

Application of spectrum liberalisation and trading to the mobile sector

Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title: Application of spectrum liberalisation and trading to the mobile sector

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Application of spectrum liberalisation and trading to the mobile sector

Orange UK response to Ofcom consultation on 'Application of spectrum liberalisation and trading to the mobile sector'

Executive summary

Orange welcomes the opportunity to respond to Ofcom's consultation on the 'Application of liberalisation and trading to the mobile sector'. Liberalisation and trading of the 2G spectrum, particularly the 900 MHz spectrum, is one of the key strategic issues facing the mobile industry in today's extremely competitive environment.

Generally, Orange is supportive of Ofcom's proposals regarding the liberalisation of 2G spectrum. Orange has lobbied hard for access to 900 MHz spectrum and we are extremely pleased that Ofcom recognises the potential competitive threat in the mobile market if the current 900 MHz incumbents are able to retain their 900 MHz allocations and reform unilaterally to UMTS technologies.

In support of Ofcom, it is Orange's view that the 900 MHz spectrum will provide a cost advantage over the higher frequencies (ie 1800 and 2100 MHz) for the provision of mobile broadband services. Most of these savings will come as a result of a reduction in number of sites for coverage in rural areas and in building coverage.

Orange has a well developed mature 2G network on an 1800 grid, along with a significant 3G network already rolled out using the spectrum at 2100 MHz. Orange's desire is to provide national 3G coverage on a cost effective and competitive basis. With the favourable characteristics of the 900 MHz spectrum, having access to this spectrum, particularly in the rural areas would mean that we could reduce site numbers, bringing both environmental and cost benefits.

Orange supports Ofcom's view that there should be a partial mandatory release of 900 MHz spectrum from the incumbent 900 MHz holders to Ofcom. However, with respect to the timing, we recognise that there may be some practical issues that may need to be dealt with.

Orange supports Ofcom's view that liberalising 1800 MHz spectrum in the hands of the incumbent holders would be effective in promoting both competition and efficient use of the spectrum.

In the absence of a satisfactory and speedy resolution of a mandatory release of part of current GSM 900 allocations from the incumbent operators, Orange would urge Ofcom to give the 1800/ 2100 MHz operators certainty of access to the spectrum released as a result of Digital Switchover (DSO).

If Ofcom is serious about removing legacy spectrum differentials, hence 1800/ 2100 legacy competitive distortions, reallocation of the 900 MHz spectrum must take place amongst the mobile operators

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Introduction

Orange welcomes the opportunity to respond to Ofcom's consultation on the 'Application of liberalisation and trading to the mobile sector'. Liberalisation and trading of the 2G spectrum, particularly the 900 MHz spectrum, is one of the key strategic issues facing the mobile industry in today's extremely competitive environment.

Generally, Orange is supportive of Ofcom's proposals regarding the liberalisation of 2G spectrum. Orange has lobbied hard for access to 900 MHz spectrum and we are extremely pleased that Ofcom recognises the potential competitive threat in the mobile market if the current 900 MHz incumbents are able to retain their 900 MHz allocations and reform unilaterally to UMTS technologies.

In support of Ofcom, it is Orange's view that the 900 MHz spectrum will provide a cost advantage over the higher frequencies (ie 1800 and 2100 MHz) for the provision of mobile broadband services. Most of these savings will come as a result of a reduction in number of sites for coverage in rural areas and in building coverage.

However, we believe that there is the possibility that some of the MNOs may respond negatively to Ofcom's proposals in its consultation document. However, we believe that their responses should be clearly measured against two distinct criteria:

1. firstly, whether the incumbent 900 MHz MNOs disagree with the main premise that restricted access to 900 for 3G offers them an unfair competitive advantage relative to the MNOs without access to 900 MHz spectrum, and
2. secondly, if the first answer is yes then practically whether spectrum can be released by 2010

In general, Orange supports Ofcom's findings on the first issue, although we believe there are practical considerations that may flex the overall scale of the difference from the theoretical, but not the general underlying point. It is clear that Ofcom's analysis and modelling is somewhat theoretical and does not reflect the actual situation in the mobile market or the existing networks. Whilst such an approach is suitable for initial work, Orange would support the development of the analysis to take account of more practical situations.

Orange has a well developed mature 2G network on an 1800 grid, along with a significant 3G network rolled out using the spectrum at 2100 MHz. Orange's desire is to provide national 3G coverage on a cost effective and competitive basis. Given the favourable characteristics of the 900 MHz spectrum, having access to this spectrum, particularly in the rural areas would mean that we could reduce site numbers, bringing both environmental and cost benefits.

Ofcom's proposals regarding 900 MHz spectrum

In line with Ofcom's thinking, we do not believe that a secondary market in 900 MHz spectrum would develop if the incumbent operators were able to retain their spectrum. Whilst the theory may be sound (ie that if the value of the spectrum was higher to another player than the incumbent operator, then the incumbent operator would trade), in practice, the other MNOs would be entirely dependant upon the incumbent operators trading spectrum to their direct competitors. It is hard to see

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how this would ever work in practice. To this end, Orange supports Ofcom's view that there should be a partial mandatory release of 900 MHz spectrum from the incumbent 900 MHz holders to Ofcom.

However, with respect to the timing, we recognise that there may be some practical issues to deal with.

