

Why Operators Must Simplify Network Configuration

By Tim Young

The communications industry is awash with standards development organizations (SDOs), from industry trade associations to regulatory agencies. As this month's issue is devoted to standards and frameworks, we thought we'd take some time to speak to one of the oldest and most globally connected SDOs: the ITU-T. As the standards arm of the International Telecommunication Union, a United Nations agency composed of hundreds of member nations, private-sector firms, and academic entities, the ITU-T is in a special position to observe global communications growth and make recommendations on policy and best practices that can reverberate around the world. We spoke to Malcolm Johnson, the head of the ITU-T, about the present and future of communications standards, and about the ITU-T's role in shaping telecom growth worldwide.

Tim Young, Editor-in-Chief, Pipeline: Why are standards such a crucial component of telecommunications?

Malcolm Johnson, Director of the ITU Telecommunication Standardization Sector (ITU-T): The growth in ICTs over recent years is largely thanks to international standards. It enables all modern communication despite huge variety in devices, connection technologies and connection speeds.

For a telephone call we start with the numbering system, the codec used to compress your voice, the signaling system used to initiate and terminate calls through to the fiber-optic systems, and repeaters used to carry that voice across continents, all standardized in ITU. The Internet would not have developed without



ITU broadband standards.

All ICTs rely to an enormous extent on common technical languages, protocols and frameworks to enable communications between the networks and devices of different vendors, countries and continents.

ITU's primary function at its founding in 1865 was to facilitate cross-border communications between countries using different telegraph systems. Still today we need systems in different countries to be "speaking the same language." Without standards agreed

[to] in ITU-T, you couldn't make a telephone call from one side of the world to another, and the Internet would grind to a halt.

Pipeline: How are standards impacted by globalization?

Johnson: ICTs are global by nature—they don't respect boundaries. International standards are necessary to provide the interoperability to connect all countries in the world.

Standardization is a complex business, and it is getting more complex by the day.

Globalization requires global standards, and a global standards body like ITU clearly has an increasing role to play. International standards are essential for international communications and global trade. International standards avoid costly market battles over preferred technologies. For companies from



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emerging markets, they create a level playing field, which provides access to world markets. They are an essential aid to developing countries in building their infrastructure and encouraging economic development. Through economies of scale they can reduce costs for all: manufacturers, operators and consumers.

ITU fulfills a critical role as the UN-specialized agency for information and communication technology (ICT) in that it serves a global membership of 193 member states and over 700 private-sector entities, academic institutions, civil society and other governmental and nongovernmental organizations. This strong public-private partnership is the strength of ITU; it ensures all interests are included in a transparent and clearly defined process of reaching consensus on the standards needed to meet the requirements of users in both the developed and developing worlds.

Pipeline: What enforcement power does the ITU-T have to ensure standards compliance? Or are the ITU-T standards self-enforcing?

Johnson: Our standards are voluntary: that is why they are called “recommendations.” However, it is possible for a member state to decide to enshrine them in its national legislation.

Pipeline: How have ITU-T standards been deployed or applied, and what problem did they help to solve?

Johnson: If I were to pick one example, it may be that of modems, which gave most people their first taste of what a fully connected world would be. Without globally agreed standards providing interoperability, it could be argued that the development of the Internet would have been much slower.

ITU-T’s Study Group 15 was responsible for those standards and is today still responsible for the transport and access technologies that underpin all ICTs. It standardizes the technical frameworks for global fiber-optic networks and access technologies such as xDSL, which is a dominant broadband technology. Such is the importance of this group’s work that its recent meeting in Geneva attracted well over 300 representatives of governments, businesses and research institutes from 48 countries.

Pipeline: Are there specific industry segments that are particularly active in the growth and development of standards at the moment?

Johnson: Standards are demanded by all segments of the ICT industry; to provide the common platforms needed for young markets to find their feet, or to ensure highly developed segments, remains at the cutting edge of technological progress.

An important standardization question today, with ICT

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ingrained in the operations of all other industry sectors, is how we will most effectively include vertical-market players in the ICT standardization process.

Innovations such as e-health, e-learning, Intelligent Transport Systems (ITS), mobile money, and smart grid will demand standards developed by the ICT industry in close collaboration with the relevant vertical sector. For example, for the successful standardization of ITS we need the car manufacturing industry; for mobile money we need the banking sector.

We are having some success ...For example, BMW hosted a recent meeting of our Collaboration on Intelligent Transport Systems, Bank of America is contributing to our work on identity management, EDF is working with us on smart-grid technology, and Continua Health Alliance on e-health. But it is clear that we will have to strengthen mechanisms for vertical sectors, ICT organizations and standards bodies to coordinate more effectively.

Pipeline: How do standardization plans take into account the different needs of different geographic areas, given disparities in infrastructure, income, GDP, and so on?

Johnson: ITU-T is engaged in efforts to “bridge the standardization gap,” taking actions to increase developing-nation participation in international standardization work. This initiative ensures all nations’ standardization needs are taken into account. Additionally, the standards-development and standards-implementation skills learnt through participation in ITU-T’s work are of key value to network operators and regulators of the developing world. To narrow the gap ITU-T offers reduced membership fees and fellowships to organizations from certain developing countries, and provides online “remote participation” for those unable to attend our meetings in Geneva.

Equally important is the task of bringing developing-world innovations to the attention of international standards developers. We have established an ITU-T Focus Group on this topic named “Bridging the Gap: From Innovation to Standards,” which will investigate the issue and deliver input to the standardization work conducted by ITU-T Study Groups. The group is open

to all interested parties, and participation is free of charge.

Pipeline: With many other organizations developing standards, globally and regionally, what keeps the ITU-T relevant?

Johnson: ITU-T's international standards reconcile regional and national standards, fostering global consensus on the common protocols, frameworks and codecs essential to global communications. It is important that all regional and national standards bodies cooperate with ITU in such a way that we avoid divergent regional solutions that would fragment the international networks and the Internet.

ITU-T develops international standards, ones that address international, multi-stakeholder questions of immense importance to the public interest. When our global membership comes to agree on a standard, it represents the global consensus of governments, regulators and a wide variety of private-sector ICT players, including network operators, service providers, broadcasters, and manufacturers of all forms of network equipment and user devices.

Alongside our commitment to consensus-based agreements, our inclusive, multi-stakeholder approach is what makes us unique. An ITU-T recommendation is as international, open and nondiscriminatory as a standard could possibly be, and the ITU-T seal on a standard is thus a respected, time-honored symbol of global relevance and applicability.

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