Research Article

The Institutional Framework of the United Nations Development Programme–Ministry of Science and Technology (UNDP–MoST) Telecenter Project in Rural China

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Abstract

Construction of rural telecenters has been recently promoted by Chinese government officials as an innovative way to solve the problem of underdevelopment in rural areas. To address questions on the project's effectiveness and manageability, this article attempts to do a case study on the United Nations Development Programme–Ministry of Science and Technology (UNDP–MoST) telecenter project by analyzing the deliberative nature of its institutional framework. Such an analysis seems to indicate the coexistence of a collaborative network-building effort and a continuity of traditional institutional hierarchy, division, and lack of public deliberation. Although policy innovations should be celebrated, further efforts should be taken to promote the complexity of the framework and enable further participatory deliberation in the project policy-making process.

At the conclusion of its first Five-Year Plan for national development in the new millennium, China found itself in a painstaking struggle to bridge a widening gap between its rural and urban regions in socioeconomic development, which has amounted to a major threat to the country's overall economic well-being and social stability (Sun, 2003; Hu, 2003). Inspired by the widely promoted idea that diffusion of information communication technology (ICT) is positively related to development (Mansell & Wehn, 1998; Castells, 1999), government authorities in China, similar to those in many other developing countries, started to place priority on development programs that integrated the use of ICT with poverty alleviation (Hu & Xiong, 2000; Gong, 2004). In March 2006, China's central government declared in its 11th Five-Year Plan that preferential policies would be adopted and huge investments would be made in the coming 5 years to step up the construction of an information network in rural areas, which would guarantee telephone access for every village and Internet access for every town (11th Five-Year Plan, 2006; MIIT, 2007). As a result, rural telecenter construction started to move up the national development agenda.

Despite policy makers' enthusiasm about the function of ICT for development, an overview of the telecenter programs in many developing countries seems to show that the prospect of ICT for poverty alleviation is not highly optimistic and thus deserves further study and deliberation. While plenty of research has been done to measure the economic impacts

of rural telecenters in China, this article will address the question of how the institutional framework of such projects can facilitate or hinder the use of project investment to its full effect. To achieve such a goal, this article aims to conduct a case study on the institutional framework of the United Nations Development Programme–Ministry of Science and Technology (UNDP–MoST) telecenter pilot project carried out in five poverty-stricken counties in China from 2001 to 2004. The project, officially named "Poverty Reduction Through Access to ICT," has been taken as a model for future ICT for poverty alleviation efforts in China since its conclusion. It was implemented by China Rural Technology Development Center (CRTDC) of China's Ministry of Science and Technology (MoST) in collaboration with the United Nations Development Programme (UNDP) Beijing Office. The project's objective and planning make it fit into the category of multipurpose community telecenter (MCT) projects as defined by the International Telecommunications Union (ITU). Therefore, this article refers to it as the UNDP–MoST telecenter project for convenience.

First, the article will present a project brief and introduce certain concepts and principles of deliberative policy analysis that are relevant to practical telecenter studies. Second, the article will make use of the principles of social inclusion as defined by deliberative theory to examine a limited involvement of UNDP and the absence of private partnership and local civil organizations in the project's institutional framework. Third, the following sections will analyze the extent to which such a framework can facilitate participatory deliberation within and beyond government institutions by observing the distribution of knowledge resources, power resources, and network resources among all of the parties involved. Finally, the article will point out in its conclusion that the coexistence of a collaborative network-building effort and a continuity of traditional institutional hierarchy, division, and lack of public deliberation undoubtedly exerts influence on project manageability and effectiveness. While giving due recognition to the policy innovations and project achievements, the article will make certain policy recommendations to encourage further efforts to promote the complexity of the institutional framework.

Project information comes mainly from four sources: project documents and reports released by UNDP (UNDP Beijing Office, 2001) and project executive offices at both local and national levels (Yuyang Project Executive Office, 2002–2005, 2004); project evaluations provided by project executive officials and project consultants (Wang, D., 2003; Wang, H., 2003; Ulrich, 2004; Wang, Jiang, & Bai, 2005); two face-to-face interviews conducted in April and November 2006 by the author with the CRTDC's office director (Ms. Meng); and two telephone interviews conducted in April 2006 by the author with project directors in Yuyang and Wu-an counties (directors in the other three counties either refused to give interviews or excused themselves for being unable to answer questions, because they were either newly appointed or too busy with other projects). Detailed questions were raised in the interviews about the project planning, implementation, and evaluation, as well as its sustainable development.

Project Brief

Affiliation and Alliances
After launching several microcredit projects jointly in poor rural areas in China, the UNDP Beijing Office and CRTDC recognized inadequate access to ICT in the poor countryside as a major obstacle to their project investment, and thus a proposal about setting up multipurpose community telecenters in poor rural areas was raised, discussed, and later approved in 2000 by UNDP headquarters, China's MoST, and the China International Center for Economic and Technical Exchanges (CICETE), a fund management agency created by the Ministry of Commerce and the State Council in cooperation with the UNDP (Ms. Meng, personal communication, 2006) for all telecenter projects. The project was launched in February 2001 with CICETE as the designated institution, CRTDC in collaboration with the UNDP Beijing Office as executive institutions at the national level, and the County Bureau of Science and Technology in each selected pilot site as the implementation agency at the local level. Additionally, a National Consultative Committee and a County Advisory Board involving ministries and local government agencies in various sectors were also introduced into the project.

Funding
According to the project planning, a total of US$2.5 million should be put into the project to cover all expenditures, of which US$650,000 should

come from UNDP as international aid, US$850,000 should come from MoST as a national subsidy, and US$20,000 should come from each of the five county governments as local funding. Such division of cost is made in line with UNDP principles which require that local funding help to develop local initiative in project implementation.

County Selection

In light of the volume of funding, five counties, namely Shangcheng (Henan Province), Huoshan (Anhui Province), Yuyang (Shaanxi Province), Tongnan (Chongqing Municipality), and Wu-an (Hebei Province) were selected for project implementation. There were three key criteria for county selection: 1) County locations should represent typical geographical and socioeconomic conditions in different rural regions in China (Figure 1); 2) they should fit in the country's definition of a poverty-stricken county with no sufficient penetration of modern ICT; and 3) the county implementation agency should win sufficient support from the local authority in mobilizing local resources to guarantee a smooth project implementation (Ms. Meng, personal communication, 2006).