Ofcom's proposals regarding 1800 MHz spectrum

Ofcom's correctly identified that one of the constraining factors regarding the value of the 1800 MHz spectrum is the lack of availability of UMTS1800 equipment. FT Group and Orange have been lobbying manufacturers for some time to develop 3G equipment for use at 1800 MHz. However, discussions with handset providers show that, to date, as Ofcom states, there has been little appetite for development. The markets for 1800 only operators are limited and the economies of scale that apply to 900 MHz operators do not exist, so even if handsets and equipment were produced, costs would, almost certainly, be higher. There is some limited possibility that UMTS1800 handsets could be available by 2010/ 11, whereas there is already significant development for handsets at 900 MHz. In fact, Orange France has already begun to rollout its UMTS900 network and there is a possibility that UMTS900 handsets will be available in 2008.

Besides incurring greater costs (over rolling out UMTS2100), rolling out UMTS1800 to provide national coverage, as we have done for the provision of 2G, is just not a practical solution, mainly due to the lack of available equipment but also due to the different type of technology. [

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Ofcom clarifies its view in relation to 1800 MHz spectrum that¹:

- (i) it seems unlikely that 1800 MHz would in practice offer a cost advantage compared to 2100 MHz spectrum;
- (ii) even if there was a cost advantage, material competition and efficiency issues are unlikely to arise because 1800 MHz spectrum is held by four operators (compared to two operators for 900 MHz spectrum), and
- (iii) wider access to 1800 MHz spectrum is likely to be provided by the market if that would lead to more efficient use of spectrum.

To this end, Orange supports Ofcom's view that liberalising 1800 MHz spectrum in the hands of the incumbent holders would be effective in promoting both competition and efficient use of the spectrum.

Consideration of the timing issues for the re-allocation of spectrum

Orange believes that Ofcom may have overestimated the timing of transitioning from 2G to 3G for the 900 MHz operators, and possibly the percentage (35%) of 3G customers having 3G only handset by 2010 under the high demand scenario².

¹ Paragraph 8.71

² Paragraph 10.31, table 7

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Ofcom suggests that as 3G services take off, both 900 MHz operators will be able to move 3G customers onto the 3G network.

Clearly, the transition process could be speeded up by offering incentives to 2G customers to move to 3G, for example increasing handset subsidies and network deals. However, we believe that this could have a detrimental, and potentially destabilising, impact on the market.

Orange would therefore suggest that, if necessary, consideration is given to the mandatory release of spectrum initially in rural areas.

What happens if one 900 MHz operator does not want to roll out UMTS900?

It seems to Orange that Ofcom's analysis does not take account of the possibility that one of the incumbent 900 MHz operators may not wish to liberalise their 900 MHz spectrum. Much of Ofcom's current thinking is predicated on the transition of customers from 2G to 3G, hence the 'freeing up' of 2G spectrum for release.

Although we do not support a national roaming option, one of the 900 MHz operators not rolling out a UMTS900 network would result in Ofcom's UMTS900 national roaming proposal for 1800/ 2100 MHz operators being completely unworkable. We also believe that, in the event of such a possibility, Ofcom still has legal obligations under Article 3(2)³ of the RSC Decision, to make 2G systems available for UMTS networks, following the abrogation of the GSM Directive.

Consideration of the other spectrum bands available

[

]. Orange has given some thought to alternative options that would be available to it to roll out UMTS into rural areas at lower frequencies, leading to lower environmental impact and cost reductions. Clearly, the recent WRC 07⁴ allocation of the higher end, 790-862 MHz, of the digital dividend for mobile use on a European basis is of interest as it could offer the potential for access to additional low frequency spectrum, enabling reduced deployment costs and reducing dependency on our existing competitors to release spectrum.

Although it is Ofcom's provisional view that, within the timescales that are relevant to the liberalisation of 2G spectrum, it is unlikely that the digital dividend spectrum will be available as a substitute for the 900 MHz spectrum, Orange believes that it is highly likely that the timescales could easily merge, with one issue overtaking the other, as we consider that the refarming debate may have some way to run.

If this is the case, [

]. Without access to 900 MHz, and the associated cost advantages in a reduction in the number of sites

⁴ World Radio Conference

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and the availability of equipment, there will always be unacceptable cost distortions between the mobile operators which will undermine efficient competition.

In the absence of a satisfactory and speedy resolution of a mandatory release of part of current GSM 900 allocations from the incumbent operators, Orange would urge Ofcom to give the 1800/ 2100 MHz operators certainty of access to the spectrum released as a result of Digital Switchover (DSO).

Award procedure of the 2G spectrum

Ofcom is promoting an open auction for the 900 MHz spectrum. Orange strongly believes that the current issues regarding the spectrum distribution is a legacy issue for resolution within the mobile market.

Ofcom's consultation predominately discusses the market for the provision of mobile broadband services, with particular reference throughout to cost impact on the other MNOs if we do not have access to the 900 MHz spectrum. In fact, Ofcom states: *'As long as MNOs have access to at least one block of 900 MHz, subsequent blocks of 900 MHz would be largely used to provide capacity, and spectrum at higher frequencies is a reasonable substitute for 900 MHz in terms of providing capacity'*⁵. It is difficult to reconcile this view with Ofcom's proposal to promote an open award for the spectrum. .

