

NGN and the Internet

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I. Introduction

The phrase “Next Generation Network” (NGN) has both a generic and specific meaning. Generically, it is used to refer to “some future version of networking”, while specifically it refers to work described in ITU-T Recommendation Y.2001. When not used precisely, an impression is built that “the NGN” is intended to supplant “the Internet”. The Internet Society is pleased to offer the following information to provide an overview of the networking terminology and a basis for clearly understanding the evolution and coexistence of these important technologies.

II. The ITU-T NGN

According to ITU-T Recommendation Y.2001, Next Generation Network (NGN) is a packet-based network that separates services from underlying transport. This allows providers to develop and deploy new services without changing the underlying network hardware, in ways that are not possible with traditional circuit-switched networks. NGN-based networks provide Voice over IP (VoIP) on the packet-based network, rather than maintaining a separate voice network switching infrastructure.

NGN specifications are being defined in ITU-T Study Group 13, and are focusing on using IP networks with IP-based standards, MPLS for Quality of Service (QoS) signaling, and Session Initiation Protocol (SIP) for media services.

III. The Internet Technology

A focused definition of the Internet is that it is a global network of networks, consisting of millions of participating commercial, academic, public, and government networks using packet-switching technology based on the Internet Protocol (IP). As a network, it provides mechanisms for routing packets from one

endpoint to another endpoint anywhere in the global network. It is defined independently of the underlying transmission layer and the applications and services that are defined to use it.

Internet protocol specifications, including IP and MPLS, are developed and maintained by the Internet Engineering Task Force (IETF – <http://www.ietf.org>). The IETF continues to develop specifications for IP, packet transport, routing and Internet operations, in response to the engineering needs of the global Internet community.

IV. The Internet Experience

While the previous section defined the Internet in terms of packet-based networking technology, the most common experience of the Internet for users comes from the applications that are built to work on it, and the services built using those applications. These applications and services are developed in a number of ways – through open standards processes (such as SIP, within the IETF; HTML, within the W3C), through research activities (such as the original development of the World Wide Web (HTTP) at CERN), or even private industries (such as Facebook). A crucial feature of the Internet that has allowed it to support and promote innovation beyond the scope of the imagination of any single group of developers is its “end to end” principle. This is explained in more detail in RFC1958 and RFC3724. This principle guides the Internet’s role as a carrier of packets, not a governor of activities.

V. The NGN and the Internet

What this means is that no choice is required between the Internet and the NGN. As noted in the 2005 joint workshop¹, the IETF continues to develop key Internet protocol specifications and related technologies, in ways that will support an unlimited variety of potential applications. The NGN represents one, but not the only, set of applications and services that can be supported.

VI. The Internet Society

The Internet Society (ISOC) is an independent international nonprofit organization with headquarters in Geneva, Switzerland and Reston, Virginia, USA. ISOC acts as a global clearinghouse for technically-sound, unbiased information about the Internet, as a provider of education, and also as a facilitator and coordinator of Internet-related initiatives around the world. It provides the organizational home for the IETF, IAB and IRTF.

ISOC was founded in 1992 to provide leadership in Internet related standards, education, and policy. It is supported by an active, global network of members who help promote and pursue the ISOC mission in all parts of the Internet community and all parts of the world. The Society has more than 80 organizational and more than 28,000 individual members in over 80 chapters who contribute to regionalizing the scope of ISOC technical, educational and policy initiatives.

¹ <http://www.itu.int/ITU-T/worksem/ngn/200505/presentations/report.pdf>

ISOC is a Sector Member of ITU-T (Standards) and ITU-D (Development) since 1995. The website is: <http://www.isoc.org>. Useful information about IPv6 can be found at: <http://www.isoc.org/educpillar/resources/ipv6.shtml>.