Access and Technology

Through the project implementation, 37 telecenters have been established either in local schools or in government office buildings in five counties, 10 towns, and 22 villages. Each telecenter is equipped with at least one dial-up Internet-connected computer, one printer, one fax machine, and, in some counties, one television and one videocassette player. Six Web sites were created and maintained by CRTDC and the five counties, and a multimedia information service mechanism was established with the Internet at the core and other media as its complements. According to incomplete statistics released by CRTDC, 7,749 peasant households with a total population of 29,226 are covered by the information network.

Staffing, Training, and Evaluation

A total of 154 local staff members were hired to run the telecenters. Staff training was offered in Beijing and local places by UNDP experts and university professors invited by CRTDC. The trained staff then trained the villagers or simply helped them search for information. Three Participatory Project Evaluations were made by foreign and national consultants
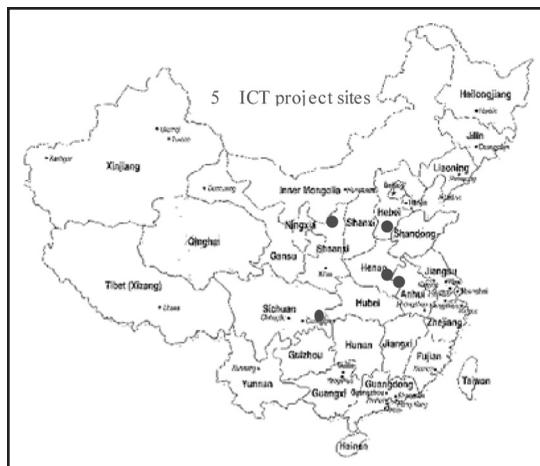

Figure 1. Locations of the five United Nations Development Project–Ministry of Science and Technology (UNDP–MoST) telecenters.

before, during, and after the project implementation.

Project Objectives

Project documentation released by UNDP (2001) and CRTDC (2003) identifies three target beneficiaries, which are local governments, poor households, and rural communities in the five pilot sites. Accordingly, the documentation states clearly that the project aims to 1) enhance the institutional capacity of local governments to harvest the potential of ICT, 2) increase the living standards of the poor rural community by providing them sustainable access to oriented information services, and 3) demonstrate viable models of ICT for poverty alleviation and provide valuable inputs and recommendations to the formulation of national policies and programs.

Project Achievements

According to reports released by CRTDC and the five county implementation agencies (2004), the project has made outstanding achievements in raising local awareness of the importance of ICT, improving participants' capabilities to use information, increasing participants' incomes, enriching participants' lives, and improving participants' labor skills. During the years, the project has attracted a wide range of media coverage. To promote policy advocacy and further replication at the national level, national workshops and international conferences have been held to share project experiences and best

practices with national authorities and international communities.

After Implementation

The project concluded in 2004. Since then, the county agencies have assumed sole responsibility for the project's sustainable development. The present situation of the telecenters seems to vary from county to county: In Wu-an, a comparatively rich county, the project Web site seems to be expanding both in scale and scope, but the telecenters in villages are visited much less by the local people; in Yuyang County, the project Web site is rarely updated, and the telecenters are struggling for survival. Hopefully the county's implementation of a project funded by the Ministry of Information can sustain further development. Similarly, the Web site in Shangcheng County is already shut down, and telecenters there are also waiting for financial support from another poverty alleviation project to bring them back to life. In Tongnan County, promotion of the county project administrator left the project with no experienced executives, and as a result, the telecenters there have almost ceased to function (Ms. Meng, personal communication, 2006). Both project directors in Yuyang and Wu-an counties stated in the interviews that the major reasons for their failure to bring the telecenters to their full potential were a lack of funding, technological support, and content-building capacities, in addition to an inability to recruit skilled staff and experienced administrators. Is such a sustainability problem unavoidable? Is there a viable way to improve the project's manageability and effectiveness? To cast light on such questions, the following sections will take a deliberative analysis of the project's institutional framework and illustrate how it bears root to both the strengths and weaknesses of the project's management.

Conceptual Tools: Why Deliberative Analysis?

The origin of modern deliberative policy making theory can be traced to John Dewey's call for extensive communication between decision makers, John Stuart Mill's idea of public debate, and Habermas's theory of discourse democracy (Eriksen & Weigard, 2003). However, it is the bridge between further development of the theory and concrete policy practices in the 1980s and 1990s that makes deliberative theory more relevant to today's public policy making. Since then, research on the theory has, in significant part, emerged with issues such as water management in California, informal policy networking in the European Union, rural community network building in Northern Ireland, and other planning for sustainable development in developing countries (Hajer & Wagenaar, 2003; Gutmann & Thompson, 2004). What is deliberative policy making, and how is it relevant to the analysis of the institutional framework of the UNDP–MoST telecenter project?

1. Concepts, Principles, and Strategies of a Deliberative Policy Analysis

Deliberative democracy, the key concept in deliberative theory, is defined by Gutmann and Thompson (2004) as "a form of government in which free and equal citizens and their representatives justify decisions in a process in which they give one another reasons that are mutually acceptable and generally accessible, with the aim of reaching conclusions that are binding in the present on all citizens but open to challenge in the future." Such participatory deliberation, according to Fischer (2003), can build new political cultures capable of preserving and extending decision-making capabilities. A deliberative policy analysis is to interpret the policy-making process by evaluating the extent to which it can facilitate the realization of deliberative democracy.

Deliberative policy analysts believe that the major transformation of today's political reality is the emergence of plural interests that are more fragmented, interrelated, and competitive than before. Therefore, despite theoretical and methodological divisions, they all argue that an individual institution does not have sufficient resources to handle a public issue, and thus effective and sustainable public policy planning should focus on the fundamental principles of social inclusion, which are 1) knowledge and information accessibility for all stakeholders, 2) deliberative collaboration based on the rule of mutual reciprocity, 3) public enlightenment and citizen empowerment with an emphasis on dialogues between citizens and experts, and 4) understanding public policy making as a dynamic process that is always subject to public challenges (Hajer & Wagenaar, 2003; Gutmann & Thompson, 2004; Gastil & Levine, 2005). The focus of such an analysis is to study the diversity, interdependence, and coevolution of stake-

holders in addition to observing how problems are defined and understood in the decision-making process and whose responsibility it is to solve them.