Article 5(2) of the Authorisation Directive states that *'when granting rights of use of radio frequencies, Member States must do so through open, transparent and non-discriminatory procedures'*. In France, GSM licences have been liberalised to 3G by the ARCEP directly to the licence holders. Following consultation, it has been agreed with the operators, that, if a new entrant enters the market, access to a 5MHz 900 MHz block will be granted administratively with spectrum retrieved from the incumbent MNOs. Article 5(2) is not insisting upon an auction, merely an open, transparent and non-discriminatory mechanism.

If Ofcom is serious about removing the spectrum differentials in the mobile market, hence 1800/ 2100 legacy competitive distortions, then reallocation of the 900 MHz spectrum must take place amongst the mobile operators

Application of Administered Incentive Pricing (AIP) to retained spectrum

Ofcom briefly considers the use of AIP to promote efficient use of the spectrum, suggesting that if the AIP is sufficiently high then the relevant operator would, in theory, hand the spectrum back to Ofcom.

Orange looks forward to further consultation on the appropriate AIP.

Consideration of network sharing

As Ofcom is aware, Orange and Vodafone are currently in discussions to consider sharing radio access networks. There are cost benefits to both parties from sharing radio networks and benefits to the environment from a reduction in the number of

⁵ Paragraph 6.48

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masts. However, it is not envisaged that Orange would be able to gain access to 900 MHz spectrum.

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The RSC Decision on 900 MHz and 1800 MHz Spectrum and its implications for the UK

Question 3.1

Do you have any comments on Ofcom's interpretation of its obligations under the forthcoming RSC Decision?

Answer 3.1

The RSC Decision is a European harmonisation measure aimed at ensuring that the 2G spectrum is designated and made available for 3G use across the Community. Ofcom's current view is that:

1. an open ended timescale for implementation is not appropriate as it will not make the 900 MHz and 1800 MHz spectrum available for 3G use on a similar timescale across the EU and so could frustrate the harmonising objectives of the RSC Decision;
2. the RSC Decision does not require immediate implementation, and
3. although typical implementation periods tend to be between six months to just over three years, this case may take longer than three years to implement due to potential disruption on existing spectrum.

In light of current information, Orange supports Ofcom's view, although we are firmly of the opinion that the transition from 2G to 3G use and redistribution of spectrum at 900 MHz between the current mobile operators is a legacy issue which should be dealt with appropriately on a fair and equitable basis without resorting to an external auction processes.

Spectrum and the mobile sector

Question 5.1

Do you agree that the 900 MHz spectrum is likely to provide a cost advantage over higher frequencies for the provision of mobile broadband services? If so, do you believe that Ofcom's estimates of the size of that cost advantage are representative of what would be realised in practice?

Answer 5.1

Ofcom believes that it is likely that mobile broadband will become a more important and more widely used service for consumers, although Ofcom does recognise that there is also the possibility that mobile broadband may not become any more important than it is today. In order to assess the uncertainty inherent in the future of mobile broadband services, Ofcom has considered detailed modelling scenarios taking into account demand, nature of 3G technology and deployment. Orange has previously supported this work by submitting extensive information.

Ofcom's modelling demonstrates that access to 900 MHz spectrum provides a significant cost advantages, firstly, for providing good in-building quality and coverage in urban areas, and, secondly, for extending coverage into more rural areas. Ofcom believes that the cost advantage of 900 MHz over 2100 MHz for core (in building) areas is around £1.7bn per operator and for non core (rural) areas of 900 MHz over 2100 MHz around £250m per operator.

Orange supports Ofcom's view. It is well established that 900 MHz spectrum will provide a cost advantage over the higher frequencies (ie 1800 and 2100 MHz) for the provision of mobile broadband services, and that most of these savings would be as

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a result of a reduction in number of sites for coverage in rural areas and in building coverage.

[

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[

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Orange has a well developed mature 2G network on an 1800 grid, along with a significant 3G network already rolled out using the spectrum at 2100 MHz. Orange's desire is to provide national 3G coverage on a cost effective and competitive basis. Obviously, with the favourable characteristics of the 900 MHz spectrum, having access to this spectrum, particularly in the rural areas would mean that we would be able to reduce site numbers, bringing both environmental and cost benefits.

Orange supports Ofcom's view that the 900 MHz spectrum will provide a cost advantage over the higher frequencies for the provision of mobile broadband services.

Question 5.2

Do you agree that the 1800 MHz spectrum is unlikely in practice to provide a cost advantage over higher frequencies for the provision of mobile broadband services?

Answer 5.2

Ofcom states that modelling the advantages of access to 1800 MHz spectrum relative to 2100 MHz shows, in theory, that there might be some cost advantages. However, it believes that these advantages are significantly less than the advantages resulting from access to 900 MHz. Furthermore, Ofcom believes that when combined with uncertainties over equipment availability, it does not consider it likely that 1800 MHz will offer a cost advantage in practice.

Orange agrees that 1800 MHz spectrum is unlikely in practice to provide a cost advantage over higher frequencies ie 2100 MHz whilst there is already significant development for handsets at 900 MHz. In fact, Orange France has already begun to rollout its UMTS900 network and there is a possibility that handsets will be available in 2008.

FT Group and Orange have been lobbying manufacturers for some time to develop 3G equipment for use at 1800 MHz. Discussions with handset providers prove that there is little appetite to produce UMTS1800 equipment as the markets for 1800 only operators are limited. Even if handsets and equipment were produce, the usual economies of scale do not exist and so costs would be likely to be higher. In fact, the choices become ever more complicated as device manufacturers are now asking the operators to choose between 2100/ 900/ 1800 tri-band UMTS or 2100/ 900/ 1900 tri-band UMTS. Obviously, we need to consider that the latter offers the potential to roam in USA on UMTS 1900. The reality is that unique 1800 handsets are

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increasingly unlikely and we face the weight of economies of scale, and the sheer number of operators who, globally, have access to 900 MHz spectrum.

