Intellect response to the Ofcom Consultation

"Next Generation Networks: further Consultation"
(Due Date: 12th August 2005)

Introduction

Intellect's membership includes companies that will supply NGNs and also companies that expect to deploy them.

Intellect has consulted widely amongst its membership in producing this response text, and a significant number of our members have provided specific inputs to it.

Intellect considers that this Ofcom consultation is timely, given that the deployment of NGN equipment is very rapidly becoming a reality. Intellect also considers therefore that a vital topic following this consultation will be that of working to finalise the 'process' arrangements involving Consult 21, the NICC and the NGNCo. Intellect would welcome a continuing involvement with Ofcom and the other organisations involved as all of these matters are moved forwards towards a final conclusion.

In particular it is imperative that agreements are rapidly reached on the resulting new interfaces through which operators will interconnect to enable the delivery of both legacy and new services. This urgency extends to determining those aspects of such interconnections that need to be formally regulated because of the economic bottlenecks or technical barriers-to-entry that are perpetuated or created by the deployment of NGNs.

Specifically, Intellect believes that the key issue to be addressed is Ofcom's proposed methodology for managing the regulatory issues surrounding the transition to NGNs, as summarised in Figure 1 on page 6 of the document. Intellect now presents its views on the viability of this process in the form of a narrative, then proceeds to answer the detailed consultation questions posed.

The NGN Process Proposal

It is Intellect's understanding that the proposed process is aimed at addressing all of the issues arising from the transition to NGNs, not merely those associated with the introduction of BT's 21st Century Network ('21CN'). Intellect believes that it is essential that the process can indeed address all such issues. Although the BT network will almost certainly be the most significant carrier class NGN deployment within the next few years, other operators have also recognised the potential of NGNs. Most are only at the planning stages of their own networks.

It would appear that the intention in the proposed NGN process is to restrict Consult 21, a body that has already been constituted by BT, to the specification of the requirements of those

Significant Market Power (SMP) products and other interfaces, the need for which specifically arises from the deployment of BT's 21CN. Intellect would wish to express some concerns about the independence of Consult 21 if it was to be given a more general remit. However, given that the consultation document explicitly states that NGNCo will 'produce a reference interconnection architecture setting out the manner in which NGNs are expected to interconnect with each other … and … provide an industry wide framework for the interconnection of all NGNs', Intellect assumes that this more general remit will be the responsibility of NGNCo.

Whether an SMP product is specified by Consult 21, or a more general interface is specified by this body or NGNCo, Intellect's understanding from the consultation document is that the intention is for a re-constituted Network Interoperability Consultative Committee (NICC) to define the technical standards required to realise such a product or interface. It is also our understanding that, once such technical standards are defined, it is NGNCo that will have the responsibility of planning and managing the transition to the use of such products and interfaces, also ensuring that consumers are fully aware as to what is happening. However, such responsibility will not extend to the management of the deployment by BT or by any other communications provider of its own NGN.

Intellect would have liked to have seen more detail as to the responsibilities of Consult 21, NGNCo and NICC, and the relationships between them, to be confident that the process can address all the regulatory issues that are likely to arise in the transition to the use of NGNs. Intellect trusts that the lack of such detail is not indicative of a wish to pass all of the responsibility for its definition to 'Industry'. Although Intellect would agree that Ofcom might be able to adopt a 'hands off' approach by giving 'Industry' the authority for the day-to-day operation of the proposed process once it has been defined, established and is up-and-running, Intellect would argue that Ofcom must retain direct 'hands-in' responsibility during these early phases. Even if a 'hands-off' approach can subsequently be adopted, the overall responsibility for the continuing effectiveness of the process *must* also remain with Ofcom, as it is the means by which a number of the UK Regulator's statutory responsibilities will be discharged.

Given that they will be part of a statutory process, it is important that the work of Consult 21, NGNCo and NICC be undertaken in an open and transparent manner, with well defined criteria for membership and with clear working procedures covering such matters as Intellectual Property Rights and Copyright, also the selection of chairpersons. Subject to fulfilling appropriate membership criteria, no stakeholder should face barriers to participation, such as a requirement to pay membership fees. Ofcom must therefore ensure that all three bodies have non-fee'd sources of funds to engage appropriate secretariat support and also to commission external experts to undertake any necessary activities that go beyond what can reasonably be expected of its members. As independent bodies, NICC and NGNCo will almost certainly also need to be provided with some form of indemnity against potential litigation.

