offering its service to the end-user.

3.8 This approach should also ensure that a single channel broadcaster would not be unduly impaired in competing with a similar channel provided by another broadcaster as part of a package of channels.

Treatment of subsidy of consumer equipment

3.9 A vertically integrated supplier may wish to subsidise consumer equipment to promote take-up of its retail services. The question arises whether this subsidy may be treated as a cost to be recovered via conditional access or access control charges, or whether this should be borne entirely by the vertically integrated company.

3.10 In principle, Oftel considers that other broadcasters typically benefit from such a subsidy (in terms of increased viewer base), so it is therefore reasonable to expect them to contribute to the costs. Different broadcasters may benefit to different extents, in which case their relative charges should reflect this.

3.11 However, in certain cases, recovery of subsidy via conditional access or access control charges may have anti-competitive effects. In such cases, recovery would not be permitted. Each case would be examined on its merits. However, one example where OfTel would have serious concerns is where the granting of subsidy was tied to a requirement to subscribe to a retail service of a vertically integrated supplier.

Costs and benefits

3.12 There may be other costs and benefits to the broadcaster and the platform provider that OfTel would expect to be taken into account in negotiations over the conditional access or access control charges to be borne.

3.13 For the broadcaster, factors relevant to carriage on the platform might include:

- any increase in revenues expected to be associated with broadcast on the platform (which may include subscriptions, advertising or other);
- the number of viewers available through the platform;
- the type of service offered; and
- the number of channels in the package which the broadcaster wishes to offer.

3.14 OfTel also expects broadcasters and the provider to give consideration to the counterbalancing benefits to the platform from carriage of the broadcaster's channel or channels. Such benefits may include:

- the attractiveness of the content offered to the platform's current viewers – with the likelihood of a positive effect on retention;
- the complementarity between the platform and the content which may attract new viewers to the platform; and
- the element of risk for the platform, including factors such as the length of contract and the certainty of income for the platform provider (see 2.4-2.7).

3.15 There are likely to be other factors which both parties should wish to take into account. Those listed above may serve as guidance on what might inform the judgement as to what is 'fair and reasonable' under the circumstances of the particular negotiation. Proper consideration of those factors should assist in the development of tariff structures which facilitate retail market entry from broadcasters and which do not unduly discriminate against individual broadcasters' channels or packages of channels.

3.16 This guidance should offer some assistance to broadcasters and providers when negotiating prices. While the price should be negotiated between the parties, the regulatory obligations are designed to prevent any exploitation of market power.

Publication of prices

3.17 Some conditional access and access control providers publish indicative prices under their obligation to publish the methodology for arriving at charges and other terms and conditions. Oftel considers that the publishing of indicative prices that can serve as the starting point for commercial negotiation is helpful for all parties. However, Oftel emphasises that those indicative prices are not set by or approved by Oftel and that Oftel would regard them as a starting point in negotiations, and that Oftel expects such negotiations to take place (as would be likely to occur in a competitive market). Oftel believes that it would be wrong to constrain those discussions by indicating how far it may or may not be reasonable for the prices to move during the negotiation process.

Relationship between conditional access prices, access control prices and retail prices

3.18 Oftel would be concerned if a vertically integrated provider set charges in such a way as to squeeze the margins of rival service providers. This could have the effect of forcing rivals to exit the market or deterring them from entering it. A margin squeeze would exist if the vertically integrated firm's retail operation was not profitable, having been charged the same prices for conditional access or access control as were offered to third parties.

Setting tariffs for public service broadcasters

3.19 The statement confirmed that Oftel does not regard public service broadcasters, whilst having specific characteristics, as being a homogeneous group, and that there are not convincing reasons for concluding that they compete separately for viewers compared to other free to air broadcasters. For example, given the comparable service offered on digital platforms by the commercial public service broadcasters, Oftel considers that significantly differential pricing (all else being equal) between free-to-air commercial channels and the commercially owned public service broadcasters might have an adverse effect on competition.