Orange supports Ofcom's view that the 1800 MHz spectrum is unlikely in practice to provide a cost advantage over higher frequencies for the provision of mobile broadband services.

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Impact of distribution of 900 MHz & 1800 MHz spectrum on competition and efficiency

Question 6.1

Do you agree that if the existing distribution of the 900 MHz spectrum continued post liberalisation, this would be unlikely to promote competition for the provision of mobile broadband services?

Answer 6.1

Ofcom accepts that although the future growth of demand for mobile broadband services is uncertain at the moment, if either of the medium or high scenarios were to be realised, neither of which we believe would be unrealistic, then asymmetric access to 900 MHz would be likely to lead to significant differences in the quality, and costs, of 3G services that MNOs are able to provide.

We believe that there is the possibility that some of the MNOs may respond negatively to Ofcom's proposals. However, we believe that their responses should be clearly measured against two distinct issues:

1. firstly, whether the MNO disagrees with the main premise that restricted access to 900 for 3G offers unfair competitive advantage, and
2. secondly, if the first answer is yes then practically whether spectrum can be released by 2010

In general, Orange supports Ofcom's findings on the first issue, although we believe there are practical considerations that may flex the overall scale of the difference from the theoretical, but not the general underlying point. It is clear that Ofcom's analysis and modelling is somewhat theoretical and does not reflect the actual situation in the mobile market or the existing networks. Whilst such an approach is suitable for initial work, Orange would support the development of the analysis to take account of more practical situations. However, with respect to the timing, we recognise that there may be some practical issues on timing that we might need to deal with.

Orange supports Ofcom's view that operators without 900 MHz would forego substantial savings in infrastructure costs in having to use higher frequency spectrum or alternative technologies. In any event, it is not clear that suitable technology alternatives exist. In-building solutions will be expensive and Wimax is unlikely to be of assistance as the basic laws of physics still apply and additional base stations, increasing costs, would still be needed at higher frequencies.

Orange has invested heavily in the current and future development and deployment of UMTS, [

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Besides incurring greater costs (over rolling out UMTS2100), rolling out UMTS1800 to provide national coverage, as we have done for the provision of 2G, is just not a practical solution. [

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already]]. However, it is known and accepted by the industry, and has

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been discussed in this response, that UMTS1800 equipment will not be available in the same timeframe as UMTS900 equipment, if at all. Therefore, it is just not an appropriate solution at this time.

Ensuring a level playing field

To date, regulatory allowances have been made for the asymmetry of spectrum holdings in the mobile termination rate, this will now be phased out by 2011. However, as Orange has argued in previous submissions, this does not mean that asymmetries will not remain. It is an undisputed fact that, basically, network deployment using lower frequency spectrum will require less base stations. Therefore any operator with access to lower frequency spectrum will incur fewer costs when deploying a network.

Ofcom must ensure that it applies a level playing field consistently to all holders of spectrum licences. Ofcom has recently allowed UK Broadband to amend its fixed wireless access licence to become technology and service neutral enabling it to provide mobile services, with no additional costs to UK Broadband beyond the original licence fees.

Consideration of alternative spectrum bands

Orange has given some thought to alternative options that would be available to it to roll out UMTS into rural areas at lower frequencies, leading to lower environmental impact and cost reductions. Clearly, the recent WRC 07 allocation of the higher end, 790-862 MHz, of the digital dividend for mobile use on a European basis is of interest as it could offer the potential for access to additional low frequency spectrum, enabling reduced deployment costs and reducing dependency on our existing competitors to release spectrum. Some manufacturers have already indicated that they are considering the development of chipsets in this band.

It is Ofcom's provisional view is that within the timescale that is relevant to the 900 MHz spectrum liberalisation, it is unlikely that the digital dividend spectrum will be a substitute for the 900 MHz spectrum. Orange believes that it is highly likely that the timescales could easily merge with one issue over taking the other, as we believe that the debate regarding refarming of 2G spectrum may still have some way to run.

[
]. Without access to 900 MHz, and the associated cost advantages in a reduction in the number of sites and the availability of equipment, there will always be unacceptable cost distortions between the mobile operators which will undermine efficient competition.

In this case, it may be that the spectrum released by the digital switchover would be a suitable alternative, particularly with guaranteed access in a guaranteed timeframe.

Consideration of the award procedure

Ofcom is promoting an open auction for the 900 MHz spectrum. Orange strongly believes that the current issues regarding the spectrum distribution is a legacy issue

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for the mobile market alone. Ofcom's consultation discusses the market for the provision of mobile broadband services, with particular reference throughout to cost impact on the other mobile operators if we do not have access to the 900 MHz spectrum. In fact, Ofcom states: *'As long as MNOs have access to at least one block of 900 MHz, subsequent blocks of 900 MHz would be largely used to provide capacity, and spectrum at higher frequencies is a reasonable substitute for 900 MHz in terms of providing capacity'*⁶. It is difficult to reconcile this view with Ofcom's proposal to promote an open award for the spectrum. If Ofcom is serious about removing the spectrum differentials in the mobile market, then reallocation of the 900 MHz spectrum must take place amongst the mobile operators.