To achieve such a goal, a concept of authentic dialogues among all stakeholders is used by many to evaluate the deliberative nature of a specific policy-making process. An authentic dialogue is a collaborative process in which representatives of different interests can truthfully express self-interest, freely access understandable information provided by other stakeholders, and willingly exchange points of view to seek common understandings. It is believed that such a dialogue can enable the participants to generate their own meanings in the deliberation network, take active participation in the practice, and thus help build up the institutional capacity (Eriksen & Weigard, 2003). It is further argued as a key factor of the deliberative model in contrast to the technical model, political influence model, and social movement model, which are only about convincing, co-opting, and converting other stakeholders (Hajer & Wagenaar, 2003; Agranoff & McGuire, 2003). Research on authentic dialogues seems to follow two major approaches. One approach is to make a discourse analysis of all available records of communicative actions among stakeholders. Another approach is to take provision of knowledge resources, network resources, and power resources as the guarantee for authentic dialogues (Hajer & Wagenaar, 2003). Such an approach requires the researchers to observe whether the governance structure provides the stakeholders and beneficiaries with a fair representation in the decision-making process and whether reliable channels are available for them to access and generate information, communicate with group members and others on an equal basis, and exert influence on the decision-making process.

2. Relevance of Deliberative Policy Analysis to Practical Telecenter Studies

Basic concepts and principles of deliberative policy analysis seem to echo the primary concerns telecenter researchers have about institutional network-building and grassroots participation (Latchem & Walker, 2001; Roman & Colle, 2002; Badshah, Khan, & Garrido, 2005). The relevance of deliberative policy analysis to the objectives and organizational reality of the UNDP–MoST telecenter project are easy to understand, if not self-evident. Additionally, basic principles of deliberative policy analysis

seem to echo certain theories or models which have already proven applicable to telecenter studies. Diffusion theory, which emphasizes contextual factors and interpersonal communication in a social network (Roman, 2003); self-efficacy theory, which views human functioning as a product of dynamic interaction between personal and environmental influences (Bandura, 1997); and the TAM model, which raises perceived usefulness and perceived ease of use as key mediators of external variables and technology adoption (Davis, 1989; Legris, Ingham, & Collerette, 2003)—all share with deliberative policy analysis the recognition of interaction between external forces and internal evolution, as well as the dynamic relationship between meanings and actions. Heeks's (2002; 1999) argument about the provision of overt resources (money, skills, technical infrastructure), embedded/social resources (trust, motivation, knowledge, power), and relevant raw data resources (also named by Heeks as data resources, economic resources, social resources, and action resources) in his information chain model also echoes the argument raised by deliberative policy analysts who take resource distribution as a guarantee for authentic dialogues, and thus for participatory deliberation. The fact that these theories are widely quoted and studied by telecenter researchers seems to further enhance the validity of a deliberative analysis of a telecenter project's institutional framework.

A full-scale deliberative analysis on the project's institutional framework may demand an integration of the two approaches previously mentioned: a discourse analysis and a resource distribution evaluation. However, detailed records of communicative actions among stakeholders in the UNDP–MoST project are either nonexistent or inaccessible to researchers, because MoST declined requests for open access to detailed project files and statistics. Therefore, the analysis in this article will be limited to a resource distribution evaluation, and the focus will be on the flow of three resources among all stakeholders and beneficiaries.

Limited Inclusiveness: The Private Sector, Local NGOs, UNDP

Principles of social inclusion in deliberative theory emphasize the establishment of an interorganizational network to reform the top-down policy-

making structure. However, an overview of the institutional framework of the UNDP–MoST telecenter project reveals strong government leadership, limited involvement of UNDP, and an absence of private-sector and local civil organizations.

It is true that most developing countries have long traditions of state-planned economies, and thus their governments have dominant control over financial resources and executive power and have to assume leadership in providing public goods. However, the unique socio-political reality in China further contributes to the solely legitimate role of government institutions in carrying out development programs. The governance structure of the UNDP–MoST telecenter project can serve as a good example.

1. Private Sector
Although the private sector's involvement in worldwide telecenter construction has always been limited and mainly comprised of in-kind contributions or donations rather than an active entrepreneurial role, the ownership structure of some rural telecenter programs—such as the AMIC@ operations in Paraguay, the SARI Project in India, and other telecenters in Uganda and Senegal—seems to indicate a trend for private-sector involvement and entrepreneurship (Latchem & Walker, 2001). Despite such a trend, immaturity of the private sector in China, and more importantly, the deep-rooted mistrust between government and business, keep the businesses from active involvement in telecenter construction.

Contribution made by the five major telecommunication corporations, namely China Telecom, Netcom, Mobile, Unicom, and Satcom, to rural ICT diffusion has been frequently cited as a significant business involvement in China's rural telecenter construction. The UNDP–MoST project also collaborates with local branches of these corporations in setting up Internet connections. However, these are all state-owned corporations whose overall strategies are supervised and guided by the Ministry of Information Industry. Therefore, it is safe to say that their participation in major telecenter projects is to a large extent a government-directed behavior (MIIT, 2005). Besides, their involvement in the project, as in many others, is still limited to technical support.

Private IT companies, however, have fewer chances to provide such technical support. Although private IT companies such as Lenovo have shown interest in the rural market by promoting low-price ICT facilities and services in the countryside,[1] formidable preinvestment in building up product awareness, maintaining infrastructure, and offering skill training leaves them with no choice but to confine their target market to comparatively wealthy rural areas. Government projects, which possess sufficient funds and mass-mobilization power, can possibly meet such challenges. But only large-scale government projects, such as the Billion Yuan project,[2] are extending bidding invitations to private IT companies. In the interviews, two reasons are offered by project directors in Yuyang and Wu-an counties for noninvolvement of private IT companies in the project: 1) It was assumed that no private IT companies could be interested in the project because it did not yield immediate high economic returns, and 2) involvement of such companies might further complicate the policy deliberation and thus make project management difficult. Similarly, although a partnership with local service businesses can obviously generate mutual benefits, the possibility of such a partnership was either unrecognized or denied by an executive agency that was concerned with the challenges a partnership might pose for project management.

Cooperation with cybercafés was also considered by the project executives as out of the question. Despite their rapid growth in rural China, 90% of the cybercafés in rural areas, according to a survey conducted by Ministry of Culture, are unlicensed, poorly equipped, family-based, small-scale investments, scattered in rural town centers. Cybercafés primarily earn their profits by attracting children with computer games that promote violence and pornography (Xiong, 2004). As a result, they are thought of by both the government and parents as a terrible threat to school education and healthy development of rural children and thus should be removed from the community. In early 2006, the Ministry of Culture urged local governments in rural areas to curb the growth of illegal cybercafés. While many unlicensed cybercafés were forced to close, no effective

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1. For example, Lenovo's 2004 "PC for towns and counties" strategy, which offered its PC for about US$400.
2. Officially named the "Rural long-distance learning project" and launched by the Ministry of Education. It will invest 1 billion yuan during the next 5 years.

mechanism had been established to ensure healthy development of the licensed ones. Therefore, as the project director in Wu-an County stated in an interview, cybercafés are not regarded as a potential partner for rural telecenter construction, but as a competitive force that government-funded telecenters should try to defeat.

