INFORMATION TECHNOLOGY AS A TOOL FOR REGIONAL DEVELOPMENT IN MONGOLIA; ISSUES, PROBLEMS, NEEDS AND CHALLENGES

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ABSTRACT

This paper raises some of the issues and problems involved in trying to introduce Information Technology into the regional areas of a Developing Country such as Mongolia. It includes a discussion as to what may be needed to introduce and use Information Technology in the rural areas of Mongolia. The paper concludes by raising some challenges to the international community of scientific experts in this field on how to develop appropriate approaches to introducing Information Technology into the rural areas of an under-developed country such as Mongolia. The paper is illustrated by several local examples.

INTRODUCTION

Mongolia is a land locked country located in the northern part of the central Asian plateau between Russia and China. The total area of Mongolia is 1,566,500 sq.klm, making it the sixth largest country in Asia and the 18th in the world. The country is divided into three principal topographic zones: mountains, with the three largest ranges located in the north and west, the intermountain basins, and the steppe which includes the desert areas of the Gobi located in the southern-most part of Mongolia. The average attitude of the Mongolian territory is 1580 m above sea level. Mongolia has a population of only 2,407 million, over 40 percent of who are under the age of 16. Average population density is 1.4 persons per square klm, which means that Mongolia is one of the most sparsely inhabited nations on Earth. It is one of the least developed countries in Asia. More than 60 percent of its population reside in towns and settlements, including 26.4 percent in the capital city of Ulaanbaatar. The regional urban centers in the provinces and smaller local communities are very isolated, and a large part of the rural population is still nomadic. 15 percent of rural people, some 136,000 families, live in a semi-nomadic condition. 97% of the population over the age of 9 are literate. In 2000 Mongolia had 809.0 thousand employed persons. Labour force participation rate was 68.5 percent.

Although in size and population it is somewhat similar to Queensland, the distribution of the population, the level of economic development and road/rail infrastructure is very different. Figure 1 provides a map of Mongolia, indicating the provinces, provincial capitals. Tables 1 and 2 depict the population size of the main rural centers in Mongolia.
Figure 1. Map of Mongolia with provincial boundaries, main cities and towns

<table>
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<th>Indicators</th>
<th>1990</th>
<th>1995</th>
<th>1999</th>
<th>2000</th>
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<tr>
<td>Resident population, by sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2097.7</td>
<td>2251.3</td>
<td>2373.5</td>
<td>2407.5</td>
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<tr>
<td>Of which: Male</td>
<td>1045.8</td>
<td>1118.5</td>
<td>1178.0</td>
<td>1192.4</td>
</tr>
<tr>
<td>Female</td>
<td>1051.9</td>
<td>1132.8</td>
<td>1195.5</td>
<td>1215.1</td>
</tr>
<tr>
<td>Urban and rural population</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>1195.7</td>
<td>1168.4</td>
<td>1390.5</td>
<td>1377.0</td>
</tr>
<tr>
<td>Of which: Ulaanbaatar</td>
<td>543.6</td>
<td>645.8</td>
<td>760.1</td>
<td>786.5</td>
</tr>
<tr>
<td>Rural</td>
<td>902.0</td>
<td>1082.9</td>
<td>983.0</td>
<td>1030.5</td>
</tr>
</tbody>
</table>

Table 1. Resident population, at the end of the year.
ISSUES and PROBLEMS

Providing a remote rural community with access to Information Technology via the Internet can be a challenge at the best of times. If, as is the case in a poor Developing Country such as Mongolia, the intended target audience does not have access to telephones or any of the other traditional telecommunications infrastructures, the challenge becomes even greater. This means that in fact there are but a few telecentres in the rural communities. Whilst in the major cities, with a well-developed telecommunications infrastructure the solution to providing such services is simple-install a modem, open an account with an Internet Service Provider and one is “on-line”.

In Mongolia’s remote rural areas, with largely a nomadic population, far removed urban development and telecommunications infrastructure, this situation is very different. The main problems are:

1. The vast majority of the rural population do not have telephones, nor regular access to telephones. In the absence of public transport in the country side, it is not convenient to ride one’s horse to town to make a telephone call.

