

Remarks by Vinton G. CERF

Thank you, Mr. Chairman, for the opportunity to speak, in part, on behalf the American Registry of Internet Numbers (ARIN), a member of the Number Resource Organization (NRO) whose constituent Regional Internet Registries (RIRs), working with the Internet Corporation for Assigned Names and Numbers (ICANN), have provided for the responsible expansion of the Internet through provision of Internet Address space to infrastructure providers and their users.

This meeting is all about the economic value of the Internet as a global infrastructure. Its utility depends on having address space available for expansion. If it were a telephone network, we would be saying that running out of telephone numbers is not an option. It is not a telephone system, but it is an infrastructure for harnessing the power of computing and communication as a platform for innovation. Its growth is the key to expanding its value. I wish to make five points this morning.

1. Implementation of IPv6 addressing in parallel with IPv4 must become national and global priorities if the value of the Internet is to continue to grow and be made accessible to everyone on the planet. *Any other course* will lead to a stagnant environment in which innovation will suffer and the positive network effects that have driven the utility of the Internet will cease. If there were no other conclusion coming from this high level meeting than the imperative to implement IPv6, then this meeting will have served the billions of futures users of the Internet well. *There is no other responsible course.*

In the United States, a Smart electrical Grid is taking shape. Similar programs are underway around the world. The resulting Internet of Things may result in a network that has billions more devices online than people. This, too, is another strong reason for adopting and implementing the IPv6 addressing system that provides 340 trillion trillion trillion addresses. This is a number that only parliaments and legislatures can truly appreciate!

2. An international program for measuring the uptake and performance of IPv6 is essential for tracking and highlighting progress in this vital effort to maintain and grow the utility of the Internet. The OECD is in a highly credible position to pursue this objective and I strongly urge that it becomes an organizational priority. The Measurement Laboratory (M-LAB) project has collected over 300 terabytes of openly accessible broadband data and represents one avenue towards accomplishing this goal.

3. We must collectively pay increased attention to Internet security through the implementation of Domain Names System Security Extensions (DNSSEC) and

Secure Inter-domain Routing using the Router Public Key Infrastructure (RPKI) system. We should collectively promote widespread use of strong cryptographic, 2-factor authentication. We must invest public and private resources in research and development leading to operating systems, browsers and network components that are resistant to viruses, worms, Trojan horses and all forms of denial of service attack. Open source contributions can accelerate the uptake, use, and continued evolution of these desirable capabilities. Freedom from harm must be one of the goals we pursue along with the other great freedoms found on the Internet.

I would like to make two additional personal observations:

4. The OECD and this meeting should encourage multi-lateral, multi-stakeholder discussions of legal frameworks that enhance and support electronic commerce. We should be making model agreements on the legal weight of digital signatures, and establishing best practices for the use of digital identifiers and implementation of digital identity (these are related but emphatically not identical). It is technically possible and fundamentally desirable to support both strongly authenticated but anonymous speech and, when needed, strongly authenticated digital identity. Without both of these tools, the principles of digital human rights cannot and will not be realized. We must have the right to speak and the right to hear *safely* in this networked environment.

We should pursue the development of forensic tools and methods and establish reciprocal agreements concerning harmful behaviors on the Internet, including provisions for the protection of intellectual property. It must be recognized, however, that traditional frameworks for such protection may work poorly in a globally digital and networked environment, triggering both a need for and an opportunity to convene legal and technical experts to explore a spectrum of alternatives for realizing the value of intellectual property rights.

5. Intermediaries facilitate access to and use of the Internet and its growing infrastructure. New business models have made it possible to provide access to enormous and growing computing and communication infrastructure at marginal and sometimes zero cost to users. Liability for the abuse of the Internet's assets should lie with the abusers and not with the implementers of its infrastructure. "Notice and take down" regimes are both effective and harness the eyes and ears of the billions of Internet's users. At the scale at which the Internet now operates, these regimes, together with other forensic methods, may be the only effective ways of detecting and curbing abuse.

There is much more to be said in aid of realizing the value of a growing Internet and I look forward to hearing from the other delegates participating in this important discussion. I appreciate the opportunity to make this intervention, Mr. Chairman, and yield to floor back to you.