Article 5(2) of the Authorisation Directive states that *'when granting rights of use of radio frequencies, Member States must do so through open, transparent and non-discriminatory procedures'*. In France, GSM licences have been liberalised to 3G by the ARCEP directly to the licence holders. Following consultation, it has been agreed with the operators, that, if a new entrant enters the market, access to a 5MHz 900 MHz block will be granted administratively with spectrum retrieved from the incumbent MNOs. Article 5(2) is not insisting upon an auction, merely an open, transparent and non-discriminatory mechanism.

If Ofcom is serious about removing the spectrum differentials in the mobile market, hence 1800/ 2100 legacy competitive distortions, then reallocation of the 900 MHz spectrum must take place amongst the mobile operators

Question 6.2

Do you agree that if the existing distribution of the 900 MHz spectrum continued post liberalisation, this would be unlikely to secure optimal use of the radio spectrum?

Answer 6.2

In its consultation document, Ofcom correctly states that the majority of the cost advantages of 900 MHz spectrum accrue to the first block held by an operator. It goes on to say that for the purposes of competition and efficiency the most significant factor is that a wider range operators have access to at least one block of 900 MHz spectrum⁷.

All the mobile operators have 3G licences and are investing in 3G equipment. As already discussed, the 900 MHz spectrum is complimentary to the existing spectrum holdings of the other mobile operators and they will surely be the most efficient users of the spectrum with their existing 3G consumers.

Consequently, Orange believes that redistributing the 900 MHz spectrum amongst the existing mobile operators will ensure a more optimal use of the spectrum.

Question 6.3

⁶ Paragraph 6.48

⁷ Paragraph 6.51

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Do you agree that if the existing distribution of the 1800 MHz spectrum continued post liberalisation, this would be likely to promote competition for the provision of mobile broadband services?

Answer 6.3

It is Ofcom's initial view that it is not certain that a wider distribution of the 1800 MHz spectrum would be more competitive and efficient, given that 1800 MHz spectrum is unlikely in practice, to confer a cost advantage over the higher frequency spectrum⁸. As already discussed, it is not clear when, or even if, UMTS1800 equipment will be developed. [

]. This has been demonstrated in both the press and industry as there is clearly little lobbying and no demand for access to 1800 spectrum.

However, as already discussed, Orange is working, with its parent France Telecom, to lobby manufacturers to take into account operators with access to 1800 spectrum and to encourage development of alternative technologies. Final development is certainly some time away and will happen, if indeed it happens at all, some time (at least) two years after the release of UMTS900.

Question 6.4

Do you agree that if the existing distribution of the 1800 MHz spectrum continued post liberalisation, this would be likely to secure optimal use of the radio spectrum?

Answer 6.4

Ofcom believes that if the 900 MHz were more evenly distributed, changing the distribution of the 1800 MHz spectrum would have little additional effect on competition and efficiency⁹. 1800 MHz spectrum is a close substitute for 2100 MHz, and to some extent 2600 MHz, hence the difference in holdings of 1800 MHz spectrum seem unlikely to have an impact on competition¹⁰.

As development of 3G services takes off, Orange is utilising its 3G spectrum for more and more data services. As already discussed, until UMTS equipment becomes available at 1800 MHz it is not clear how this spectrum will be able to support additional 3G services. [

]. It is the 900 MHz spectrum that will improve cost efficiencies for both us and our customer.

To this end, Orange would support Ofcom's view that changing the distribution of the 1800 MHz spectrum would have little additional effect on competition and efficiency.

⁸ Paragraph 6.50

⁹ Paragraph 6.50

¹⁰ Paragraph 6.48

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Option A: Liberalisation in hands of incumbents

Question 8.1 (p89)

Do you agree with Ofcom's assessment of the merits of Option A (Liberalisation in the hands of the incumbents) for the implementation of the RSC Decision in respect of the 900 MHz spectrum?

Answer 8.1

Ofcom's option A considers liberalisation of the 2G spectrum in the hands of the incumbents, where Ofcom would remove the restrictions in the licences of the current holders of 900 MHz and 1800 MHz spectrum that limit the use of that spectrum using GSM technology. It is Ofcom's view that if option A were implemented for 900 MHz spectrum there is a risk that the market (ie the incumbent 900 MHz operators) would not deliver wider access to the 900 MHz spectrum. Hence the benefits of option A in terms of promoting competition and efficient use of spectrum could be limited in comparison to alternative options for implementing the RSC Decision¹¹.

In its analysis, Ofcom has considered secondary market trading, national roaming, AIP¹², and network sharing.

Secondary market

Considering a secondary market trading in 900 MHz spectrum, Orange concurs with Ofcom's view that, in theory, a holder of 900 MHz spectrum would have an incentive to trade a block of 900 MHz spectrum to operators without 900 MHz spectrum if the value of the each block was lower than its value to another operator. However, in reality, the incumbent 900 MHz operators would potentially be trading, or selling, their spectrum to a competitor. This is unlikely to happen. In addition, if either one of the current 900 MHz operator is not intent on rolling out UMTS900, there will be little or no incentive on them to trade spectrum. For these reasons, Orange does not believe that a secondary market in 900 MHz is currently a viable option.

