WEB CENTERS FOR RURAL PNG: FOR SOCIOECONOMIC AND RURAL DEVELOPMENT

BY

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INTRODUCTION

The Internet is central to the network revolution that is transforming the way people interact all over the world, and the Net has taken many developing countries by storm. For example, the pacific region lags far behind. Only a small percentage of the population in this region use the Internet. The only country in the region with a high rate of usage is Australia followed by New Zealand.

A far more important challenge to the region is posed by the very nature of the new global economy:

i) market globalization,
ii) the rapidity and increasing speed with which decisions are taken, and
iii) the unremitting periodic reorganization of knowledge networks both within and outside corporations, governments and societies [Castells 2000].

In this new setting the danger of a greater and widening gap between rich and poor in the region is more serious than ever.

Economic prosperity, social stability and the very survival of democracy in many developing countries make it necessary that all citizens be able to:

i) have the opportunity to acquire and frequently update the knowledge they need to stay productive and compete on a labor market that is increasingly flexible and that, by offering short-term and half-time jobs requiring frequent renewal of qualifications, or requiring to develop new skills makes an increasing demand on individual initiative; and

ii) be prepared to participate as genuine citizens and feel themselves a part of a technologically sophisticated world instead of alienated from it.

The international community has a high interest in implementing a development strategy that would be in accord with the resource-poor situation of developing countries and marginal areas. This strategy recognizes the potential enhancement of the different capacities in low-income areas that a significant increase in education and skills development by having access to information via information Centers would enable those marginal areas “to produce wealth”. Therefore, the establishment of Rural Community Web Centers would provide that shared access to education and information to Rural and marginal areas.

I. ESTABLISHING THE CONCEPTUAL AND WORKING FRAMEWORK

1.1 The Basic Concept

About thirty different terms that are used to refer to various types of information and communication centers, (tele-centers) have been identified by Colle and Roman. Initially, the first tele-centers sprang up in the eighties in the Nordic countries, particularly in Denmark, as government projects to promote experimentation and learning with new information technologies by persons who would ordinarily have no access to them, farmers in particular.

The common feature is that of “shared premises where the public can access information and communication technologies” [Colle and Roman 1999, p. 1]. Let us focus on those centers whose primary purpose is to increase public access to education, (knowledge and skills development) through computer networks or via the Internet and to the services available through the Net. Two criteria that, a tele-center must meet are: i) it must give access to telecommunication services, and ii) it must be open to the public at large (that is, its target population must not be restricted to). Some authors define a tele-center as a location which facilitates and encourages the provision of a wide variety of public and private information-based goods and services, and education for the support of local economic and social development.

1.2 Impact through this Development

A center of information could potentially help break down some of the major barriers to development that are presently faced by low-income populations.

Therefore, the establishment of Community Web Centers via the use of computer networks and the Internet could potentially have an even greater impact on rural areas and their many marginalized and impoverished inhabitants.

The first step is to give the rural population access to educational Programs offered via computer networks and to the Internet through a Community Web Center. The final step presupposes that these educational study programs and/or services actually do enhance the wellbeing of the user and that of his family economically, socially or culturally.

It is essential to recognize that a center of information can be a powerful tool, but that in order to have an impact on peoples' lives it must be part of an integral strategy of educational, economic and rural development.

Furthermore, to enhance effectiveness, efforts to promote the development of centers of information, we need to identify centers of information’s models that are likely to survive beyond a pilot stage, as well as economically sensible formulas for their support.

1.3 Major desirable Features for the Rural Web Centers

Even if impact may be hard to assess, it is still possible to specify in advance criteria that a Community Web Center needs to meet if it is going to contribute to economic and social development, through study programs available for the rural population and then compare the available information with the degree to which different types of existing centers of information, are able to fulfill them.

Impact on Low-income Users

To improve the welfare of low income users, a Community Web Center must provide services that:

i) Will enable access to useful study programs designed to enhance or develop skills for the benefit of the rural population and provide access to the new information and communication technologies to a low income target population. It is not only important that most of the Center’s users be poor, it is also desirable that the centers assist persons living in extreme poverty or indigence or bereft of skills.

ii) are valued by the target group (rural people), otherwise it will fail to keep them as patrons for an enough period of time to effect a change in their lives, and

iii) will bring about concrete economic, social or cultural benefits and actually improve the living conditions of the marginalized population.