2. Although mobile phone coverage is available in the larger urban centers, cellular coverage is very patchy. Due to the high cost of ownership, it is not an option for most of the local inhabitants, and it exists mainly to serve the few business men and tourists.
3. High bandwidth services such as ISDN are not available.
4. Lack of trained personnel.
5. Severe lack of funds for the required hardware to set up required telecentres and the recurring monthly running costs and maintenance.
6. Lack of on-line resources such as teaching materials in Mongolian language.

NEEDS

This section discusses what may be needed to introduce and use Information Technology in the remote rural areas of Mongolia. The potential applications of Information Technology are numerous. In Mongolia there is a large need for:

- Local community development
- Environmental awareness (especially informing the nomadic herdsmen on issues such as the effects of overgrazing such as land degradation, desertification, erosion, etc.)
- Community health services
- Eco-tourism. During the past few years eco-tourism has become an important means of sustainable rural development in the countryside, and could provide the funds for financing the establishment of telecentres in remote areas of the country.

Thus the main reason for introducing Information and Communications Technology is to facilitate access to opportunities and information. Of course, one of the biggest hurdles that will need to be overcome to achieve this is related to community support. A participatory approach should be used, to achieve the full buy-in and understanding of the rural communities, in order to obtain their cooperation and support. It is important to be realistic about what can and cannot be achieved with the introduction of Community Informatics. The technology should not be “oversold”.

Assuming the required funds were available to set up the technical resources and infrastructure, there will be a big need first of all to train a pool of specialists and teachers in the technology and allow them to prepare relevant training materials. Rather than start this development from scratch, it is hoped that some of the participants at this Conference will be willing to share their teaching resources. This would enable us to come up to speed much faster as then we will only have to translate it into Mongolian and add local content. By training teachers in the utilization of IT in education, the technology can be introduced into rural schools, and a professional network could be established to maintain the services provided and act as local support groups. This aspect of technical support should not be underestimated. Because of the vast distances involved, it is not possible to “jump in the car” and go to the site when something goes wrong. As Ronel Smith (2000) experienced in the case study she carried out in a remote town in South Africa, it is important to have a person on site that is able to do at least first line support. Hence the software and hardware configuration of such isolated telecentres must be extremely robust and able to stand up to the rigorous of rural life.

DISCUSSION AND CONCLUSIONS

Having raised some of the major problems facing a country like Mongolia in trying to introduce Information and Communication Technology into remote rural areas and having described some of the needs, this section proposes some possible steps that could be taken to improve the situation.

Firstly, the Department of Geography and Tourism of the National University of Mongolia proposes to collect all relevant background documents, case-studies and
experiences of successful applications and approaches to introducing IT into rural communities. This ITiRA Conference will be a first step in this process. Subsequently we would set up a pilot project in Ulaanbaatar and some other larger cities (e.g. provincial capitals), as here the necessary infrastructure is available. The teaching materials we manage to obtain would be translated to Mongolian and we would add local content. The first theme we would select will be eco-tourism, as this is a major priority of our Government. Furthermore this application of IT may generate enough revenues to make a service in rural areas self-sustainable financially. Our social geographers would also add content and provide services in fields such as rural health and start an awareness campaign to persuade rural community leaders to “buy-in” to such a new service.

The ITiRA Conference track entitled “IT for Developing Countries and Indigenous People” stated that: “…inadequate infrastructure, low levels of education and awareness, inhibiting policies and regulations, high costs and unsuitable content, means that developing countries are struggling to find workable modalities for equal participation in the emerging global knowledge economy”. It further stated that “self-directed online resources for indigenous learners, rural citizens, and educators must provide the best available online resources, suitable for the literacy levels of most learners, to deliver the highest possible levels of benefit with the least amount of time invested”.

As I have shown in this paper, this situation is very much the case in Mongolia. We urgently need support from the experts and specialists in this field attending this Conference to start to make this happen in Mongolia. I sincerely hope several of you will be willing to develop a joint project with our University to introduce IT into the rural areas of our country.

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BIBLIOGRAPHY