3G national roaming

Ofcom also considers a roaming scenario whereby the 900 MHz operators would offer the 1800 MHz operators wholesale access to 900 MHz spectrum. Whilst this is certainly an option, there are at least two significant issues with this proposal:

1. firstly, that Ofcom seems to have made an underlying assumption that both 900 MHz operators will be keen to roll out UMTS900. If this is not the case, then this option will not work, because the 1800/ 2100 operators will be clamouring to access the network of the one operator rolling out UMTS900,
2. secondly, because there would still be limited competition in the market as the roaming MNOs would be entirely dependant upon the commercial and technical strategies, such as end coverage objectives, quality of service and service levels of the relevant 900 MHz operator.

¹¹ Paragraph 8.62

¹² Administered Incentive Pricing

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The use of AIP

Ofcom briefly considers the use of AIP to promote efficient use of the spectrum, suggesting that if the AIP is sufficiently high then the relevant operator would, in theory, hand the spectrum back to Ofcom. Orange supports Ofcom's view that it doubts there would be sufficient incentives for an incumbent 900 MHz operator to hand the spectrum back to Ofcom. In addition, it would require extensive and lengthy, potentially subjective, analysis to determine an appropriate AIP for the use of the spectrum for 3G services. Again, it is not clear how this would help the other MNOs gain access to the spectrum if one of the 900 MHz operators was not inclined to roll out UMTS900.

Network sharing

Ofcom considers whether network sharing by non-900 MHz MNOs would be efficient and pro-competitive. Whilst it may enable a network to be rolled out at reduced cost between the non-900 MHz operators, this would only be using the 2100 MHz network as there is still likely to be no UMTS1800 equipment available. To this end, Orange supports Ofcom's initial view that network sharing between the non-900 MHz operators is unlikely to adequately address the competition and efficiency concerns that arise in liberalising the 900 MHz spectrum in the hands of the incumbents¹³.

Orange shares Ofcom's concerns that if the 900 spectrum is liberalised in the hands of the incumbents there is a risk that the benefits of 900 spectrum will not be delivered to the market¹⁴.

For the reasons set out above, Orange supports Ofcom's view that the liberalisation of the 900 spectrum in the hands of the incumbents is inappropriate.

Question 8.2

Do you agree with Ofcom's assessment of the merits of Option A (Liberalisation in the hands of the incumbents) for the implementation of the RSC Decision in respect of the 1800 MHz spectrum?

Answer 8.2

Ofcom clarifies its view in relation to 1800 MHz spectrum that¹⁵:

- (i) it seems unlikely that 1800 MHz would in practice offer a cost advantage compared to 2100 MHz spectrum;
- (ii) even if there was a cost advantage, material competition and efficiency issues are unlikely to arise because 1800 MHz spectrum is held by four operators (compared to two operators for 900 MHz spectrum), and
- (iii) wider access to 1800 MHz spectrum is likely to be provided by the market if that would lead to more efficient use of spectrum.

¹³ Paragraph 8.60

¹⁴ Paragraph 8.62

¹⁵ Paragraph 8.71

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It is therefore Ofcom's initial view that liberalising 1800 MHz spectrum in the hands of the incumbent holders would be effective in promoting competition and efficient use of spectrum. Orange supports this view.

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Option B: Regulated roaming

Question 9.1

Do you agree with Ofcom's assessment of the merits of Option B (Liberalisation in the hands of the incumbents subject to a roaming condition) for the implementation of the RSC Decision in respect of the 900 MHz spectrum?

Answer 9.1

Ofcom's option B considers liberalisation of the spectrum in the hands of the incumbent licensees, subject to a regulatory obligation to offer roaming to third parties who did not hold that spectrum, under regulated terms and conditions. It is Ofcom's view that, although regulated roaming addresses some competition and efficiency concerns, it also risks imposing significant costs and may also act as a disincentive for 900 MHz operators to deploy UMTS 900 networks. Therefore Ofcom's initial view is that Option B is unlikely to be the most appropriate way to implement the RSC Decision for 900 MHz spectrum¹⁶.

Orange does not entirely concur with this view. Clearly it is not the best solution (ie owning the 900 MHz spectrum), but it is a reasonable option nonetheless. [

]. The use of a roaming clause, regulated or otherwise, may be sufficient in the short to medium term to enable the process to continue. However, if one of the operators does not intend rolling out UMTS 900 for some time, there will be pressure on the other operator to provide roaming services for possibly up to three operators. In addition, and as Ofcom recognises¹⁷, it would constrain the ability of the roaming operators to be innovative by removing the ability for each operator to differentiate on service in the core network thus removing the opportunity to offer consumer choice whilst possibly limiting capacity and coverage. Part of our core business is as a network operator, as opposed to an MVNO, and this would be clearly a less than ideal situation.

There are costs incurred with roaming on a short term basis, also a lack of certainty in the longer term. However, it could be seen as a short term solution if Ofcom was prepared to give a commitment to the 1800/ 2100 operators that they would have access to the released digital dividend spectrum when it became available in 2011.

Taking the above into account, Orange would support regulated roaming on a UMTS 900 network but only with a sunset clause and a commitment for access to the released digital dividend spectrum when it becomes available.

Question 9.2

Do you agree with Ofcom's assessment of the merits of Option B (Liberalisation in the hands of the incumbents subject to a roaming condition) for the implementation of the RSC Decision in respect of the 1800 MHz spectrum?

Answer 9.2

Ofcom has already clearly stated that it believes that the Option A is the most appropriate way forward for the 1800 MHz spectrum. Orange would support this view.