Ofcom has indicated in its consultation document that its desire to re-constitute NICC as an independent body does not mean that it will withdraw from its current engagement with that body. Ofcom has also stated that it expects to be part of NGNCo. The work of both of these bodies should therefore reflect a close collaboration between the Regulator, communications providers, equipment manufacturers and solution providers. Consult 21 is currently only the

domain of BT and its wholesale customers. If, as suggested, it becomes part of the proposed NGN process, the plan is for its work to be backed-up by an Ofcom dispute resolution process. Provided the operation of Consult 21 is sufficiently transparent, the lack of representation by, for example, equipment manufacturers and solution providers may not prove to be an issue. Nevertheless, Intellect feels that a widening of the criteria for membership of Consult 21 is worthy of debate, particularly as some smaller communications providers may wish to have their interests on this body represented by their solution provider partners. The involvement of solution providers would also help ensure that the requirements generated by Consult 21 are capable of cost effective implementations on the requisite timescales. Intellect also believes that there should be a more general debate on the membership criteria for all three bodies to ensure that they have the necessary membership to also represent the interests of application developers and consumers, and to address issues of international interconnection and collaboration in service delivery.

Finally, Intellect considers the elements of the proposed process that are intended to address the disputes that will inevitably arise. Intellect concurs that the appointment of an adjudicator may well provide a preferable alternative to Ofcom's formal powers in resolving those operational implementation disputes that relate to the interpretation of the positions reached by the three bodies driving the NGN process. *However,* Intellect believes that Ofcom itself must retain responsibility for resolving those disputes that relate to the working methods of these bodies and the details of their interactions in arriving at such positions. The rationale for this proposed arrangement, as argued above, is that the overall responsibility for the proposed NGN process *must* remain with Ofcom, as it is the means by which a number of the Regulator's statutory responsibilities will be discharged. Ofcom must also be the arbiter in those disputes that arise in relation to whether or not there is an SMP requirement for a particular product and whether the final technical specification of such a product is fit for purpose.

Responses to the Consultation Questions

1. *Do you agree with Ofcom's proposed approach for the charges of narrowband voice SMP products provided over next generation interconnects?*

Intellect believes that considerations relating to the charges for SMP products are a matter for the service providers who will be directly impacted by them.

2. *Do you agree with the overall approach that there needs to be continuity for existing SMP products, but that it would not appropriate to continue them indefinitely?*

Intellect agrees. The continued imposition of such legacy requirements on a NGN operator might entail costly emulations. Too long a period of such imposition would compromise the operator's ability to realise an adequate return on the investment in the NGN network, and would probably slow down the introduction of such networks to the economic and social disadvantage of the UK. However, to drop such requirements too soon would be unfair to those operators who have made

significant investments on the assumption of a continuation in the deployment of today's network technologies and architectures.

3. *Do you agree with the general criteria Ofcom has proposed for the withdrawal of legacy SMP products after an interim period?*

Intellect agrees, but also believes it is important that the views of the end users are taken into account when determining the acceptability or otherwise of withdrawing a particular product.

4. *Which network intelligence capabilities are likely to be associated with the underlying network where BT has SMP and cannot be independently provided by alternative providers, and why?*

Intellect broadly agrees with Ofcom's assessment of network intelligence as laid out in Appendix G to the consultation document. NGN intelligence will undergo significant development over the next few years, therefore it is probably too early to be definitive about where this may or may not be associated with the underlying network where BT has SMP. A case-by-case analysis will be required, based on a detailed analysis of the functionality being offered and the prospect for competitive provision of such. Nevertheless, Intellect believes that the imminent deployment of NGNs provides an excellent opportunity to agree improved interfaces to enable operators to interconnect and co-operate in the delivery of services. In particular, such deployment opens up the possibility of defining a much reduced set of generic data interfaces which, when coupled with access to inter-module and signalling protocols, also to appropriate Application Programming Interfaces (APIs) to control the intelligence of NGNs, will enable a service-independent approach to regulation to be developed. Such an approach is likely to be a necessity since the architecture of NGNs not only allows the provision of today's voice and data services and their obvious multimedia generalisations, but also an unlimited range of new services. A service-specific approach to the regulation of such networks is likely therefore to eventually become unwieldy.

Intellect believes that agreement on some form of generic IP access, ideally with third-party control over a range of QoS parameters including the additional aspects of timing and synchronisation, will be a central requirement. Access to other forms of intelligence, such as those providing the 'location', 'presence status' and 'connection characteristics' of end users, will also increasingly become central to service provision. The matter of whether or not one operator should have regulated access to another's knowledge in these area is, of course, dependent on whether or not there exists an economic or technical barrier to entry.

In addition to a generic IP interface with API control of intelligence, the need for Layer 2 data link services and even Layer 1 transmission services will, however, persist with NGNs. An operator seeking to exploit another's NGN network may find its ability to offer services compromised by the latter's IP architecture. Stringent delay requirements, for example, could dictate data link or transmission layer connectivity. Even when mature QoS-controlled IP

connectivity becomes available and with tightly controlled delay and loss characteristics, data link layer connectivity may remain as a pre-requisite for the most secure of services.

