

Introduction

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*Give a man a fish, you have fed him for a day;
Teach him how to fish, and you have fed him for a lifetime.*

This ancient Chinese parable is often used to demonstrate the greater importance of knowledge over more immediate and tangible gifts. But it is from a simpler time that is long past and is far from absolute, as an exposure of its tacit assumptions demonstrates.

A modern adaptation is *teach him how to fish, and you can sell him fishing equipment*. But can he afford fishing equipment, and does he know what fishing equipment to buy? Our newly trained fisherman must be able to afford fishing equipment, bait and maybe a boat, and to acquire additional specialised knowledge on how to use them effectively. He will need some specialised local knowledge on the swimming habits of different species of fish and the best locations and times for catching them. In modern parlance, he will need access to the appropriate technologies, skills to use them, and economic resources to be able to afford them. In today's world, information and communication technology (ICT) is used to track schools of fish by satellite for the benefit of those who can afford to buy this information and are capable of interpreting it and reacting in time to take advantage of it.

In addition, our new fisherman will need a fishing license, and fishing opportunities will be governed by the wisdom and effectiveness of local, national and international fishery policies and regulations. Thus, specialised knowledge, and often considerable managerial and political skill will be required to obtain scarce licenses, compete effectively with other fisherman, and to be heard on the policy and regulatory issues affecting one's fishing opportunities.

In reality, life for our new fisherman would be far more complicated than the parable suggests. And if he wished to sell some of his fish, further additional skills, resources and regulations would have to be mastered. But the lesson of the simple parable is still relevant. Training and knowledge enables people

to help themselves. But the knowledge and skill sets necessary to achieve success are often complex, multi-dimensional and interrelated. They involve important issues relating to technologies, policies and regulations, economic resources and their management. Knowledge and skill in only one area is usually insufficient to bring success, and coherence across technological, economic and policy/regulation issues is often necessary.

1.1 Designing Assistance Programs

The complexity and long-term nature of education, training and knowledge development programs create a degree of uncertainty about the end results of such programs. Benefits are seldom quantifiable with precision, or even measurable in the short-term, as the major benefits are realised much later, e.g., over a lifetime. But donors of aid and assistance typically require a clear quantifiable short-term result, e.g., a donated fish and a fed person, to judge effectiveness and decide future programs. This has led most donor aid priorities and programs to focus narrowly on trying to solve immediate, or topical, developing country issues, relying primarily on developed country expertise, rather than on long-term goals of teaching new knowledge and training in problem-solving skills.

Although these short-term programs often provide quantifiable short-term benefits, by implicitly rejecting the lesson of the parable they tend to foster dependency at the same time, thereby making long-term knowledge-building and enabling programs more difficult to implement. Some experts on this issue have concluded that the dependency relation is the primary result that completely overrides any short-term benefits from the substantive issues in aid projects. As Peter Bauer has

forcefully argued, the danger of aid is that it increases the power of government, leads to corruption, misallocates resources, and erodes civil society.¹ Yet the uncertainty of achieving positive results with long-term knowledge-building and enabling programs, which often lose focus and relevance, raises a serious risk that long-term programs may fail to achieve anything observable. This is perhaps the key reason that donor agencies are reluctant to support long-term knowledge development programs in a significant way.

However there can be synergy between short-term assistance and long-term institution building and empowerment. Both are necessary and neither is sufficient. It is not necessary to choose one type of aid program over the other. Rather, it is a matter of program design. If elements of training and knowledge generation are built into short-term assistance programs, and multiple short-term programs are coordinated over time, short-term programs can achieve long-term results as well. If timely and relevant short-term issues are built into long-term knowledge development, education and training programs, this will help maintain focus, relevance and interest in the programs, and can achieve short-term results as well. This model of program assistance can achieve superior results to those focusing only on short or long-term issues. It is possible to teach fishing and provide fish in a single integrated program.

