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Dougal Scott
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Engineering the future

1 February 2005

Dear Mr Scott,

Re: Ofcom consultation "Strategic Review of Telecommunications - Phase 2"

The IEE is pleased to have this opportunity to respond to Ofcom's public consultation document "Strategic Review of Telecommunications - Phase 2".

The IEE's 130,000 members are drawn from a broad range of engineering disciplines including those directly concerning all aspects of telecommunications, radio spectrum, and media. The IEE's membership represents a wide range of expertise from technical experts to business leaders. Many of the most experienced members of the IEE, and their sector peers, voluntarily participate in a variety of IEE policy guidance groups. To these groups they bring their wealth of personal experience and knowledge, independent of commercial interests, to address the policy issues of the day and give the IEE independent and authoritative views of trends in technology and engineering. This response has been prepared by the Communications Sector Panel, on behalf of the IEE Trustees.

The IEE Membership was consulted in preparing this response.

The IEE's response is in the form of an Annex comprising a preamble and a re-statement of the consultation document's questions with responses thereto. Responses have been given to questions where the IEE feels able to add to the consultation process. The Annex question numbering corresponds with that in the consultation document.

If you require further information or amplification of any aspect of this response, then please do not hesitate to contact me. In particular, if Ofcom wish to meet with members of our Communications Sector Panel to explore aspects of this response we will be pleased to make suitable arrangements.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Nick Moiseiwitsch".

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ANNEX

A response by the Institution of Electrical Engineers (The IEE) to the specific questions posed by Ofcom in their "Strategic Review of Telecommunications - Phase 2" consultation document, issued 18 November 2004.

The numbering below corresponds with Ofcom's "Question #" numbering system. Questions to which there is a response are in bold type, with the response in italics.

Preamble

In formulating its response the IEE has formed the view that regulation of the telecommunications industry in the UK should most importantly: -

1. allow for differing wholesale regulation dependent upon geographic economics, with due consideration of gateway portals to differing consumer density zones;
2. aim for "seamless mobility" with wide interoperability between networks and technologies even where this might require content repurposing to match bandwidth criteria etc;
3. be technology neutral;
4. have new fixed line installations as easy to connect to 'Altnets' (Alternative Networks) as BT services;
5. maximise future competitive options by opening up the interface between the MSAN (Multi-Service Access Node) and the call server; and
6. balance risk with reward and avoid policies which discourage investment in new technology.

List of questions: -

1. Do you agree with Ofcom's proposed principles for regulation of telecoms markets?

Ofcom's stated seven principles are that Ofcom should (*and our comments are*): -

- 1. promote competition at the deepest levels of infrastructure where it will be effective and sustainable;**

The IEE recognises that Ofcom wishes to avoid regulating at multiple points in the value chain. Nevertheless, a 'deep-level' solution like Local Loop Unbundling (LLU) will only be 'effective and sustainable' in dense urban areas. Other solutions further along the value chain will still be needed elsewhere. This highlights the particular problem of the geographic determinate nature of telecoms markets.

- 2. focus regulation to deliver equality of access beyond those levels;**

It may be that non-discrimination at the wholesale/retail interface has featured in regulatory thinking for many years. The IEE agrees that a new approach is probably needed, but concentrating upon "equivalence" in both a physical and process sense may not be sufficient. Arguably BT's first duty is to its shareholders and this may be reflected in its 'fiscal - attitude'

to equality of access. It may be that Ofcom would prefer to use the Communications Act/EU Directives to deal with access disputes, as they are more quickly implemented; but in so doing the Competition Act's powerful incentive of fines is largely absent.

3. as soon as competitive conditions allow, withdraw from regulation at other levels;

As referred to above, while in principle withdrawing "at other levels" may seem appropriate, in practice these "other levels" might be wholesale remedies outside of the dense urban areas.

4. promote a favourable climate for efficient and timely investment and stimulate innovation, in particular by ensuring a consistent and transparent regulatory approach;

We understand the EU Directives makes this a duty upon Ofcom, and thus is clearly an important aim, but the IEE recognises that it is very hard to implement, in an even handed manner, given the UK market.