Sustainability

Currently the main challenge facing the development of centers of information is the uncertain sustainability of many of the experiences currently in different parts of the world. Qvortrup [1995] notes that about 70% of the first wave of centers of information set up in Europe failed in the first two years of operation.

The reasons for the failures were diverse, but financial difficulties and lack of a sustainable management model played a prominent role.

It is not essential that a Community Web Center be able to pay for itself so long as government is willing and able to shoulder part of its costs.

It has sometimes been suggested that it is unnecessary for the centers to be self-sustaining if they **are purposefully set up** to trigger socioeconomic development based on the knowledge economy [Fuchs 1999, Norton 2000]. From this point of view, any center of information need not last long if its establishment brings about enough self-sustaining economic activity based on communication and information and new educational methods that were not previously in use.

1.4 Type of Community Web Centers for Rural PNG

The **basic centers of information** that are common in other countries, mainly in urban areas, have fairly standard features. They consist of premises stocked with several computer terminals and simple furnishings consisting of chairs or classroom desks for users and regular desks or tables on which the terminals sit. The main service offered to the public is access to the Internet and often also to elementary software (word processing, spreadsheets, publishing).

Connection to the Internet is preferably over a dedicated 64 Kbps transmission line, but at small centers and in small towns the only option may be dial-up service at low transmission rates.

Starting from this basic definition, existing centers type differ in two main respects:

i) the way in which their management is organized, and
ii) the services offered in addition to a computer connected to the Internet. The main classification is usually based on the first of these two features owing to its crucial importance for sustainability.

Our proposal for the establishment of Community Web Centers in rural PNG, as information centers, is based on the potential the centers have to help break down some of the largest barriers to development that are presently faced by the low-income population, particularly in marginal rural areas. Initially the preferred type would be based on the existing model for a University type and/or school type of centers of information. In a later phase these Community Web Centers would may change to follow the commercial type integrated to the university or school type, in such a way that they may be considered as multipurpose information centers, as described below.

1.4.1 Brief description of different types of Centers of information

The University Type of Center of Information

This is the type of Center of information we initially propose in establishing Community Web Centers in Rural PNG. We propose to install these Community Centers to serve the general public with minimum charge for their services.

Usually the universities have on their premises laboratory classrooms equipped with computers, which may not, for the most part be connected to the Internet. These facilities

could be complemented by *public centers of information*, which are intended primarily for students but could also be open to the public and attract a diverse clientele.

These university public centers (Community Web Centers) would be among the largest in terms of the numbers of users they could accommodate, and would be closely linked to instructional programs, especially designed to enhance knowledge and skills for the rural population and would provide connections of good quality and modern equipment and facilitate the performance of related services, especially training courses and the preparation of content for the Internet.

Their principal but not sole customers will be precisely the young people that are technically skilled and prepared to learn and assimilate new things. Despite these advantages, the presence of a government-subsidized institution may posses a potential problem. In its desire to keep these large centers full, by sometimes offering heavy discounts could frustrate the efforts of neighboring independent, unsubsidized centers of information if some are privately established. The problem is not serious at the university public centers if located on campuses or in remote areas.

The School Type of Centers of information

The best-known school type of center of information (tele-center), is the Leo Ussak elementary school in the Canadian Arctic [Belsey, Tulloch, *et al.*] with a student body of 560 students. The information technology program was set up by an enthusiastic teacher, Bill Belsey, who set out to get students involved. He ended up improving the self-esteem of students and their parents in one of the most remote regions and with a most hostile climate in the world. The venture began as a school computer course in 1988 and expanded gradually.

The [Igalaaq Access Center] in Canada was established in 1994 with an initial fund of US$100,000 raised by awaking the interest of parents and adults in the community.

It is operated after school hours by a team of 30 volunteer workers who service the hardware and assist the students. More than 400 people in Rankin Inlet (over 20% of the total population) have e-mail accounts through the center. There is no charge for visits, and the Center depends mainly on contributions from the Canadian government (primarily the Community Access Program and grants from local private business). Belsey expects that the center will eventually have to charge for its services, as it is constantly struggling to cover costs.

1.4.2 Potentialities of Different Web Centers Models

The university model has been implemented in Peru, but attempts have been made in other countries. Since schools are more numerous than universities and have closer contact with the community, the school model is potentially more replicable and promises a greater impact on the target group. In practice, however, the school model is not much in evidence around the world. School systems are not prepared to handle resources, or to provide and charge for services to the public. It is interesting that one of the current experiments with school centers of information is taking place in China - where the rule is for the schools to generate their own operating resources by running businesses.