Active involvement of the private sector will undoubtedly complicate the decision-making process, and exclusion of this sector certainly increases efficiency in project implementation. However, taking this as an excuse for its exclusion, project executives fail to realize that such communication and argumentation itself, as argued by deliberative policy analysts, is a contribution to reducing the much-discussed implementation deficit. Telecenter projects in some low-income countries, such as the TELISA project in Lesotho (Latchem & Walker, 2001), have proved that it is possible to turn rural telecenters into attractive business ventures. As argued by Proenza (2001), public–private partnership, especially cooperation with cybercafés, can turn funded telecenters into income-producing businesses that can be demand-driven instead of supply-driven. During the interviews, both the official in CRTDC and county directors admitted that if the project executive agencies managed to provide preferential treatment to attract local business and thus integrate a business model into the institutional framework, the telecenters would not be so severely disturbed by the problem of financial sustainability.

2. Local NGOs

If the private sector's absence can be considered more as a deficit in the institutional framework than as a deficit in the country's economic and political system, then absence of local NGOs should be regarded as a problem more related to the socio-political reality in China.

NGOs have never gained a position in China's political tradition. They have long been considered by the government as insignificant actors in the political arena that can be neglected or as irresponsible and unreliable organizations that should not be trusted, or even worse, as evil forces that should be eliminated as potential threats to the government leadership (Tang, 2005). The slow-paced political reform in China does help legalize the existence of NGOs. However, a 2-year survey conducted by China Research Center of Social Organizations indi-

cates that the growth of NGOs in China is severely restrained by registration barriers and lack of funding and talents (Yu, 2006). NGOs which, like the Women's Federation, are playing active roles in China's political arena are mainly organized from the top down, attached to and financed by government agencies. Their participation in decision making is considered more as assistance to the government agency than as a representation of civil interests. Therefore, while local NGOs, as representatives of local beneficiaries, are implementing or facilitating the projects of Telecottages in Hungary, Community Learning Centers in Ghana, Info-shops in India, telecenters in South Africa, and similar projects in many other countries (Proenza, 2001; Latchem & Walker, 2001; Colle, 2005), most telecenter stakeholders in China do not see local NGOs as active players in project management. The UNDP–MoST telecenter project is no exception.

Lack of NGO involvement disturbs the balance of interests represented in the institutional framework and thus weakens the participatory nature of the policy deliberation. Without such an intermediary between citizens and executives, the project implementers have to meet the challenge of truthfully assessing and fully satisfying the needs of individual beneficiaries, which in this case is a large population of poor villagers. The complementary strategy adopted by the executives to meet such a challenge will be discussed later in this article.

3. UNDP Beijing Office

Telecenters in developing countries are mostly financed and supported by international aid agencies, such as UNDP, ITU, the World Bank and some national and international development agencies such as the United States Agency for International Development. Despite the diversity of organizational agendas and the differences in project localities, international organizations, due to their lack of local knowledge, all work in partnership with local institutions. In addition to direct financial support, they bring advanced technology, management skills, and overseas experiences to facilitate the local project implementation (Latchem & Walker, 2001). In the UNDP–MoST telecenter project, these contributions are managed by the UNDP Beijing Office in several ways: supervising fund allocation, reviewing project reports submitted by local implementation agencies, holding seminars with local institutions, funding a

field visit to telecenters in some European countries, launching participatory project evaluations, and providing technical training for county implementation agencies and telecenter staff.

However, diverging doctrines and interests between the Chinese government and international organizations such as UNDP somehow result in a limited involvement of international organizations in policy deliberation. Suspicious of the motives of many international organizations working in China, the Chinese central government rules that all international organizations, to register to operate in China, should grant their projects, along with funds, to a specific national government agency. Under such a policy, the international organization has to fit its agenda into the government agency's specific concerns and functions (Ma, 2006). In the case of the UNDP–MoST telecenter project, providing ICT to increase income was considered by national and local project executives to be a major project objective, because it fit within the functions and powers of MoST, and encouragement of e-government and citizen participation in policy making mentioned in the UNDP project document was considered less relevant. Moreover, the policy makes it almost impossible for international organizations to collaborate directly with local government agencies, let alone local communities. As a result, international organizations could not hold local executives accountable for specific practices and were unable to reach out to local beneficiaries for policy deliberation. During the interviews, all three directors viewed UNDP merely as a fund-raiser and a consultant instead of an equal partner. Preventing the UNDP consultant from visiting village telecenters in Shangcheng County and the failure to publicize the UNDP project evaluation results to local agencies and beneficiaries are evidence of UNDP's limited involvement in the policy

deliberation process. Moreover, international organizations' lack of local knowledge and constant agenda changes further alienated them from local institutions, and thus made it difficult for local institutions to to find common ground with them. Ultimately, they were reluctant to involve international organizations in further policy deliberation. In this case, the UNDP Beijing office discontinued its funding for a second term of the telecenter project because of a shift of its organizational agenda and thus left CRTDC without sufficient funds to launch a planned replication of the project.

A project institutional framework with inadequate social inclusion can achieve high efficiency in project implementation, which a deliberative policy-making process can hardly match. In China, nationwide ICT for development projects, such as the Spark Program, Every Village Project, Golden Agriculture Project, Long-distance Learning Project, and the Rural Officials Long-distance Training Program,[3] are initiated from the top down by national government institutions with limited involvement of other institutions. While the ICT infrastructure construction in rural China owes its wide coverage and high efficiency to such a governance structure, it should be noted that such efficiency might be achieved at a cost of effectiveness and sustainability. As argued by deliberative theory, absence of major stakeholders and beneficiaries may deprive the public of alternative visions of what is desirable and possible and thus cannot provoke a reexamination of premises and values. As a result, the project management is subject to the danger of resuming a traditional policy-making process in which the project implementers, while having no sufficient sources of guidance in setting directions, may easily follow their own visions and values in forming the agenda, and thus may leave the project unsustainable (Fischer, 2003).

