and use of the right tools, peers can get much of the online governance job done together. This ordering may be as simple as configuring Eudora e-mail clients more effectively, choosing with greater care ISPs based on their service offerings, or building forms of greater accountability into peer-to-peer networks through Creative Commons licenses and similar, nontraditional governance approaches.

The point is neither that those representing developing countries ought to ignore the WSIS process, nor that no form of government involvement in Internet-related affairs is ever warranted. Governments in developing countries can and should build enforcement capacity, as well as strong bridges with law enforcement officials in other parts of the world, to crack down on the worst crimes that occur online. But there are also great benefits to people in developing countries in relying on the peer production of governance to reduce the impact of certain problems—like spam, identity theft, and certain security issues—and to take advantage of the private ordering that can stem from increased trust-based communications. It would be a mistake to give up on localized decision making on the Net just as peer production of governance is emerging as a feasible alternative. ∎

Universal Access and the Rural Challenge

Pierre Guislain

The exclusion of part of the world's population from access to information and communication technologies (ICTs) was rightfully a major concern at the World Summit on the Information Society (WSIS) held in Geneva in December 2003. By the time world leaders reconvene in Tunis in November 2005, countries are expected to have adopted and started implementing strategies to bridge what is often called the domestic digital divide, which separates the urban classes who have access to ICTs from the rural and poor who do not.

Access to ICTs is defined in different ways, including geographic proximity, affordability, content relevance, and people's capacity to effectively use technology. Fundamentally, however, access depends on information and communication infrastructure. The goal is to use the terms of the WSIS Plan of Action, access that is "universal, sustainable, ubiquitous, and affordable."

The universal access challenge may not be as big as some may think. According to ITU data for 2002, over half the world's households (more precisely 57%) already have fixed-line telephone service. The mobile picture is better still, with mobile phone signal available to over 80% of the world's population, exceeding 60% even in low-income countries. Extending access to universal levels will require servicing the most hard-to-reach in low-income countries, the majority of whom live in rural areas.

Creating an environment that encourages private firms to provide service is the first and most important step in expanding access. This means abolishing barriers to new entry, fostering competition, and establishing a level playing field for all players to reduce costs and enable new solutions for rural and remote areas. Currently about half of low-income countries have opened their mobile telephony markets to full competition; but only 15% have done so for their fixed-line local loop. This represents a considerable lost opportunity. To illustrate the potential of effective competition, consider Morocco. The Moroccan mobile market had 116,000 subscribers in 1998 when it was opened to competition. By 2002, the number of subscribers had exploded to 6.2 million, representing a year-on-year growth rate of

170%, with telecommunications coverage reaching about 95% of the population.

While a pro-competitive regulatory environment is a prerequisite, it is often not sufficient to offer universal access. The high cost of reaching certain rural areas, where customers are widely dispersed and terrain often inhospitable, is compounded by the fact that rural populations tend to be less well off than their urban counterparts. Where reaching these markets is deemed economically, politically, or socially desirable, governments may have to intervene to offset some of the costs of making the service commercially viable.

In developed parts of the world, rural access was mostly implemented during the telecommunications monopoly era through internal cross-subsidies. Telecommunications firms drew on money from more profitable services or localities to subsidize service provision to high-cost rural areas. In today's competitive markets, such cross-subsidization is no longer an option, as numerous firms compete with the incumbent to offer the services from which subsidies were previously drawn.

Some of the new universal access schemes align the pricing of telecommunications services better with the true cost of provision: users are charged more for calling a high-cost rural area than a lower-cost urban area, with a higher portion of the call revenue going to the provider with the higher costs (referred to as asymmetric interconnection). A common alternative entails establishment of a universal access fund to subsidize the cost of rural access, financed either directly from the government budget or from mandatory contributions by telecommunications operators (often between 1–2% of sector revenue).

How such funds are used for rural access varies. Usually they subsidize the difference between the cost of service provision to rural areas and the related revenue generated by the firm with a universal service obligation. Chile pioneered an innovative approach in the early 1990s, requiring telecommunications firms that were interested in providing rural access to bid competitively for a government subsidy. The firm requesting the lowest subsidy to meet the tender requirements (such as the provision of public pay phones within a specified distance from all households in a certain area) won the bid. In this way, Chile reached the final 15% of its unserved market, and near-universal coverage. This required

subsidies of only USD $22 million, or 0.3% of the telecommunications sector's revenue over the period. A similar targeted and competitive subsidy approach has since been introduced in many other countries from Nepal to Uganda.

Between now and the second phase of WSIS (Tunis, November 2005), the global community should accelerate its drive toward expanded ICT access. Universal access programs make sense only in the wake of telecommunication sector reforms that place responsibility for service provision on the private sector, and encourage new entry and competition. Universal access programs should be used to narrow the gap between the market and development needs, not to substitute for the market nor to compensate for regulatory distortions. An effective pro-competitive regulatory framework must be in place before a universal access program, such as competitive bidding for targeted subsidies, can be launched and ultimately succeed. This requires political commitment and willingness to abolish monopolies, exclusivities, or other forms of protection. The World Bank and other donors stand ready to assist countries that are willing to take that path. ∎