

## **Next Generation Networks: Responding to recent developments to protect consumers, promote effective competition and secure efficient investment**

Vodafone appreciates the opportunity to respond to the above consultation. We have chosen to confine our answers to the questions that we consider are most relevant to our business.

### ***Question 3: What additional technical standardisation work is required to support NGN deployment?***

Vodafone UK believes that most areas of standardisation in NGN are already being addressed through the global standards bodies. There are only limited exceptions when local standardisation work is required e.g. network interoperability.

### ***Question 4: What policy positions do you believe Ofcom ought to adopt in relation to interconnection between IP and TDM networks?***

Vodafone does not support or reciprocal charging or 'bill and keep' arrangements for IP interconnection between mobile and fixed networks (see also our response to Ofcom's recent consultation on wholesale mobile termination charges).

At present most IP interconnection only occurs on a "best-efforts" basis for generic packet data without any quality of service (QoS) guarantees required for individual services. Central to existing IP interconnection for data services is the concept of "value" that each network brings to an interconnection arrangement. In this context value essentially reflects the benefit that other networks will gain from interconnecting with the network in question.

IP interconnection for voice services (or more generally any service requiring QoS) will require new arrangements. Firstly, specific standards are required to guarantee the QoS necessary to support the service, and the specific attributes normally expected of the service (e.g. CLI for voice calls). Secondly, specific services such as voice (or more generally services where the originator of the session can be identified and there are strict QoS requirements on terminating traffic to complete that session) have very specific commercial arrangements to ensure that the originator of the session bears the cost, and the transit or terminating networks are paid to provide the QoS throughout the session.<sup>1</sup> Voice calls can often travel across multiple networks before they are delivered. Failure to ensure adequate QoS across any one of these connections will degrade the service, irrespective of the QoS provided by the other networks. Each and every element in chain must therefore provide (and be paid or otherwise incentivised to provide) an appropriate network service. Best efforts IP does not ensure this, whilst cascade billing arrangements have generally ensured that each network provider receives appropriate compensation for the costs caused by the call. Usage based interconnection rates used for voice calls currently

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<sup>1</sup> Pricing interconnection in this way provides the correct incentives to maximise economic efficiency since it will lead to retail pricing structures that best reflect the underlying resource costs of initiating sessions.

fulfil this role in existing voice interconnection, and the move to IP interconnection will not per se alter this.

***Question 10: Would it be appropriate to agree a common set of terminal equipment compatibility tests? What would be the most appropriate forum to develop these tests?***

Vodafone supports a common set of terminal compatibility tests for a limited set of 'vanilla' features e.g. CLI and call waiting; this should not constrain operators from developing their own differentiated features e.g. voice IVR access.

NICC may be the most appropriate forum to develop these tests but this, or any other body, should be confined to policing a limited feature set and its remit should not have the effect of hampering the development of new services.

***Question 11: What other steps could be taken to help manufacturers ensure terminal equipment is compatible with the QoS parameters of NGNs?***

None. Vodafone believes that manufacturers are well versed in the appropriate QoS methods and technologies that operators adopt in their NGN. It is in their interests to participate in the relevant standards bodies and ensure their platforms conform to the latest standards QoS standards.

***Question 13: Do you think there is risk of terminal equipment incompatibility that warrants further SIP UNI standardisation? How should this be progressed***

We think that there is a low risk of equipment incompatibility. Vodafone believes that most terminal manufacturers already understand the basic capabilities and service set that the UNI must support and terminal equipment already adheres to these capabilities. We expect manufacturers to embrace evolutions of the standard.

***Question 15: Will a slower transition from TDM to NGN networks pose a risk to voice quality of service? How should such risks be addressed?***

Vodafone has no evidence that the pace of the transition from TDM to NGN networks is adversely affecting the current level of voice quality of service: TDM to TDM appears to be no better than IP to TDM.