3.20 Notwithstanding that confirmation, there are factors that are particular to public service broadcasters – including their access to analogue spectrum – that should be taken into account by providers and are likely to lead to pricing differentials between commercial and non-commercial broadcasters. This might lead conditional access suppliers to offer terms that are more favourable to certain public service broadcasters, depending on the nature of the broadcaster.

3.21 It is noted at 3.13-3.14 above that as part of commercial negotiations, providers may consider the nature of the channel when arriving at a reasonable charge. Oftel would expect such consideration to deal with the following factors:

- the benefits to the platform of carriage of the popular content that is provided by public service broadcasters – even in multi-channel households;
- the different characteristics of the individual public service broadcasters themselves;
- the competitive effects of any differentiation – including in price or service offered or required; and
- consideration of willingness to pay of the broadcaster and the benefits to it of carriage on the platform – which may include accessibility for digital-only channels, increased audience, ‘tied deals’ with non-public service content from the same broadcaster, and the higher revenues available to the broadcaster (eg advertising revenue).

3.22 Oftel does not expect all those factors to carry equal weight for all public service broadcasters, and notes that the willingness to pay of a niche, non-commercial public service broadcasting channel is likely to be less than for a commercially owned company which is likely to accrue more revenue for shareholders.

Annex 1

Estimating incremental and stand-alone costs

A1.1 These guidelines note that the pricing of conditional access and related services and access control services should fall between the floor of incremental costs and the ceiling of stand-alone costs. The level of floors and ceilings will vary depending on the type of service, reflecting (among other things):

- the need for security measures, including more frequent card changes (the need for such measures increases with the value of the services available via the system); and
- the level of sophistication of the services supported by the system. This affects both the development costs, the ongoing management costs and the cost of the smart cards.

The prices for services to all categories of user would be expected to cover their costs.

A1.2 Oftel recognises that in all these cases, cost estimates will be approximate and subject to a degree of uncertainty. However, in order to be fair, reasonable and non-discriminatory, the pricing structure needs to take account of the differences in levels of sophistication of services required by different broadcasters.

Annex 2

Platform maturity, risk and the recovery of fixed costs

Risk-sharing arrangements

A2.1 There are two sets of risk factors that could have a potential impact upon the revenues of providers. The first stems from the fact that the system costs are fixed, but the number of viewers is uncertain. The second stems from the fact that while the investment in consumer equipment is fixed, it is not predictable how much the viewer will make use of the equipment. In setting their prices, providers will need to take a view on the likely number of viewers and their use of services, including interactive services, in the relevant time period. They will also need to consider the extent to which they want to bear those risks themselves or whether to share them with broadcasters.

A2.2 The length of the contract, and pricing options will involve differing allocations of risk between parties. Oftel considers that within fair, reasonable and non-discriminatory pricing, a mix of options may be offered, the prices of which should reflect the relative level of risk. A transfer of risk should be reflected in the pricing. A mix of options may emerge, for example; to offer: a fixed 'per viewer' charge set in advance for a defined period; a fixed 'per viewer' charge reviewed annually; or a fixed charge which is adjusted retrospectively. Alternatively, the provider may offer a fixed flat rate, or combine a flat rate with a per viewer price. There may be other options, or a mix of these which still fall within an acceptable range.

A2.3 The general principle that Oftel would follow is that, provided the full set of options was available to all broadcasters seeking services at any given point in time, the provider would be free to offer differentiated options. Such arrangements might mean that some broadcasters would be operating under different deals at any point in time. However, as long as the provider had made the full range of options available to all broadcasters seeking to enter into an agreement at a particular point in time, Oftel would be likely to take the view that there would be no breach of the non-discrimination requirement.

A2.4 Given the uncertainty of forecasts, where a provider takes on the larger share of risk, there is a possibility that it may make a large profit or loss (eg on a fixed rate). Such or losses should not be carried forward into future charging calculations, or spread across the charges made to other broadcasters. They should be 'ring fenced', in keeping with the principle that the provider would be bearing the risk.