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3. *Spark Program: launched in 1986 by the Ministry of Science and Technology, aimed at development of science and technology in rural areas, with 140,000 projects carried out now in 90% of the rural areas in China (see the project's official Web site, http://www.cnsp.org.cn); Every Village Project: launched in 2004 by the Ministry of Information and Telecommunication (now reformed into the Ministry of Industry and Information Technology), aimed at universal telephone service in 97% of rural areas, with a further goal of providing Internet access to every town; Golden Agriculture Project: launched in 1995 by the Ministry of Agriculture, currently aimed at ICT- (especially Internet-) mediated agricultural information distribution and market service network-building in national, provincial, and local agriculture-related institutions (see http://www.agri.gov.cn); Long-distance Learning Project (also called Ten Billion Yuan Project): launched in 2004 by the Ministry of Education, Ministry of Development and Reform, and Ministry of Finance, aimed at ICT- (especially Internet-) mediated long-distance primary and secondary education in 12 rural provinces (http:// news.xinhuanet.com/edu/2004-12/22/content_2370297.htm); Rural Officials Long-distance Training Program: organized by the Organization Department of the CPC Central Committee, aimed at Internet-mediated government official training in rural areas (see http://www.dygbjy.gov.cn/index.php).*
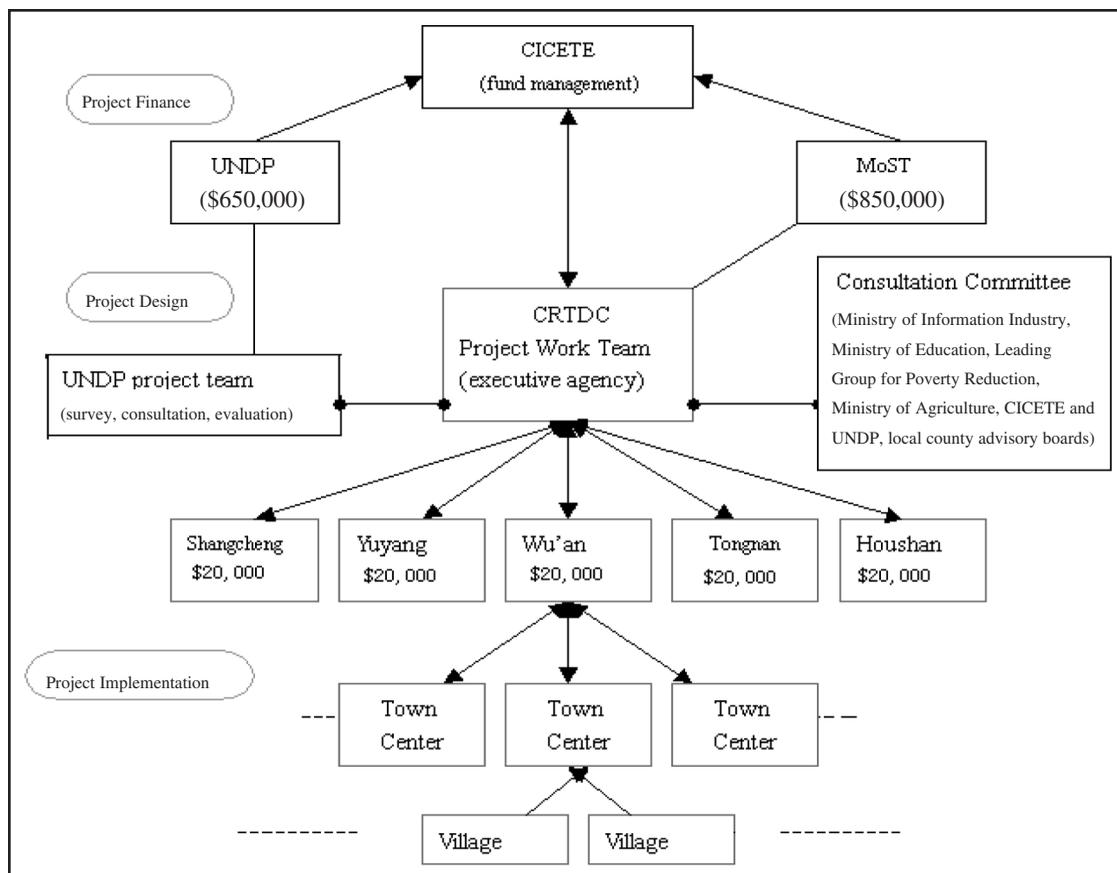
Figure 2. Institutional framework of the UNDP–MoST project (national level).

In the case of the UNDP–MoST telecenter project, the executives firmly believe that an ICT for poverty alleviation project should be a social welfare program that serves "primarily an economic function" by providing information and training, which is mostly economic in nature (Ulrich, 2004). Lack of financial and popular support of the project after implementation can be largely attributed to such limited visions.

To what extent can such an institutional framework enable authentic dialogues among the few stakeholders? The following sections will address that question by interpreting the flow of the three resources in the institutional framework from two dimensions: 1) a vertical dimension examining resource distribution within executive agencies at different levels, and 2) a horizontal dimension examining resource allocation to government institutions in other sectors. Provision of resources to citi-

zen beneficiaries will also be studied to see whether authentic dialogues between citizens and the agencies can be enabled.

Government Executive Institutions: Decentralization Within an Institutional Hierarchy

1. Empowerment of County Implementation Agencies

In light of the central-provincial-local hierarchy rooted deep within China's bureaucratic system, empowerment of county implementation agencies in the project institutional framework (Figure 2) should be recognized as an outstanding tentative move to develop a participatory deliberation between national project planners and local implementers.

Such empowerment is mainly realized by restricting the power of provincial agencies and providing

county agencies with power, knowledge, and network resources through innovative channels. In most of the previously mentioned large-scale ICT for development programs in China, local autonomy and creativity was largely dwarfed by project implementation quotas set by policy makers at central and provincial levels. However, in this project, provincial agencies were only assigned as project advocators and thus had no right to set agendas or allocate funds. As a result, county agencies reportedly found themselves, for the first time, in direct collaboration with a national agency, CRTDC.

To ensure that resources were distributed directly from the national agency to the county agencies, innovative channels, such as Web site links, and participatory conferences and workshops, are established. These channels allow county agencies to access policy information and participate in a face-to-face policy deliberation with national policy makers and UNDP experts. To build up local capacity, CRTDC has organized five technical training programs in Beijing for staff in local executive agencies and telecenters; one field visit by county agency directors to telecenters in Europe, and more than 20 separate visits by experts to local telecenters in counties, towns, and villages. More importantly, county agencies are also allowed to make their own decisions on local project planning. These decisions include budgeting, selection of pilot towns and villages, telecenter locations, staff appointments, and collaboration with other local government agencies (Ms. Meng, personal communication, 2006).