¹⁶ Paragraph 9.26

¹⁷ Paragraph 9.11

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Even if a roaming condition were appropriate for 1800 MHz spectrum holders, as we have discussed at length, there is unlikely to be any UMTS1800 equipment available for a number of years and so it is just not a practical option.

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Background to options C & D: Partial and full mandatory spectrum release

Question 10.1

Do you agree that in principle some form of mandatory release of 900 MHz spectrum is appropriate in order to implement the RSC Decision?

Answer 10.1

Orange strongly believes that the only way forward for the 1800/ 2100 MHz operators to compete with Vodafone and O2 on a level footing is for the mandatory release of part of the 900 MHz spectrum. However, we recognise that it is a complicated and delicate issue and needs to be handled carefully and appropriately, and detailed consideration needs to be given to the timing aspects.

With the imminent release of UMTS900 equipment and handsets, this issue must be tackled now if the UK mobile market is to continue being the competitive market that it has been to date. To date, Orange has met, and exceeded its 3G rollout commitment under its 3G licence. [

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Question 10.2

Do you agree that in principle some form of mandatory release of 1800 MHz spectrum is unlikely to be appropriate and that Option A is likely to be the most appropriate means to implement the RSC Decision in respect of the 1800 MHz spectrum?

Answer 10.2

See response to Question 8.2

Option C: Partial Mandatory spectrum

Question 11.1

Do you agree with Ofcom's assessment that the version of Option C in which there is the simultaneous release of three 2 x 5 MHz blocks of 900 MHz spectrum in 2010 is likely to be the most appropriate means to implement the RSC Decision in respect of the 900 MHz spectrum?

Answer 11.1

Ofcom's Option C considers partial mandatory spectrum release (revocation of part of the spectrum usage rights held by existing licensees and re-award by Ofcom) and liberalisation of the remainder of the spectrum in the hands of the incumbent licensees.

Ofcom has reached the initial view that in principle it has some merits compared with Option A. However, it recognises that it is likely to impose some costs on the 900 MHz operators.

Orange supports Ofcom's Option C of partial mandatory spectrum release for the 900 MHz spectrum. Only by having access to the 900 MHz spectrum will the other 1800/ 2100 MHz operators be able to compete with the incumbent 900 MHz operators on an equal basis. The inequality of the spectrum holdings has always been an issue that we have known, as an industry, needs resolving. To date, allowances have

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been made through the regulated termination charge for the inequality of holdings. This asymmetry is being phased out and will no longer exist after 2011. 3G is still a relatively new technology and it is right that these spectral inequalities are resolved as early as possible.

Orange believes that Ofcom may have overestimated the timing of transitioning from 2G to 3G for the 900 MHz operators, and possibly the percentage (35%) of 3G customers having 3G only handset by 2010 under the high demand scenario¹⁸. Ofcom suggests that as 3G services take off, both 900 MHz operators will be able to move 3G customers onto the 3G network.

Clearly, the transition process could be speeded up by offering incentives to 2G customers to move to 3G, for example increasing handset subsidies and network deals. However, we believe that this could have a detrimental, and potentially destabilising, impact on the market.

Orange would therefore suggest that, if necessary, consideration is given to the mandatory release of spectrum initially in rural areas.

¹⁸ Paragraph 10.31, table 7

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Option C: Partial mandatory spectrum release – Implementation issues for 900 MHz spectrum

Question 12.1

Do you agree with Ofcom's proposal for the mechanism of release and the terms and condition for the released 900 MHz spectrum?

Answer 12.1

Ofcom's initial views on the most appropriate mechanism for mandating spectrum release are:

- a revocation notice to be served on the incumbents for the 900 MHz blocks to be released (probably in 2008);
- An auction to be held for all of the released blocks (possibly in 2009 ahead of the release). Following the auction, licences to use the released spectrum would be granted with rights to use beginning when the spectrum is cleared (ie 2010 for a 2010 release);
- The incumbent holders of 900 MHz spectrum would not be permitted to participate in the auction for the released 900 MHz spectrum, and
- No auction participant would be permitted to acquire more than one 2x5MHz block of 900 MHz spectrum.

Orange is generally supportive of the proposed timings. However, we have two significant issues with the detailed proposals. Firstly, we do not believe that the spectrum should be awarded until Ofcom has certainty as to the date that it will be released by the 900 MHz operators. We would like to see further certainty on this point. Secondly, as already discussed, Orange clearly sees the reallocation of the 900 MHz spectrum as a legacy issue for the mobile industry. Ofcom's detailed modelling is mainly predicated on the cost savings associated with access to 900 MHz spectrum compared with other mobile spectrum holdings. It is therefore appropriate that the 900 MHz spectrum should be awarded within the mobile industry in order to maximise the benefits.

Article 5(2) of the Authorisation Directive states that '*when granting rights of use of radio frequencies, Member States must do so through open, transparent and non-discriminatory procedures*'. In France, GSM licences have been liberalised to 3G by the ARCEP directly to the licence holders. Following consultation, it has been agreed with the operators, that, if a new entrant enters the market, access to a 5MHz 900 MHz block will be granted administratively with spectrum retrieved from the incumbent MNOs. Article 5(2) is not insisting upon an auction, merely an open, transparent and non-discriminatory mechanism.

However, we would support Ofcom's view that it would not be appropriate for the 900 MHz operators to enter any award process, either open or closed, and that all participants should be restricted to one block.

