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From Arctic Village to Alice Springs: Rural Telecom Myths and Realities

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We went from house to house taking care of the sick ...
We had no phones ... but used the school's radio to report
[on] our patients.
There was no nonsense about confidentiality.
(Alaskan health aide quoted in Hudson and Pittman 1999)

INTRODUCTION

I was privileged to work with William Melody in northern Canada, Alaska, and Australia, and to collaborate with him on research and advocacy concerning communication needs of other rural and disadvantaged populations.⁴ I learned in working with him that if affordable access is to be available to all, telecom policies need to be based on realistic premises – not wishful thinking or simplistic generalisations. What follows is a summary of some of the myths that I believe must be challenged and the lessons that must be applied to extend affordable access to information and communication technologies and services in rural and developing regions.

DEBUNKING MYTHS

Myth: Rural Demand is Limited

Planners often assume that there will be little demand for telecom in rural areas. Such forecasts are typically based solely on the lower population densities, coupled with an assumption that all rural residents are likely to have lower incomes and, therefore, lower demand for telecom than urban dwellers. Rural population density, however, varies dramatically from one country to another and often within the borders of larger nations. Rural population densities in India, Indonesia and China enormously exceed those in Mongolia and Kazakhstan.

Of course, income is a useful predictor, but there may be many other factors that generate demand. Villagers in Rwanda and Burundi may be very poor, but the coffee and tea plantations they work need to communicate to order parts and supplies and arrange transport to foreign markets. Tuna fishermen in poor coastal communities in the Philippines use mobile phones to arrange cargo space on

aircraft to transport their catch to Tokyo. The service sector is also a major component of rural economies. Thus, in addition to commercial activities, there may be significant demand from government agencies and non-governmental organisations operating health care services, schools, other social services and development projects.

As rural and isolated peoples gain greater control of natural resources and demand more political autonomy, their needs for communication also increase. Organising by indigenous peoples to lodge land claims in Alaska, northern Canada, and Outback Australia, required extensive communication within these regions and with major urban power centres over many years. It is hard to imagine that land claims would have been settled without reliable communication to discuss strategy, lobby political and business leaders and build public awareness and support.

Myth: One Size Fits All

Another common assumption is that voice telephone service is all that rural and developing regions will ever need. While there may never be demand for a modem in every hut, demand for Internet access is likely to grow among government offices, small businesses, cooperatives, schools and health centres. Some providers preclude that option by installing wireless local loop technologies with very limited capacity such as digital European cordless telecommunications (DECT), which is used in some rural areas of South Africa. In more developed rural regions, telecommuters work from home and farmers want Internet access from their homes. Yet even in industrialised countries, ‘basic rural service’ is typically considered to be only voice telephone service, often with lower reliability – as well as at higher prices – than would be found in urban areas.

Myth: Rural Benchmarks Must be Lower

A persistent assumption is that ‘something is better than nothing’ for rural areas. However, a corollary of the above analysis is that it is no longer technically or economically justifiable to set rural benchmarks lower than urban benchmarks for access – both to basic telecom and to the Internet.

For example, the US Telecommunications Act of 1996 requires that rural services and prices are to be *reasonably comparable* to those in urban areas. While the United States and other industrialised countries must upgrade outdated wireline networks and analogue exchanges in rural areas, developing countries can leapfrog old technologies and install fully digital wireless networks. Thus, developing country regulators can adopt rural comparability standards to minimise service quality and pricing differences.

Myth: An Operator of Last Resort is the Best Means to Ensure Rural Access

Some countries require the dominant operator to act as an ‘operator of last resort’, with a Universal Service Obligation (USO) to provide rural service. Typically, the operator with the USO is entitled to a subsidy to provide the service based on its cost estimates. However, this policy can be flawed if there is no incentive for the operator with the USO to use the most appropriate technology and to operate it efficiently. It can also serve as a justification for protection from competition because the dominant operator has additional costs and obligations not required of new entrants. If subsidies are provided to serve high-cost areas, they should be made available to any operator willing to provide the service. Rather than designating a single operator of last resort, Chile established a development fund and implemented a competitive tender for subsidies for unserved areas. Surprisingly, 16 projects were awarded to bids of zero subsidy. As a result of preparing for the bidding process, operators were able to document demand and a willingness to pay in many communities.

Myth: Build It and Jobs Will Come

Justification for rural telecom policies and investments is often based on the assumption that investment in telecom alone will result in economic development. However, numerous studies have shown that telecom is necessary, but not sufficient, for development (Hudson 1997a). The reality is that many other factors contribute to rural economic development, including other infrastructure (particularly electrification and transportation), a skilled workforce and the cost of operations including facilities and labour.

Rural regions with all of these advantages may well be able to attract new jobs by encouraging investment in modern and competitively priced telecom networks. Western Ireland has become the ‘back office’ for many companies, building on its assets of a well-educated and comparatively low-cost labour and high-quality infrastructure, including telecom. In North America, Nebraska and New Brunswick have attracted thriving call centre businesses. Software engineers in India and Russia write computer code for high tech firms in North America; lawyers in Senegal transmit legal summaries to Paris over the Internet.

LESSONS FOR PLANNING AND POLICY**Universal Access Must be a Moving Target**

The definition of universality varies across developing regions. India has set targets of public telephones within a radius of a few kilometres in rural areas. The state of Alaska mandated telephone service in every village of 25 or more

residents. Universal service must be considered a dynamic concept with a set of moving targets that can be revised to take into consideration changes in technology and user needs. Goals should not be stated in terms of a specific technology or service provider (such as wireline or wireless service provided by the local telephone company), but in terms of functions and capabilities, such as the ability to transmit voice and data. And because information access is important for socio-economic development, universality should be assessed not only in terms of the number of individuals that have access, but also in terms of whether schools, clinics, libraries and community tele-centres have access (Hudson 1997b).