Such a decentralization effort cannot be compared with locally initiated projects in countries such as India, where the local government has more autonomy in the political system (Dabla, 2004). However, decentralization in this institutional framework must be evaluated in light of China's socio-political reality and thus should be regarded as a breakthrough shifting away from the traditional rigid hierarchy. Integrated use of ICT in Yuyang County, and flexible standards for telecenter staff appointments in all counties, prove that this decentralization effort can directly or indirectly facilitate local innovations.

2. A Pyramid-Shaped Structure: Continuity of Institutional Hierarchy

Despite the empowerment of county agencies, Paul Ulrich, the UNDP project consultant, describes the overall institutional framework of the UNDP–MoST project as "a pyramid-shaped structure" in his final project report (2004). The dominant control of power, knowledge, and network resources by CRTDC and the passive role of town and village telecenter work teams in the policy-making process seem to indicate that Paul's judgment is sound and unbiased.

a. China Rural Technology Development Center in Dominance

Dominant control of the project's power resources by CRTDC, representing MoST, can be partially attributed to its superior position in the established bureaucratic system. County implementation agencies in this project are all established by County Science and Technology Bureaus, which are under direct command of MoST. Therefore, achieving a deliberation with CRTDC on an equal basis may require a much favorable allocation of the project's power resources. However, both fund allocation and overall project planning and evaluation are major responsibilities of CRTDC, which means county agencies can hardly function if they fail to meet the premises and values it sets.

Under such a power distribution, it is no surprise that county agencies also do not have an equal share of knowledge resources. During the project planning and implementation, CRTDC distributed its opinions through project documents and by holding conferences. In the headings of those documents, words like "guidelines," "criteria," and "planning" frequently appeared while "deliberation" and "discussion" rarely were seen. Additionally, all county project reports emphasized how local agencies implemented the project "in accordance to" the CRTDC guidelines. Conferences and project evaluations provide county agencies with chances for self-expression. However, the county agencies have no right to set the conference agenda, and limited power resources leave them at a disadvantage. Though project evaluation offers an opportunity for them to share their knowledge and values with CRTDC and UNDP, the evaluations do not cover management issues and thus deprive the county agencies of a chance for self-expression.

CRTDC is also in dominant control of the network resources. Years of cooperation with UNDP and national experts provide it with rich experiences in deliberation. Furthermore, its central position in the institutional framework allows it the sole right to hold workshops and meetings, in addition to sole access to the national consultant committee. Com-
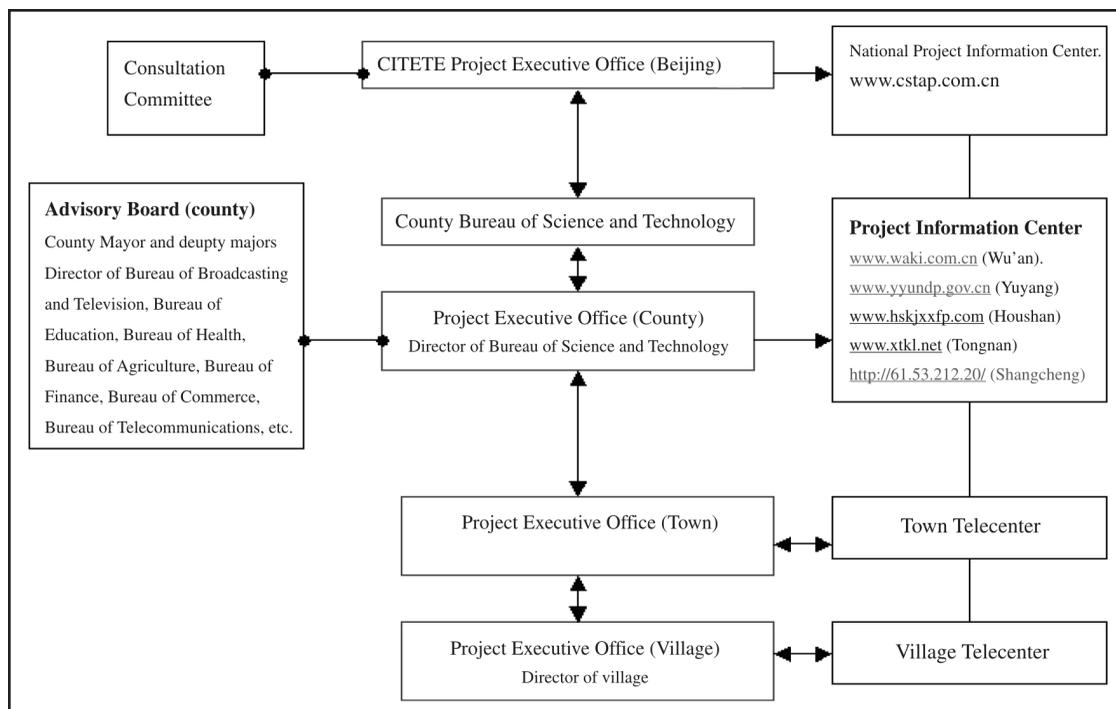
Figure 3. Institutional framework of the UNDP–MoST project (local level).

paratively, county agencies, receiving no management training from CRTDC or UNDP, can only play secondary roles in the collaboration. Even the limited exchange meetings among the agencies themselves are all initiated and organized by CRTDC.

b. Town/Village Work Teams at the Bottom of Hierarchy

Work teams at town and village telecenters are submitted to a similar but much more rigid institutional hierarchy which leaves them with the least control of resources (Figure 3). First, local pilot sites are all selected from the top down by county agencies, so town and village officials appointed by the county agency are subordinate to their county superiors. In practice, formulation of rules and regulations concerning telecenter construction and operation, ranging from the annually issued "Budgets and Implementation Details" to "Posters and Advocating Slogans" are all within the county agency's domain of power. Since local work teams are not included in the conferences or workshops held at the national level, their access to information generated from other stakeholders is limited to direct instructions from county agencies, either in written form or through county-level meetings. Though town and

village telecenters are linked to central and county Web sites, no forums or e-mails with deliberative functions are enabled in the network, and thus the Web site is a medium of policy instruction to grassroots agencies rather than a channel for two-way communication.