5. accommodate varying regulatory solutions for different products and, where appropriate, different geographies;

The IEE agrees that Telecommunications has historically shown significant 'economics' of customer density. Varying solutions for different areas will be important, but access to less-dense geographies may be via hubs in denser areas; sustainable density of penetration against existing operators or service providers is also key.

6. create scope for market entry that could, over time, remove economic bottlenecks; and

Although many techniques will be used access via fixed line networks is likely to dominate in terms of bits delivered at least for the medium term. Mobile/wireless networks should, on these timescales, be seen as complementary to fixed line, rather than simply, head-to-head competing with fixed line networks. There is thus a need to promote interoperability between all telecommunication network technologies be they for voice, audio, video or data services, albeit, there will be bandwidth considerations which are reflected in quality and speed issues etc.

7. in the wider communications value chain, unless there are enduring economic bottlenecks, adopt light-touch economic regulation based on competition law and the promotion of interoperability.

The IEE suggest that use of Competition Law may not be "light-touch" as there are characteristically punitive fines associated with its use. 'Appropriate and proportionate economic regulation' might replace "light-touch economic regulation". The IEE supports the guiding principle of interoperability across networks and technologies.

1 a) What regulator role should Ofcom play in the wider telecoms value chain?

Ofcom should take a leadership role in promoting the wider interoperability needed to deliver 'seamless mobility' - this will involve many parts of the value chain including those where formal regulation may not be required. Seamless mobility is not just a challenge at the transport level, but one that requires action at other layers e.g. content to be repurposed according to the available bandwidth. Ofcom is well placed to focus on these issues.

1 b) How should Ofcom reflect differences in competitive characteristics in different geographic areas?

As mentioned above there has to be full recognition of the problems of the economics of density of demand. Further, it has to be recognised that accessing less dense areas may require access nodes located in more dense parts of the network. For example, access to the less dense area of SW England is likely to be through places such as Bristol. This implies distinguishing between different densities and the means by which they can be accessed.

1 c) What factors need to be taken into account when considering the scope of demand and supply-side substitution in telecoms markets on a geographical basis?

The IEE suspects that on the demand-side, there will be continuing need for Alternative Networks (Altnets) to purchase wholesale access products that give as much flexibility as possible, so that they are not faced with offering different retail products according to geography.

1 d) To what extent would it be appropriate in the future to take into account differences in competitive conditions in different areas through (i) the aggregation of similar geographic areas or (ii) through different remedies?

As mentioned above, the IEE believes that different remedies will be required in different areas, but in a way that avoids differentiation at the retail level - this is important to avoid a 'rural divide'. Solutions must reflect both the density of demand and the paths through which access to these areas are made.

1 e) Would you support a requirement to provide Ofcom with data on particular products on a geographic basis as part of the regular reporting requirements? What is the correct level of disaggregation?

If Ofcom is to be an evidence based regulator then it will need to collect such data. The size of a Postcode zone will give an indication of population density and may be an appropriate level of disaggregation.

2. Where and to what extent should Ofcom rely on *ex post* competition law rather than *ex ante* regulatory conditions?

*The IEE believes the current EU telecommunications regulatory framework is intended to be a half-way-house between *ex-ante* (e.g. the Communications Act) and *ex-post* (e.g. the Competition Act) types of regulation, so both have their place.*

3. In what circumstances would it be appropriate for Ofcom to make a reference under Section 131 of the Enterprise Act?

The IEE recognises that Ofcom sees this as a last resort action.

4. Should Ofcom adopt a broad approach of focusing regulation on enduring economic bottlenecks while tackling the problem of inequality of access head-on?

In principle the IEE agrees, but suspects that inequality in access is a bigger challenge than addressing equivalence of inputs.

5. How can real equality of access be achieved at the product level?

5 a) Do you agree with Ofcom's definitions of the various forms of equivalence?

5 b) Do you agree that equivalence of inputs can deliver more effective equality than application of equivalence of outcomes?

The IEE believes that successful regulators tend to focus upon 'outcomes' and not 'inputs'. So moving to regulating 'inputs' rather than 'outcomes' would be a serious step that seems to run counter to Ofcom's expressed desire to move away from detailed intrusive regulation.