1.2 Learning Initiatives on Reforms for Network Economies (LIRNE.NET)

LIRNE.NET was established on this core principle of synergy between long-term learning and short-term problem solving. LIRNE.NET's mission has been to foster long-term knowledge development on issues of telecom reform and ICT sector development through research and training programs on the evolving frontier policy and regulatory issues in the field. LIRNE.NET uses frontier regulatory and policy issues as the primary knowledge areas for achieving several interrelated objectives, 1) informing policymakers and regulators; 2) building research and training capacity in developing country centres and networks; and 3) expanding opportunities for participation in ICT policy and regulatory processes. It does this primarily through its international network of independent ICT research centres and regional research networks, and its training programs for telecom and ICT regulators and policymakers, and other participants in policy and regulatory processes.

Finding financial support for this long-term agenda focusing on frontier ICT policy and regulatory issues has been difficult as this model is foreign to most aid agencies and assistance programs. It has been made possible by the continuing academic interest and university support at LIRNE.NET's founding universities in developed countries, support from *infoDev* for the **World Dialogue on Regulation (WDR)** website for its first six years of existence, and major research and dissemination support from IDRC for capacity building in devel-

oping country ICT centres and networks through research contributions and training programs.

As LIRNE.NET's agenda is focused on building and strengthening institutions, and their capabilities for informed participation in frontier ICT policy development and regulatory implementation processes, it has evolved along some clear lines of development. The LIRNE.NET global network of regional ICT research centres has steadily expanded, bringing continuously increasing participation of developing country centres and researchers. Through LIRNE.NET's WDR website, there has been continuously expanding participation in its world dialogue on frontier regulatory and policy issues. And through its research-based participation in the policy and regulatory debates and deliberations in many countries, especially developing countries, it has both informed ongoing policy and regulatory deliberations on current issues and attracted increasing participation from users and other affected organizations. Increasing participation in research on policy and regulatory issues, and in policy and regulatory processes has been our primary indicator of progress. At the same time, LIRNE.NET research has contributed to more informed participation, dialogue, and policy and regulatory decisions in many countries.

LIRNE.NET's locus and activities, including research, editing, website and program management have shifted from our developed to our developing country centres. The WDR dialogues are primarily about developing country issues. Participation in policy and regulatory deliberations in developing countries is now expanding beyond the narrow club of incumbent and private telecom operators, telecom regulators and specialists, to include new operators in both the public and private sectors, as well as civil society organisations that have a stake in the resulting policies and regulations. This year's WDR research report, **Diversifying Participation in Network Development**, documents this positive trend.

1.3 Diversifying Participation in Network Development

The underlying theme of the LIRNE.NET research programs associated with its World Dialogue on Regulation activities has been expanding the opportunities for informed participation available to developing country researchers, policymakers and regulators, users and potential users of ICT services, with particular reference to poor people without services. Peter Bauer described the basic idea a half century ago as follows,

I regard the extension of the range of choice, that is, an increase in the range of effective alternatives open to people, as the principal objective and criterion of economic development; and I judge a measure principally by its probable effects on the range of alternatives open to individuals... The acceptance of this objective means that I attach significance, meaning, and value to individual acts of choice and valuation... (Bauer and Yamey 1957).

The research from the recently completed WDR research cycle on diversifying participation in network development presented in this volume is organised around three themes that the research examines. The first, *Affordability and Use*, results from research projects directed to provide a better understanding of the demand for telecom and ICT services by poor people.

For most of its history telecom has been examined as an issue of supply. The challenge has been seen as supplying telecom capacity, with relatively little attention paid to demand. The conventional wisdom about the needs and demands of poor people was drawn primarily from the limited study of experience in developed countries. It was considered obvious that poor people would have to spend a lower percentage of their income on telecom services because of the requirement to spend a higher proportion on necessities such as food and shelter. Further, their usage would be minimal, and uneconomical, as it would have to be confined only to the most urgent and highly valued calls. Subsidy calculations and plans for the network development that would be provided were based on these assumptions. As a result national networks in developing countries have been poorly developed or left undeveloped because of the perceived enormous subsidy requirements and limited usage expectations.

