nature

Internet governance: time for a reset

Online safety is crucial, but so are privacy and decentralization. Computer scientists who set the Internet's technical standards should be included in governance talks.

"Did you get the L?" "Did you get the O?" As science writers Katie Hafner and Matthew Lyon recount in their 1996 book on the birth of the Internet, *Where Wizards Stay Up Late*, it took a phone call on 29 October 1969 to confirm that the world's first Internet message had been received. The letters 'L-O-G-I-N' had been typed by researchers at the University of California, Los Angeles, and sent some 500 kilometres up the coast to colleagues at Stanford University.

Five years later, in May 1974, two more founding wizards cast their spell. Stanford computer scientist Vint Cerf and Bob Kahn, a researcher at the US Defense Advanced Research Projects Agency, published the software rules, known as protocols, that enable billions of devices all over the world to share data, images, sounds and video over a single Internet (V. G. Cerf and R. E. Kahn *IEEE Trans. Commun.* **22**, 637–648; 1974). Half a century on from that decisive moment, Cerf is among the many computer scientists to be concerned about where the Internet will go next.

Since the Internet's inception, its governance has been led by scientists and non-governmental organizations. Today, these bodies include standards organizations such as the Internet Engineering Task Force (IETF) and the World Wide Web Consortium (W3C). The IETF is responsible for maintaining and developing the protocols originally developed by Cerf and Kahn. The W3C, created by the web's founder, Tim Berners-Lee, maintains the specific protocols that mean, among other things, that web pages can appear on any appropriately Internet-enabled device.

But on 22 September, United Nations member states agreed a 16-page document called the Global Digital Compact (GDC). At its core, this document reflects the desire of the world's governments to take more responsibility for Internet governance. And many scientists are concerned.

United we stand

The compact has been under development for more than a year, but disagreements surfaced in July, when computer scientists including Cerf and Berners-Lee published an open letter saying that existing Internet standards bodies and the technical community have had only weak involvement in the drafting process.

This unnecessary rift needs to be closed urgently. The GDC has tasked one of the UN's established science bodies, the Commission on Science and Technology for Development in Geneva, Switzerland, to set up a working group to consider the future of Internet data governance. The group will report in two years' time. It must formally involve the current standards bodies if its recommendations are to be relevant to how the Internet is being used, while maintaining the best of what has made it so successful.

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Reaching an agreement will not be easy. The UN team is under pressure from member governments determined to get a stronger grip on the Internet so they can protect people – especially children – from harm, respond effectively to threats such as cybercrime and disinformation, and balance the benefits and risks posed by artificial intelligence.

That will inevitably necessitate some governmental involvement in technical standards. The UN and its science advisers need to ensure that this does not jeopardize the Internet's founding principles: that the world has just one Internet and that its operation is decentralized. These are both matters of wider concern. An Internet governance process that is led by nation states also runs the risk that insurmountable disagreements between countries will lead to individual national versions of the Internet. That is why a decentralized, researcher-led process has been so important, and why it needs to be maintained as far as possible.

The principle of a single, global Internet means that no one needs to ask any government for permission to connect their device to the system. Because of the way the underlying protocols work, the sender and receiver are the only people who need to know what information is being sent over the Internet – mirroring how the postal system works, at least in theory.

The final text of the GDC supports the principle of common standards by which information can be exchanged between all parts of the Internet. Its commitments are all framed in terms of the UN's Sustainable Development Goals, which all nations are signed up to – and which include protecting freedom of expression and privacy within international law. This is a good start. As the computer scientists say in their letter: "Government engagement in digital and Internet governance is needed to deal with many abuses of this global system but it is our common responsibility to uphold the bottom-up, collaborative and inclusive model of Internet governance that has served the world for the past half century."

According to the authors of *Where Wizards Stay Up Late*, it is not an accident that Internet standards borrowed the word 'protocol' from international diplomacy, where it is used to mean an agreement between parties – as in the 1997 Kyoto climate protocol. In that sense, it is fitting that governments are assuming more responsibility. But as with issues such as global climate policy, the technical-standards community needs to have an assigned place in discussions. When the UN's science commission starts its work, community members need to be there to share their depth of knowledge and to help guard against the risk of 'splinternets'. The Internet tent is big enough to accommodate all those who need to be inside – not least those who helped to build it in the first place.