Attractiveness of content to platform operators

A2.5 As stated at 2.9 above, the value to digital platform providers of having broadcasters' content on their platforms will in general be greater in the platform's infancy. This is because, at such times, the need for quality content to make its platform attractive will be of premium importance to the provider. A more established platform is less dependent on being able to offer the content of any individual broadcaster, and therefore attaches a lower value to it. Arguments similar to those outlined in paragraph 2.9 therefore apply.

Recovery of fixed costs

A2.6 Fixed system costs will be high in the early years of a platform's life while the number of subscribers is likely to be relatively small. Oftel takes the view that it would be legitimate in such circumstances for providers to adopt pricing strategies which avoid very high 'per viewer' charges in the early years, as these could act as a deterrent to the introduction of new services and the development of the platform. This would also apply to ongoing 'early entrant' discounts offered to broadcasters in the early years of digital television. However, the extent and duration of such discounts should be commensurate with cost savings made by the provider (for example through securing a lower cost of capital), or with the non-discrimination terms discussed in chapter two.

Annex 3

Generic assets: depreciation issues

A3.1 Assessing the life of generic assets and the appropriate method of depreciation to be adopted includes considering the mix of tangible and intangible assets. For conditional access and access control systems, intangible assets may include the investment in acquiring the knowledge for developing the relevant systems, and tangible assets – such as the equipment itself.

A3.2 If providers have been involved in the development of analogue conditional access systems from the start, then some assets may have reached the end of their life during the analogue phase. In such circumstances, it would not be appropriate to recover this proportion of generic costs again from the digital conditional access systems.

A3.3 The nature of conditional access and access control systems suggest that it may be more appropriate to depreciate a greater proportion of generic assets in the early years (consistent with relatively short assets lives). For example, as the knowledge required to develop systems is disseminated, the value of that knowledge diminishes. It may not be sustainable within a competitive market environment to continue to recover the sunk costs of acquiring these intangible assets over a long period of time. While tangible generic assets of a conditional access or access control system may tend to be more durable, they may still depreciate more at the start of their lives because of advances in technology. This would again suggest that the depreciation profile should be 'front loaded' with relatively high cost recovery in the early years.

A3.4 On the other hand, there are some reasons why it may be more appropriate to recover a greater proportion of generic costs in later years. In the early years, the customer base from which the costs could be recovered would be quite small. This means that, if depreciation charges were calculated with no reference to sales volumes, the depreciation costs that each customer would have to bear would be relatively high in the early years. In later years, with a larger customer base, the costs per customer would be lower, although the total depreciation charge recovered over time would be the same. In order to avoid changes in unit costs over time, it may be more appropriate, therefore, to profile depreciation costs in line with expected volumes.

A3.5 The mix of generic assets with differing asset lives will complicate the choice of depreciation method. The perishable nature of some of the assets suggests that a depreciation methodology that allows a greater proportion of costs to be recovered in the early years may be appropriate. The effect of profiling, however, will tend to work in the opposite direction in that it points towards a depreciation method that recovers a greater proportion of costs in the later years. On balance, it might be appropriate, as well as simpler, to apply a straight-line depreciation method.

Annex 4

Cost of capital

Introduction

A4.1 A firm's cost of capital can be defined as the rate of return that could be earned in the capital market on securities of equivalent risk. In general, the higher the riskiness of the firm's activities, the higher its cost of capital, since investors typically require compensation for greater risk. For a firm financed by debt and equity, the cost of capital will be a weighted average of its cost of capital from both sources. The following paragraphs describe the general techniques used to derive the cost of equity and debt.

Cost of equity

A4.2 Two main methods are typically used to establish a firm's cost of equity. The most widely used model for estimating the equity cost of capital is the Capital Asset Pricing Model (CAPM). The basic premise of this model is that investors require a higher expected rate of return on any investment in order to compensate them for a higher risk of returns on that investment (as measured by the variability of those returns).