5. *What are your views of the practical implications of applying Equivalence of Input to NGNs (eg in relation to MSAN interconnection, end-to-end quality of service, and depth of network hooks)?*

Where a need is established for an SMP product, it is important that its availability on anything other than an Equivalence of Input (EoI) basis should be the exception rather than the rule, subject to it being reasonably practicable to provide Network Access on such a basis.

The definition of 'network hooks' is still fluid and will be subject to much development effort and industry debate. In this context, Intellect does not believe that it is possible to be specific about the appropriate depth of network hooks at this stage, since the concept has not yet been fully defined. Certainly there are very few examples of what a network hook might look like. Intellect believes that the industry will need to debate the area of 'network hooks' in order to establish where access may be required (based on a finding of SMP), hence what the implications will be for EoI. A key issue in this debate will be the establishment of the deepest available APIs that do not compromise fundamental aspects of the network being accessed, such as that of security. This is because the depth of hooks may well significantly affect the ability of a service provider accessing a customer through another's network to provide equivalent services without additional complexity and consequent extra cost..

6. Do you agree with the issues Ofcom has identified that need to be addressed by all communication providers as they move to NGNs and what others are there?

Intellect agrees with the issues that Ofcom has identified but notes that the majority are expressed in terms of 'voice calls'.

Because the architecture of an NGN is fundamentally different from that of any of today's networks, the issue of economic bottlenecks must be reconsidered from first principles. It will not be sufficient simply to seek to ascertain whether or not those bottlenecks consequential on today's architectures will endure or disappear. NGNs are also the enablers of convergence, in that they provide services and content via computing servers linked to common cores independent of the access method that is used. Whether such access shall be fixed, mobile or via hot-spots, it is simply the means by which end users connect to core networks and thereby access such servers and communicate with each other. The development of NGNs may therefore fundamentally change the market segmentation appropriate to the determination of SMP.

If an NGN is being deployed as a replacement for an existing network, issues will arise with respect to changes in the location and topology of interconnection points, not least because NGNs have far less geographic dependence than do legacy networks.

Intellect notes that, in order to protect the integrity of the networks on either side of a QoS controlled IP interface of the type discussed in our response to Question 4, some form of Border Gateway functionality will be needed which incorporates an appropriate 'firewall' capability.

In order to maximise the cost effectiveness of interoperability, it will be important that the proposed NGN process endeavours to ensure that protocols defined by recognised standards bodies are specified for all new interfaces and that agreement is reached on their availability in suitably 'unbundled' forms. The development of appropriate transition plans will be a key consideration for NGNs deployed ahead of the publication of such standards.

A final factor that must be addressed in developing regulatory policy in respect of NGNs is that such networks enable end users to connect to servers that are located anywhere, geographically. Such servers can also be in portions of a network owned either by a carrier or by an enterprise. Indeed, the distinction between carrier and enterprise solutions will become less of an issue of role, instead more a question of who owns which network component and where it is located. Regardless of who provides a service, the server hosting it can be located in the same or another country. It is imperative that any new regulatory policies fully recognise such freedoms in the 'who does what' and 'where' that is inherent in NGN architectures.

7. Do you agree with the policy principles Ofcom has identified for consumer protection during the move to NGNs?

Intellect broadly agrees. However, we also believe it would be prudent to have a more general debate about the membership criteria for the three bodies involved in this process. Among other things this would be to ensure that these bodies will be able to adequately reflect the interest of consumers.

8. Do you agree with the overall processes for developing 21CN obligatory products?

Intellect agrees, subject to the reservations expressed in our above narrative on the NGN process proposal.

9. Do you believe that there is a need to co-ordinate and steer cross industry NGN issues which is not met by existing bodies and process?

There are currently two bodies addressing NGN issues, the NICC and Consult 21. The NICC works as an industry consensus group addressing specifications and technical issues associated with network competition. NICC also provides advice in respect of the harmonisation of interconnection arrangements. Consult 21 is a BT initiative established to facilitate consultations

with its wholesale customers on the implications of the introduction of its 21CN. Consequently, the membership is restricted to those customers. Although these bodies could be exploited within a process for managing the issues surrounding the transition to NGNs, they currently do not perform all of the functions required by such a process.

10. Do you agree that there is a need to co-ordinate the planning and implementation of NGNs on an industry wide basis?

Intellect agrees that there is such a need.

11. Is there a need for a process to address the wider consumer protection issues arising from the move to NGNs?

Intellect believes that there is such a need. A defining characteristic of NGNs is that they are based around cores that carry Internet Protocol (IP) packets and provide connectivity that is independent of service. A key consumer issue surrounding the deployment of NGNs is that, although the major service providers will deploy their own distinct cores with carrier class capabilities, others will exploit the Internet itself to provide core functionality. As a result, similar services will be provided by NGNs having wildly differing qualities, grades of service and security attributes. It is therefore important that processes are in place to ensure that consumers fully appreciate the characteristics of the numerous offerings that will become available to them. Only then will they be able to make informed trade-offs between the costs of particular services and their capabilities.