Such a continuity of institutional hierarchy brings striking efficiency to the project implementation. Experts from China Agricultural University and UNDP consultants are all amazed at the high speed of project implementation. After all of the guidelines and regulations were set and the project was launched, all of the telecenters were established and all of the executive agencies fully mobilized within 1 year (Ulrich, 2004; Wang, 2003). While all stakeholders celebrate the efficiency enabled by the institutional framework, few point out the risks of such a lack of sufficient institutional support for authentic dialogues. Although empowerment of county agencies is taken as an attempt to enable local stakeholders to participate in policy deliberation, lack of a more liberal distribution of resources prevents such efforts from being fully effective. In the policy-making process, local project executives, especially those at town and village levels, are comparatively ill-

informed participants who are subject to the paternalistic rule of their superiors. This lack of knowledge might easily give rise to a mutual misunderstanding, a miscalculation of self-capacities, and a misrepresentation of self-interests. During project implementation, for instance, local staff and executives on the one hand intentionally suppressed their desire for a pay raise or other forms of personal rewards because they did not believe their superiors would deem their requirements reasonable. CRTDC, on the other hand, found itself at a loss after some executives and staff members suddenly left for other more promising positions. Such miscommunication demonstrates how a lack of authentic dialogues in the decision-making process can negatively affect the project manageability and effectiveness.

Government Collaborative Institutions: Network-building Limited by Institutional Division

In the institutional framework at both national and local levels, the previously mentioned vertical structure is also complemented with a horizontal structure which mainly involves the establishment of a Consultative Committee on the national level and five County Advisory Boards on the local level. As stated in the project objectives, these supporting institutions are established to strengthen cross-sector coordination so the project can benefit "local governments at each level of the selected counties by enhancing their institutional capacity to harvest the potential of ICT" (UNDP, Project Document, 2001).

Consultative Committee

As stated in the project document, the Consultative Committee consisted of representative officials from the Ministry of Information Industry, Ministry of Education, Ministry of Agriculture, and Ministry of Health. However, no rules were set to specify its obligations and benefits, and no practice of the committee was mentioned in the project final reports (except that a brief memo was sent to stakeholders in those ministries at the end of the project implementation). During the interviews, the CRTDC office director and project directors in Yuyang and Wu'an counties all stated clearly that no ministries other than MoST were known to be involved, and the committee remained in a goodwill capacity on paper.

County Advisory Boards

The advisory board, headed by the county mayor, consists of directors of almost all bureaus in the local government system, ranging from telecommunication, broadcasting, agriculture, and commerce to education, health, forestry, and irrigation. Similar to the Consultative Committee, county advisory boards see no specific statements of their obligations and benefits written in the project planning and no evidence of their definition of the project, proposed interests, and deliberation with the executive agencies in the project reports. Actual involvement in the project is limited to bureaus such as telecommunication and broadcasting, which can provide direct technical support for the telecenter construction (e.g., providing on-demand programs on local T.V.-broadcast systems run by the project agency in Yuyang County in collaboration with the Bureau of Broadcasting). In most cases, collaboration with other agencies is based on person-to-person maneuvers or the mayor's instruction for upholding the local collective interest.

The establishment of the committee and advisory boards shows that the project planners recognize the various uses of telecenters and do believe in cross-sector collaboration. Such an effort should be celebrated as an institutional innovation, considering the severe sector divisions in the country's bureaucratic system. However, because of a deep-rooted suspicion of other bodies as potential competitors for power resources, both the executive agencies attached to MoST and agencies from other sectors in the committee and advisory boards feel reluctant to upgrade the network-building effort into participatory deliberation for fear that after considerable investment in the deliberation of time, energy, and resources, common understandings may not be reached. Thus, the institutional collaboration in this project is designed to be subject to geographic formula and personal leadership, and to a political influence model instead of a deliberative model. Although mobilization meetings are held to urge cross-sector collaboration, the failure to follow the rule of reciprocity, as argued by deliberative policy analysts, may easily result in a lack of incentives for marginalized institutions (Hajer & Wagenaar, 2003). In the case of the UNDP–MoST telecenter project, the fact that collaboration between the executive agencies with those in other sectors is based on personal relationships may serve to explain why the project implementation agency finds its former part-

ners reluctant to make further contributions once certain project administrators leave office.

Lack of complexity on a horizontal dimension naturally contributes to speed up project implementation by reducing the number of interests, and thus reducing the time spent on policy deliberation. However, the failure to integrate telecenter operations with information collection and dissemination for policy makers in other sectors, along with the failure to integrate this project with similar ICT for poverty alleviation tasks assigned by other ministries to their subordinates in the pilot counties, not only leads to repetitive construction and thus a waste of resources, but also imposes a cost to the project executive agencies. They are held as solely accountable for the project effectiveness and thus have to struggle in vain with their limited resources to sustain the telecenter operation.

Community Beneficiaries: Mass Mobilization Versus Public Deliberation

Deliberative policy analysts, as elaborated in previous sections of the article, take citizen participation as a major contribution to the legitimization of policy making and implementation. It is believed that participation in policy deliberation can broaden citizens' access to expert knowledge, build up their capacities to share local knowledge with experts, and thus generate their own meanings in the action. This participation is considered by deliberative policy analysts as a guarantee that project implementers will respond to local needs continuously and effectively. Such insight is also shared by many telecenter project designers, including those with the UNDP–MoST telecenter project, who are dedicated to generating grassroots participation as a complement to the lack of local NGOs in the institutional framework. However, distribution of resources enabled by the project institutional framework seems to follow a model of mass mobilization instead of participatory deliberation.

1. Knowledge Resources
Mass distribution of knowledge resources is a widely acknowledged strength of the project institutional framework. During the project implementation period, local implementation agencies have mobilized all resources in their hands to establish an information network by integrating modern ICT-facilitated

media such as Internet connections, television programs, and videocassette programs, along with various traditional communication media, such as lectures, pamphlets, magazines, newspapers, bulletin boards, and interpersonal communications (CRTDC, 2004, http://www.crtdc.org.cn/zx-8k/3-kjfp/xmbz.asp). With a huge amount of accessible information, villagers' awareness of the importance of ICT has been greatly raised. However, they remain passive recipients of information instead of participatory deliberators in the policy making process, because this top-down project publicity is affected by the following characteristics:

a. Provision of Selected Information
Information provided through the previously mentioned media includes, in order of prevalence, agricultural technology (90%), market prices (67%), health information (47%), news (39%), help with schoolwork (36%), job information (32%), and entertainment (17%) (Ulrich, 2004). Information on deliberation and results is either nonexistent or covers nothing but basic guidelines and instructions issued by the executive agencies.

b. One-way Communication
Major channels established for the generation of local knowledge include representative meetings held by county implementation offices; households contracted to county, town, and village executive officials; PRA surveys conducted by experts; and communication services enabled by Internet connections.