A4.3 Investors are assumed to be able to reduce risks by holding diversified portfolios of equities. However, there is a degree of systematic risk inherent in even the most diversified portfolio of shares, since the value of the whole stock market can rise or fall. This non-diversifiable risk cannot be eliminated by holding shares in a large number of companies, and is therefore a component of the cost of equity.

A4.4 The risk-free rate of return which investors would be able to earn with certainty is called the risk free rate, and is typically proxied via the return on government debt. The additional return above the risk-free rate is that investors would require in order to compensate them for holding equities rather than risk free assets is termed the equity (or market) risk premium.

A4.5 Returns on shares in some companies will fluctuate in step with, but more widely than, returns to the stock market as a whole. Returns on other types of shares will fluctuate in step with, but less widely than, the stock market as a whole. Others still could move against the market. The degree of correlation between returns on shares in one company and returns on the stock market as a whole can be estimated using dividend and share price data and is captured in a coefficient known as the company's Beta. A company showing higher than average non-diversifiable risk will have a Beta coefficient in excess of one, while a company showing lower than average non-diversifiable risk will have a Beta less than one.

A4.6 The cost of equity to the firm can then be calculated according to the basic CAPM formula below:

$$R_e = R_f + \text{Beta} \cdot [E(R_m) - R_f],$$

where R_e is the cost of equity finance, R_f is the risk-free rate of return, Beta is the degree of correlation between returns on the company's shares and returns on the stock market as a whole, $E(R_m)$ is the expected return on the market and $E(R_m) - R_f$ is the expected market risk premium or excess return to equities.

A4.7 This calculation can be done in real or nominal terms. The two should have identical implications for measuring the financial performance of the enterprise, provided that the inflation rate assumed in the financial forecasts is the same as that implied by the difference between the estimated real and nominal cost of capital.

A4.8 One criticism often levelled at the CAPM is that the calculation of the equity premium is based on historic excess returns on equities rather than the returns that investors expected to achieve. Since investors base their decisions today on expectations of returns and their variability in the future, it would appear preferable to look at expectations directly. This is particularly important in the light of evidence that suggests that the risk premium varies over time, so that estimates of historic excess returns may not be a reliable guide to excess returns required in the near future.

Cost of debt

A4.9 In the absence of specific information on the interest rates being paid by the firm in question, the pre-tax cost of debt is typically calculated by adding a small corporate risk premium to an estimate of the risk-free rate of return.

Specific risk

A4.10 In the case of start up ventures, of which businesses offering the supply of conditional access or access control services may typically be examples, there is a need to ensure that specific risks are reflected in the Beta coefficient. These risks must be taken into account in assessing whether the level of the projected cashflows were fair and reasonable having regard to probability of the investment succeeding or failing. For example, if a group of investors were investing in a series of projects of which they estimated that a given proportion would be failures, then the successful projects would need to earn sufficient revenues not only to cover their own costs but also to cover the costs of the failures. Examples of such projects would include oil exploration and film production where it is usually expected that some projects will fail.

A4.11 Strictly speaking the approach Oftel proposes is not to adjust the cost of capital derived from the CAPM methodology, but instead to calculate the expected

revenues which would result in the project representing a 'fair bet' for investors. A 'fair bet' is one where, if the bet were repeated a sufficient number of times the gamblers would get their stake back. For example, suppose that a bet was offered on the toss of a £1 coin. If successful players would make £2 and if unsuccessful players lost their stake. This would give a return of 100% to the successful player. A return of 100% might in isolation seem very attractive, but the 50% probability of losing the investment altogether must be taken into account. The expected outcome of this bet, if played out a number of times, would be for players to end up with their stake money and no more – that is, no return would be made, even though a return of 100% was possible on any individual bet.

A4.12 In the context of project investment, the notion of a 'fair bet' would be that, averaged over a number of projects, investors would cover their costs including the cost of capital. High returns might be made in some outcomes, but the expected value of cashflows – after factoring in all possible outcomes, with their associated probabilities – would result in returns equal to the cost of capital.