As is done by university Centers in Peru, school Centers could be established in many countries, by opening their doors to the public and charging for their services to keep the center going. In some cases, this may require changes in the laws or administrative rules to enable such commercial operations. Since schools are far more numerous and widely scattered than universities, school Centers could achieve greater penetration among the poor.

The commercial model offers excellent replicability, full self-sustainability (as a system, though always subject to the occasional failure of individual enterprises), but the evidence is that, though it exerts a positive impact on the target group, that impact is limited.

The multipurpose Center model is an effort to combine many diverse services in an attempt to generate enough income to cover the higher costs of operating in the countryside. The evidence available on whether this is possible in practice is not favorable. As an experimental effort to address the rural challenge the multipurpose Center is a worthy undertaking.

1.5 Investment Opportunities and Recommendations

Education

Centers of information could be good supplement to formal education programs that have a long-term development perspective. International organizations could support initiatives to modernize formal education that include:

i) Updating school equipment and connecting schools to a computer network or the Internet;
ii) Developing educational content and curricula that make effective use of Information and Communication Technologies;
iii) Technological training of teachers and providing teachers with computers and Internet connectivity that they can use at home to improve their own proficiency;
iv) School Centers of information (web-centers), in communities, at their request;
v) Regional technical cooperation to support virtual assistance
    i) networks and web-center initiatives;
vi) Agricultural development projects -- development of online.
    i) agribusiness information systems and web-centers to promote:
    ii) increased access to production information;
vii) Strategic partnerships to promote special web-center initiatives: Youth Programs

1.5.1 The principal recommendations are the following:

Role of Community Centers of Information:

i) Any type of Center of information can be a powerful instrument but to be effective it must be part of a comprehensive economic and rural development strategy that includes investment in complementary sectors. Institutional reforms must also be instituted to broaden the educational and work opportunities as well as social and economic participation of traditionally excluded or marginalized sectors of the population.

Training:

ii) Information and Communication Technologies training interventions should be geared primarily towards young people. The young adapt most quickly and easily and is most skilled at using the new technologies. Since young people are a large group in the region, with the longest productive horizon ahead of them, there is a high return on investments aimed at improving their productive capacity. The starting point should be the strengthening of the formal education system, so that it incorporates the effective use of the new technologies. Teacher training is often a critical determinant of impact on youngsters. Community Web Centers can be an important complement to formal education reform, providing support to students and teachers after school hours and increasing Internet access for teachers, parents, recent graduates and the community at large.

Virtual Networks:

iii) Content and Virtual Networks. Priority must be given to launching Web Pages that offer public services online, aimed primarily at meeting the educational, economic and social needs of the low-income population, including educational portals using simple language that broaden labor and self-employment opportunities.

iv) Public investment in content does not imply public administration. The combination of State investment with private sector development of public information and virtual service systems has as a side advantage the stimulus to the development of an indigenous Information and Communications Technology sector, especially if contracts are awarded to private entities on a merit basis.

v) A link between a web-center and content development is not always essential. One advantage of the Internet is precisely that it eliminates physical space as a barrier, and private or State institutions can create useful networks or sites independently of web-center development. For example, to disseminate technical or market information for small and medium-sized enterprises, and the agricultural sector, it is more important to have a virtual center; and for virtual networks to be established among companies, cooperatives, and other institutions that already have computers or are in a position to acquire them.

vi) It is the community that should take the initiative and be responsible for maintaining community information systems. The State and the philanthropic sector can help launch these initiatives and even develop portals that enhance the presence in the web of low income users and small towns and businesses and make the task more user-friendly and economical.

vii) Government policies are needed to strengthen the legal and institutional framework to foster the development of sites and Internet solutions that facilitate e-commerce, particularly by small and micro-entrepreneurs.

viii) It is important for the State and society to welcome and encourage virtual activism, as a means of empowering low-income populations to address their own problems constructively and effectively. The main contribution of the Rural Community Web Centers might well be an increase in skillful individuals and an increase in communications and options for interaction and social coordination. Support programs can promote virtual interaction and enhanced productivity, by sponsoring face-to-face meetings between administrators and users with similar problems and interests. They can also finance the development of low-cost tools (software) in the public domain to facilitate virtual interaction and joint organizational work over the Internet.

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