Compared with the traditional practice in rural China of policy publicity, which forces decisions upon villagers (Zhou & Wang, 2006), these policy innovations provide the villagers an outlet to communicate with decision makers. However, project planners and implementers are not taking a step bold enough to bring such practices to their full potential. Villager representatives are mostly selected in a top-down manner, and in most cases, their level of education is taken as a criterion. Thus, it is doubtful whether they can represent villagers with various backgrounds. Additionally, the practice of having an assigned number of households contracted to each leader in the implementation offices is a daring policy innovation. However, the leader's selection of the households and the villagers' obviously disadvantaged socioeconomic status may put the effectiveness and authentic nature of such a "one-to-one"

dialogue into question. Project evaluations do collect valuable information from the villagers. However, these surveys do not include an evaluation of project management, and survey results that reflect partial policy failures and unsatisfied demands of the villagers (Ulrich, 2004) are not released to the public and thus cannot hold the executives accountable or exert influence on future policy-making processes. Though Internet services have the potential to generate two-way communication, discussion forums and e-mail service, which are supposed to be key channels to facilitate interactive deliberation on new rules (Coglianese, 2003), these features are either underdeveloped or undeveloped. On the whole, although villagers are participating in searching and using information in the telecenters and make recommendations to the telecenter staff on content building, they are not empowered with sufficient knowledge resources and thus can hardly act as an equal partner of the executive offices in policy deliberation.

2. Power and Network Resources

The project institutional framework does not provide the villagers with the power to supervise budget allocation, policy making, and staff appointment. As previously discussed, channels for communicative actions with other stakeholders in the framework are not fully developed. As for communication with other villagers, in addition to informal interpersonal communication in the communities, a practice of "key households" is highly promoted by project executives to develop "opinion leaders." For example, the success of early adopters is widely publicized to offer incentives for the others to follow suit. Group participation, according to county project reports, is now being fostered. However, project final evaluation reports based on the UNDP survey seem to indicate that favorable treatments are offered to some of these households, and on average, poor households benefit least from the project (Ulrich, 2004). Since telecenter stories in the world seem to prove that opinion leaders foster participation (Roman & Colle, 2002), a more careful analysis should be made by the executive agency to see whether equal services should be provided, and more institutional support should be given to build up an active communication channel between the key households and the others to turn them into real opinion

leaders and make this practice as effective as possible.

In sum, mass mobilization in the project can be seen as the adoption of a political influence and social movement model, and it helps generate remarkable achievements, especially during the project implementation period. First, decisions are made quickly. It only took 8 months for leaders in Wu'an to participate in the project after hearing about it. Second, telecenter users' awareness of market information and agricultural knowledge increases. Most villagers are convinced during the project implementation that the project is beneficial to them, and organized activities like online job hunting bring immediate returns to many individuals (Ulrich, 2004; Wang, D., 2003; Wang et al., 2005). However, partial policy failures are also evident. The entrenched position of the political–administrative elite results in dubious policy assumptions. While reports released by county agencies all assume the complete satisfaction of the villagers, more than three fourths of respondents demand more training, more than half want more direct access to PCs, and nearly half say the centers' staff are not well-trained (Ulrich, 2004).

The interviews with project directors at both national and local levels reveal that project executives suspect most villagers are not educated enough to deliberate with experts about a project with such a strong technological nature. However, successful practices, such as the consensus conference developed by the Danish board of technology, the Resident Advisor practice adopted by telecenter projects in Ghana and Paraguay, and a range of deliberative projects and experiments in North Europe, all prove that citizens do have the relevant wisdom to be capable of more involvement in technical questions than is conventionally presumed (Proenza, 2001; Latchem & Walker, 2001; Colle, 2005). Failure to facilitate such involvement may leave the public unaware of a project's potentials and risks and unable to recognize its relevance to their interests. Therefore, once the initial enthusiasm of executive agencies in project advocacy fades away, the public may find no further incentives to actively use the telecenters, which erodes the very root of the project's effectiveness and sustainability.

Conclusion: Policy Recommendations

The above interpretation of the institutional framework of the UNDP–MoST telecenter projects seems to reveal an uneasy coexistence between a tentative move to deliberative collaboration and a continuous adoption of a traditional governance structure, which seeks top-down convincing, co-opting, and converting approaches in project planning and implementation. Reluctance of the project planners, that is the executive government agencies at all levels, to ensure a completely and truthfully participatory policy deliberation is understandable, if not excusable, because 1) in an era of dramatic social, economic, and political transformation, breaking away from the political tradition and promoting policy deliberation is a very demanding mission in China, where conflicts of interests are rampant in almost every aspect of life; and 2) such deliberation is time consuming and does not guarantee a final consensus.

However, it should be noted that the adoption of a deliberative policy-making approach can be indeed in the interest of government agencies. First, deliberative policy-making theory does not rule out government involvement. Instead, it takes participatory deliberation as a complement to institutional hierarchy and in many cases even calls for more government efforts to promote a higher network complexity and further local empowerment. Second, although participatory deliberation does not yield immediate returns, it can be far more effective over time in sustaining the traditionally emphasized efficiency, providing legitimacy for the project implementation, and thus promising executives lasting popular support.

As shown in the previous article sections, executives in this project have demonstrated a comparatively far insight in promoting the empowerment of local agencies, cross-sector collaboration, and grassroots participation. Many policy innovations made in this pilot project already claimed considerable achievements in exploring the possibility of ICT for poverty alleviation. However, problems emerging after project implementation seem to indicate that further steps should be taken to establish a project institutional framework with higher complexity, which can enable a more participatory deliberation and thus enhance the project manageability and ef-

fectiveness. Therefore, in light of current institutional capacities of the project executive agencies, the article concludes the analysis of the project institutional framework with the following policy recommendations:

1. Establish a private–public partnership by having government agencies and international organizations cover most of the project investment, provide training related to community development, and leave the rest of the investment and the technical skill training to the local business partner(s), such as cybercafés, as is done in the telecenter projects in Paraguay and South Africa. Fees can be charged for services provided by the telecenters.

2. Set up groups of resident advisors who represent villagers with various backgrounds. Free public applications for membership should be guaranteed. Technical experts can form a Board of Technology. Thus, the experts can act as facilitators to explain technical facts in a local language, and resident advisors can cross-question the experts and officials on decision making.

3. Limit the role of national agencies to facilitators and advocators and upgrade the roles of local agencies, especially those at the town and village levels, to project planners and executives.

4. Share project costs and benefits with government agencies in other sectors by merging similar projects carried out in the same region.

5. Fully develop the potential of ICT to facilitate two-way communication and provide the public with open access to policy-making information.

6. Finally, and most importantly, carry out management evaluations based on a reward–punishment mechanism to hold project executives responsible for the sustainable development of the project. ∎

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