Orange generally supports the timing of the process, although we strongly believe that the spectrum should be administratively allocated to manage the existing legacy issue of mobile spectrum distribution and reallocation should not take place until Ofcom has obtained certainty regarding revocation of the 900 MHz spectrum.

Question 12.2

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Do you agree with Ofcom's proposal for the terms and conditions for the retained 900 MHz spectrum?

Answer 12.2

Ofcom proposes that both the released and the retained 900 MHz spectrum would be made tradable. Ofcom also states that its initial view is that it would be preferable to introduce trading, but that some form of competition review of trades would be important to prevent the competition benefits of spectrum release being undone.

We would be supportive of retained, and auctioned, spectrum being made tradable – as is the case in other sectors. We are not clear why Ofcom would be considering a competition review. Surely, any of the parties who has gained the rights to 900 MHz spectrum should have the right to manage their spectrum in the most appropriate manner for their business. If Ofcom's concern is around the possibility of one of the 900 MHz operators gaining access to the spectrum it has just released, then surely this is a general competition matter and not one specifically relevant to the trading of spectrum.

Ofcom must ensure that there is a level playing field for all spectrum holders and that the mobile market is not singled out.

Option D: Full mandatory spectrum release for 900 MHz spectrum

Question 13.1

Do you agree with Ofcom's assessment of the merits of Option D (Full Mandatory Spectrum Release) for the implementation of the RSC Decision in respect of the 900 MHz spectrum?

Answer 13.1

Ofcom's option D considers full mandatory return of all the 900 MHz held by the incumbent holders, O2 and Vodafone, to Ofcom and their re-award by Ofcom.

Ofcom's initial view is that:

- a full early release would have very high costs, reduce the benefits of liberalisation and is very unlikely to be proportionate.
- A late full release would significantly delay the benefits of liberalisation and it is unlikely that it would be consistent with timely implementation of the RSC Decision
- A phased full release may have some advantages compared to an early or late full release. However, it is still very unlikely to be proportionate, particularly when compared to phased partial released options.

Ofcom therefore concludes that in all cases, analysis suggest that full release is not required to address competition and efficient concerns.

Orange would endorse Ofcom's view.

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Conclusion and next steps on implementation of RSC Decision

Question 14.1 (p146)

Do you agree with Ofcom's proposals for the implementation of the RSC Decision in relation to the 900 MHz spectrum?

Answer 14.1

In order to implement the RSC Decision in a timely manner, Ofcom proposes the following timeframe:

2008	Statement setting out approach Consultation on award of spectrum Issue revocation notices
2009	Possible auction
2010	Release of spectrum

As already discussed in our response, Ofcom is generally supportive of the timing as we believe additional access to 900 MHz spectrum will be required by 2010. In order to gain access by this date, the timeframe therefore needs to run similar to that set out by Ofcom above. However, Orange does have concerns that the re-allocation of spectrum could take place prior to the release of the spectrum. To this end, Ofcom must ensure that it follows a rigorous process to ensure there is no risk of the spectrum not being available to the new spectrum holders.

Question 14.2 (p146)

Do you agree with Ofcom's proposals for the implementation of the RSC Decision in relation to the 1800 MHz spectrum?

Answer 14.2

Taking Orange's response to the previous question into account, Orange believes that liberalisation of the 1800 MHz spectrum should be a distinct and separate issue to the liberalisation of the 900 MHz operators.

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Other issues relating to 900 MHz and 1800 MHz Spectrum

Question 15.1 (p149)

Do you think that Ofcom should make the 900 and 1800 MHz spectrum available for systems other than GSM and UMTS? If so, for what systems, on what timescale and by what mechanism?

Answer 15.1

The RSC Decision requires that any systems other than GSM and UMTS may only be authorised to use the spectrum provided they can co-exist with GSM and UMTS both in the UK and in neighbouring Member States.

Ofcom's proposes two option for the introduction of technology neutral licences, I

- A: technology neutral licences including full specification of technical conditions introduced at the outset
- B: initially licences only allow GSM and UMTS but use by other technologies implemented by licence variation on a case by case basis.

Although Ofcom has not yet undertaken feasibility studies, its initial view is that Option A is preferable.

Orange would support option B at this point. This is a process that has been successfully used in the UK already (by UK Broadband) and we can see no reason why the 900 MHz spectrum would be allocated, in the first instance, to any other technology than UMTS.

Question 15.2 (p149)

Do you believe that licences for the 900 and 1800 MHz spectrum should be made tradable? If so, on what timescale and should trading be subject to any competition restrictions?

Answer 15.2

Ofcom proposes to introduce spectrum trading for licensees of the 900 MHz and 1800 MHz spectrum when it carries out the necessary licence variations to implement the RSC Decision.

Orange would support this initial view but, as discussed in our previous response, we await further details.

Application of spectrum trading & liberalisation to licences for 2100 MHz Spectrum

Question 16.1 (p151)

Do you believe that the licences for 2.1 GHz should be liberalised and if so on what timescale?

Answer 16.1 Orange would support Ofcom's proposal to liberalise the 2.1 GHz (UMTS licences) licences. In fact, it is not clear why Ofcom would do anything other than introduce trading ensuring that there is a level playing field between all operators and holders of spectrum licences.

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Question 16.2 (p151)

Do you believe that the licences for 2.1 GHz should be made tradable and if so on what timescale?

Answer 16.2

In line with our response to the previous question, Orange would fully endorse the proposal to introduce trading in the 2.1 GHz (UMTS licence) band.

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