5 c) Do you agree with the principles proposed on where equivalence should be applied and the specific suggestions for individual products?

5 d) How do you suggest the principle of equality is achieved for 'associated products' that BT does not depend on (such as migration products)?

6. What behavioural changes by BT do you believe would be necessary to achieve real equality of access?

7. How should Ofcom reflect the competing considerations of efficient investment and consumer protection in determining the regulated returns that BT may earn from its network?

The IEE believes that, in order to get investors, businesses which take high commercial risks must have the potential to receive a payback that reflects these high risks. Ofcom should choose policies that balance risk with reward and avoid those which discourage investment in new technology.

8. Do you agree with Ofcom's proposed approach to current generation broadband?

8 a) What should Ofcom's approach be to naked DSL?

The IEE sees this as a difficult area. In the short term, the UK needs to face the fact that fully unbundled loops are more expensive than in many other advanced economies and is arguably holding back broadband investment by Altnets. So a tactical approach is required to ensure that local loop unbundling (LLU) prices move towards a price that keeps the UK competitive with other countries.

8 b) Should there be different regulated wholesale products for current generation broadband in different locations?

The IEE suggests that LLU is only viable in dense urban areas. So the challenge is to provide equivalent (or nearly equivalent) capabilities suitable for less dense areas, while not regulating these more downstream products where LLU is viable. But as mentioned above, this may mean not regulating a product in, say, Bristol, while allowing regulated access via Bristol to the South-West.

MSANs are intimately controlled by their parent call server, so complete separation to allow shared MSANs between BT and Altnet is problematic. The IEE doubts whether it would be economic for Altnets to interconnect at the MSAN level (given there might be some 30,000 in the UK) except in very dense locations where LLU is probably a viable approach. But opening up the interface between the MSAN and Call Server, though challenging, may bring competitive rewards.

8 c) How should the potential lack of equivalence faced by LLU operators in a 21st Century network environment be addressed?

The lack of equivalence between 'broadband dial-tone' and LLU based services may be a case where the cost of a remedy exceeds the benefits to the market.

9. Do you agree with Ofcom's proposed approach to deregulation of voice services?

9 a) Do you agree that Ofcom should review regulation of retail voice markets in 2005?

9 b) Do you agree with Ofcom's proposals for deregulating call conveyance markets and wholesale IDD?

9 c) When would it be appropriate to remove the requirement on BT to provide indirect access?

Indirect access (IA) is an essential part of Carrier Pre-Selection (CPS) so that customers can select other operators on a call by-call basis. IA will therefore be needed as long as CPS is needed. Given that it is only the success of CPS in recent years that has reduced BT's dominance in the retail voice market and many WLR (Wholesale Line Rental) operators also depend on using CPS as part of their solution, an early withdrawal of IA/CPS might be seen as anti-competitive. Other solutions, such as cable and VoIP (Voice over Internet Protocol) may not provide sufficient wholesale competition. On the other hand, IA/CPS always will be, to a degree, an arbitrage opportunity and its economics may change as next generation networks (NGNs) roll-out. It should be sufficient for Ofcom to monitor the voice market and withdraw IA when there seems to be no reasonable demand for it.

9 d) How should PSTN-specific regulation evolve under NGNs? What should next generation CPS and WLR products look like?

The IEE suggests that if the decision is taken not to open up the interface between the MSAN and the call server, then this will limit future competitive options.

9 e) What are the prospects for increased competition for voice services provided using broadband access products (such as LLU and the evolution of DataStream)? What conditions and transitional arrangements would need to be in place to allow service providers to secure access on the basis of commercial terms rather than PSTN-specific regulated products?

The IEE suggests the key issue here is to ensure that Service Providers (SPs) can buy wholesale products that can support the higher quality ('QoS enabled') access needed for

voice services. Whether these become available on commercial terms depends on BT's behaviour in an area where they have market power.

9 f) How should Ofcom ensure competition in areas where alternative platforms were not in place?