12. Has Ofcom identified all the correct industry processes that will be needed to deal with move to NGNs?

Intellect believes that Ofcom has identified the key issues that must be addressed by the proposed NGN Process.

13. Do you agree that it appropriate for Consult 21 to continue to take responsibility for developing detail of SMP product migration and (the) development of new products?

Intellect agrees that Consult 21 is the right body to drive the migration of existing SMP products to NGN implementations. Intellect also has no issue with Consult 21 being responsible for the specification of the requirements of new SMP products and interfaces, provided the need for these specifically arises from the deployment of BT's 21CN. Intellect would have some concerns about the independence of Consult 21 if was to be given a more general remit, but this would appear to lie with NGNCo in the current proposal.

14. Do you agree that Consult 21 combined with bi-lateral commercial negotiation and backed-up by Ofcom dispute resolution is the best approach to the agreeing the commercial aspects of new and migrated products?

Such an approach would appear to be reasonable.

15. Do (you) agree that NICC should continue to be responsible for standardisation of NGN interconnect, but needs to be re-constituted as an independent industry owned body?

Intellect agrees that the NICC should continue to be responsible for the standardisation of NGN interconnect. However, there are a number of issues that must be addressed if it is to be re-constituted as an independent body. Given that it will be part of a process for discharging Ofcom's statutory responsibilities, its work must be undertaken in an open and transparent manner with well defined criteria for membership, clear working procedures covering such matters as Intellectual Property Rights and Copyright, also the selection of its chairperson. Intellect strongly believes that, subject to fulfilling such membership criteria, no stakeholder should face barriers to participation in the work of the NICC such as a requirement to pay a membership fee. Ofcom must therefore ensure that the NICC is adequately funded by other means so as to be able to engage appropriate secretariat support and when necessary commission external experts to undertake any necessary activities that go beyond what can reasonably be expected of its members. As an independent body it will almost certainly also need to be provided with some form of indemnity to potential litigation.

16. What are your views on the establishment of a new multi-lateral industry group to address NGN issues, its terms of reference and governance arrangements?

Intellect would have liked to have seen more detail as to the responsibilities of NGNCo. We feel that its exact role as outlined in the Consultation document is unclear beyond the explicit statement that it will 'produce a reference interconnection architecture, setting out the manner in which NGNs are expected to interconnect with each other … and … provide an industry wide framework for the interconnection of all NGNs'. Intellect assumes that its remit includes the specification of the requirements for the types of interfaces discussed in our answer to Question 4 and that such specifications would then be passed to the NICC to agree on the appropriate technical standards through which they should be realised. If this interpretation is correct, some of these interfaces will almost certainly be the means of implementing the SMP products to be specified by Consult 21. Greater clarity is therefore required as to the division of such responsibilities between NGNCo and Consult 21. Intellect notes that much work on 'interconnect' in Consult21 has thus far been based on technical standards work from the NICC. That is, the relationship between the NICC and Consult 21 has been more of a two way process.

17. What are your views on the establishment of a NGN operational dispute adjudicator, its terms of reference and governance arrangements?

Intellect concurs that the appointment of an adjudicator for the operational aspects of the NGN transition or implementation may well provide a preferable alternative to Ofcom's formal powers in resolving those disputes that relate to the interpretation of the positions reached by the three bodies driving the NGN process. *However,* Intellect believes that that Ofcom itself must retain the ultimate responsibility for resolving those disputes that relate to the working methods of these bodies and the details of their interactions in arriving at such positions. Ofcom must also be the arbiter in those disputes that arise in relation to whether or not there is an SMP requirement for a particular product and whether the final technical specification of such a product is fit for purpose.

18. Would your organisation be prepared to sign-up to such an adjudication scheme and abide by the adjudicator's decisions?

This is a matter for the service providers that would be asked to participate in such a scheme.

Conclusion

Intellect believes that the deployment of Next Generation Networks (NGNs) represents a tipping point in the way communications services will very soon be delivered. NGNs offer the potential of substantial cost savings to operators. They also enable the delivery of innovative new services, with the potential for far greater control and personalisation by end users. The deployment of NGNs also provides an excellent opportunity to agree improved interfaces through which operators interconnect with each other. The imperative is that such agreements are reached with the utmost urgency, since NGNs are otherwise unlikely to be built with ready access to the interfaces necessary for effective regulation, potentially leading to significant problems downstream. This further consultation on Next Generation Networks is therefore very timely. Intellect has been pleased to be able to make use of the extensive knowledge and some visibility of the draft responses of some of its national and also multinational members re the essential details of such networks, in compiling this response. It goes without saying that several of our members also plan to submit a response to this consultation in their own right.

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