These assumptions were built into the early development of mobile networks. But these networks were extended to cover many regions where poor people lived because subscribers in more developed regions of countries, where there was a degree of competition among mobile operators, desired service coverage when they travelled. When the prepayment option for mobile services was introduced for a niche higher priced sub-market of users in more developed areas, poor people saw opportunities that had not been seen by others and which completely contradicted the conventional wisdom.

Mobile service is priced considerably higher than fixed service, and prepaid is priced higher than subscription mobile service. But telecom service was possible in many poor areas whereas it had not been possible previously. The prepayment option permitted access whereas subscription services with deposit and credit reference requirements presented an insurmountable barrier. The prepaid option was at significantly higher prices, but the amount spent was under the direct control of the phone (or SIM card) owner. Calls could be restricted to high value purposes, but the phone could be shared with family and friends in communities, and calls could be received at no additional cost in most countries, thereby generating much more traffic and revenue than forecast. When the micro-finance innovation was added, the barrier of the high cost of purchasing a mobile phone by the poor was reduced, permitting an expansion of the poor's access to mobile service. And when traditional restrictions on retailing services were lifted, the poor could establish local markets trading in calling minutes on mobile phones.

Today the vast majority of mobile use throughout the world is prepaid and an ever-increasing proportion of users are peo-

ple, families and communities previously considered too poor to be provided with service economically. Most of these poor users are being served profitably, and where subsidies are required they are a fraction of the estimates calculated on the basis of the old conventional wisdom. The driving force behind the great expansion in prepaid mobile service to the poor has been the innovation of the poor once they were presented with options and choices that enabled them to participate in communication services and manage their usage and spending. The chapters in Section 1 document these developments from the perspective of case study experience and a critical assessment of both past and current statistical data sources.

Section 2, *Models to Extend Participation in Network Development*, looks beyond the conventional wisdom on how best to extend networks to un-served regions and people. It examines ways of overcoming the supply side barriers to network development, which has been severely constrained by policies restricting network development rights to national monopolies and self-serving monopolistic estimates of subsidy requirements. The chapters in Section 2 examine innovative models for extending participation in network development, case studies of experience with new participants in the network development process from both the public and private sectors, and the use of new models for financing, the use of subsidies and research network cooperation.

The innovations examined in Sections 1 and 2 became possible only when policies and regulations were changed to permit increased participation in the new ICT-based telecom environment. Section 3, *Regulatory and Information Practices*, recognizes the importance of policy and regulation in fostering or constraining participation in network development, and the importance of informed, progressive regulation as the key facilitator of continued progress. The chapters in this section are directed to issues that can increase the effectiveness of regulation in its new facilitation role in an environment of expanded participation in network development and in the regulatory process.

The chapters in this volume demonstrate that most of the conventional wisdom about, 1) the demand for communication services by the poor; 2) the best way to extend telecom networks to poor regions; and 3) the most appropriate policies and regulations for sector development, have been rendered obsolete. A new understanding must be developed on the basis of research grounded heavily on case studies of new participants in network development, innovative and experimental approaches to network development, new models of demand, supply and markets, and a new proactive facilitating role for regulation. These chapters provide significant contributions to several policy and regulation issues currently under consideration in many developing countries, and to the development of a better understanding the new ICT sector and its development that must guide future ICT policy and regulation. To return to our parable, they demonstrate that the fishing is not as simple as it used to be, but it is possible to teach fishing and to catch fish in the same activity, thus validating both objectives.

Notes

¹ See Peter T. Bauer's landmark works *Dissent on Development* (1972) and *The Development Frontier: Essays in Applied Economics* (1991).

References

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