Provided there is effective service competition, and not all costs are locked into the access platform, then Ofcom should identify the barriers to entry and how they might influence the height of these barriers.

9 g) When do you expect fixed-mobile substitution to result in a single economic market for voice call origination?

This is a gradual process which is already underway, but there is not yet a single economic market. The process is likely to be accelerated by products offering seamless mobility which may perhaps bill the customer without reference to the kind of network being used on a given call or part-call.

10. Do you agree with Ofcom's proposals for deregulation of business voice services?

11. How should regulation of narrowband Internet evolve as networks migrate to NGNs, and how will functional, low bandwidth Internet access be provided in future?

Provided there is always, at least, a basic level of data communication provided to each consumer, say akin to those provided today on dial-up services, then this should not be a matter for regulatory debate.

12. How can the arrangements for access and interconnection to next generation networks best address our proposed regulatory principles?

Ofcom should always bear in mind the principle of technology neutrality. But NGNs will change the markets for access and interconnection. Ofcom should take a leadership role in facilitating the debate on new arrangements through the NICC (Network Interoperability Consultative Committee) and other fora focusing on topology, commercial issues, processes etc. It would be inappropriate to let NGN policy be set by a series of disputes where 'after the event' the regulator is obliging operators e.g. BT, to retrospectively change the system architecture.

13. What should Ofcom's regulatory approach be to next generation access networks?

13 a) In what circumstances should Ofcom forbear from regulating next generation access?

13 b) How important is it that the investment be made contestable; is this achievable?

13 c) How should Ofcom regulate next generation access if market power were to emerge in this market?

13 d) How might structural options help to eliminate the problems of monopoly access assets being owned by vertically integrated operators?

This is potentially the most important area that Ofcom needs to consider if it is to promote an environment in which new access networks are likely to be deployed. On the one hand, BT will not invest in such a risky area if there aren't appropriate rewards allowed. But on the other, contestability is challenging because of the high 'civil works' costs involved in deploying fibre access. Some commentators have suggested that local authorities or public/private-funded bodies should build the duct network and allow all networks to use it. Such a role is possible, but would raise the difficult issue of whether BT would be forced to use such duct when it already has an extensive duct network of its own. Without that, such duct investment might be unviable. Duct sharing itself is difficult as Oftel recognized in the past. So a potential solution is to require BT to provide dark fibre where available and install fibre on request where it isn't. Pricing of such services should reflect the higher risks involved, but risk-sharing approaches (joint fibre deployment) might be considered.

Ofcom refers to the possibility of market power ‘emerging’ in this market, but arguably such market power already exists. BT’s ownership of its duct network, provided for its dominant role in telephony, and to support the Universal Service Obligation, gives it a major advantage compared to anyone else. Thus BT’s dominance would transfer from telephony into other fibre-delivered services.

14. What set of wholesale access services should BT be required to provide in order to promote competition in the business market?

15. What can be done to facilitate the migration of complex corporate services (e.g. VPNs) between suppliers?

It is generally accepted that this is a competitive market and one that has been revolutionized by IP technology. In such markets, different technical solutions will exist, especially at this formative stage in the market. This may lead to difficulties for customers in switching from one supplier to another. However, evidence shows that, after a time, market players gradually value technical interoperability once the benefit of technical differentiation has been played out. It therefore seems that no facilitation by Ofcom is needed in this area at present.

16. Are any alternative structures for call termination appropriate? Could evolution to IP interconnection introduce market mechanisms that make intrusive regulation unnecessary?

As long as Calling Party Pays persists, call termination is likely to remain a natural bottleneck. ‘Free peering’, while a feature of the commercial Internet, is unlikely to migrate to networks requiring end-to-end quality guarantees.

17. What approaches should Ofcom adopt to reducing search and switching costs in telecoms?

18. What should be the arrangements for funding the USO in future?

19. How could competition for the delivery of the USO be organised in future?

20. Should mobile technologies be used to help address the existing USO?

The IEE believes that the EU Directive already allows mobile technologies to be used to address the Universal Service Obligation. Further low power point-to-point wireless connections must represent a possible technology solution in the 21st century.

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