In developing regions, the demand for services besides basic voice telephony is now spreading beyond businesses and organisations, to small entrepreneurs, non-governmental organisations and students, driven by demand for access to e-mail and the Internet. Such services can be valuable even for those who are illiterate. Like the scribes who helped earlier generations, ‘infomediaries’ ranging from librarians to tele-centre staff can help people with limited education to send and receive electronic information.

If Subsidies are Needed, They Must be Targeted

The traditional means of ensuring provision of service to unprofitable areas or customers has been through cross-subsidies, such as from international or long-distance services to local telephone services. However, in a competitive environment, new entrants cannot survive if their competitors are subsidised. If subsidies are required, they must be made explicit and directed to specific classes of customers or locations. Subsidies may target economically disadvantaged areas or groups that could not afford prices typical for installation and usage. Operators may be subsidised to serve locations that are isolated and/or have a very low population density that makes them significantly more expensive to serve than other locations.

Old Distinctions are No Longer Relevant

Classifications and distinctions that once were useful may no longer be relevant. Regulators typically issue separate licences and approve separate tariff structures for fixed and mobile services, yet these distinctions have become blurred. In many developing countries, wireless has become the first and only service for many customers. Eliminating these licensing distinctions may accelerate access.

The distinction between voice and data no longer makes sense; bits are bits, and can be used to transmit any type of content from voice to video. Yet in many developing countries, voice communication is still considered a monopoly service,

precluding the use of Internet Protocol (IP) telephony, which can reduce the cost of voice dramatically. In contrast, China has encouraged its operators to build parallel IP networks.

Separate the Goals from the Means

Policy makers and regulators have a tendency to confuse the goals with the means. The role of the government should be to set goals and not to determine how they are to be achieved. For example, in the United States, the Federal Communications Commission initially tried to dictate the technology to be used in two-way very small aperture terminals (VSATs), in order to minimise interference. Innovative engineers were able to convince the regulatory agency to set the technical specifications and to let the industry determine how to meet them. The result was smaller and cheaper terminals. A developing country example is the mandate in India to upgrade all village payphones for data communication. Perhaps the goal should be stated as providing access to e-mail and the Internet in every village, with the means (payphone, kiosk, Internet teashop, etc.) left to the community.

Long Periods of Exclusivity Do Not Serve the Public Interest

In a liberalised environment, the length and terms of operator licences can influence the pace of growth of networks and services. Regulators typically face choices concerning how long to protect incumbents to enable them to prepare for competition, and how long to grant periods of exclusivity or other concessions to new operators to minimise investment risk. Yet exclusivity may be the wrong variable to focus on if the goal is to increase the availability of telecom services. Instead, investors cite a transparent regulatory environment with a 'level playing field' for all competitors as key to their assessment of risk.

A few countries have granted licences with as much as 25 years of exclusivity, although ten years or less seems more common. Even five to ten years may seem excessive, now that Internet time is measured in 'dog years'. Some jurisdictions such as Hong Kong and India have negotiated terminations of exclusivity periods with monopoly operators in order to enable their economies to benefit from competition in the telecom sector.

Users Will Find a Way...

Protecting dominant carriers not only penalises users, but drives the more agile to find alternatives. The users' response to unaffordable prices is increasingly to bypass the network, for example, by using callback services or Voice over Internet Protocol (VoIP). Many operators claim that callback and VoIP siphon off revenues that they need to expand their networks, which would also probably create more

jobs. However, the relationship is not so simple. Affordable Internet access can create new jobs in value-added services and an information resource for economic development.

If the Government is Slow to Act, Regulation Becomes Policy

A distinction is often made between policy making, typically carried out through a government ministry or department with responsibilities for telecom, and regulation, carried out by an independent body, that is, not related to the operator nor directly responsible to a minister. However, the distinction between regulation and policy quickly becomes blurred because of the pace of technological change and market pressures. One strategy to avoid this problem is to set firm enforceable deadlines for decisions on licence applications and other time-sensitive matters.

Effective Regulation Requires Participation

It is often thought that the issues in telecom policy and regulation are so arcane that most citizens could have nothing useful to contribute to the decision making process. However, all regulatory agencies are overworked and understaffed. The staff cannot find or analyse all of the data that would be useful to guide decision making. Major users are likely to have well thought out views on the impact of proposed regulations or on the need for reforms. The ability of small users and consumers to contribute may seem less likely. It may take some time for their representatives to get up to speed on telecom technology and the economics of the industry. However, the contributions of such groups can also provide perspectives that may otherwise be overlooked. A problem for consumer groups is the cost of tracking the issues and preparing testimony or other interventions. In order to ensure that such consumer perspectives are represented, in some countries the regulator pays the costs of participation in hearings by consumer organisations that contribute evidence, which would not otherwise be available. Melody has assisted numerous consumer groups and indigenous organisations in regulatory hearings and policy filings throughout his career.

CONCLUSION: OVERSIGHT WITH ENFORCEMENT WILL BE NEEDED

The marketplace is generally the best mechanism for bringing innovative and affordable services to most users, including those who live in rural and developing regions. However, there will be an ongoing need for oversight to monitor progress toward meeting targets, to enforce compliance with performance standards and to review and revise benchmarks. Otherwise, operators may not meet targets that are conditions of their licences in areas that they think will not be profitable. Or they may install facilities but not maintain

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them adequately if they assume the revenue generating potential is low. Operators must also be held to their licence conditions if licensing is to be an effective means of extending access.