Draft Report on Content Development Challenges

The ultimate challenge to content development is to meet and fulfill varied information needs of farmers/nomads. Even the remote places like TAR is encountering a continuously transition stage, both urban and rural economy are changing in a fast pace. Agriculture is changing from traditionally subsistence and self-sufficient to market-driven in order to increase rural income and improve rural livelihoods. Not only improved technologies for local traditional farming practices, but new and advanced technologies and even new varieties, new crops being introduced into agricultural practice in TAR in order to take advantages of market. Other factors that affect farming, such as climate change leads to vary in temperature and precipitation have posed new challenge for pest management and more, all suggested continuous technology advancement are needed. Up-to-date information thus becomes fundamental to content development for agricultural and rural development. Therefore, change management becomes a crucial factor for the web content development management for fulfill the changing needs of the fast development that is occurring in the rooftop of the earth.

There are several challenges to fulfill the information needs of agricultural and rural development, the Constraints of Information Resource, Lack of Technologies that are effective for the content development in Tibetan Language, and Building Capacity for Content Development in Tibetan Language.

1. Constraints of Information Resource

a) Lack of awareness of information resource management

Just as other parts of the world, the social and economic development is unbalanced throughout the plateau. The knowledge and awareness of information resource varies from institute to institute, urban to rural. Some sources of public information are not aware of the value of the information it posses, and some keep information that are so valuable to public but useless to itself so strictly as confidential, and do not aware of the importance of information sharing. In both cases, there are lacks of awareness of information resource management.

It is hard to get consensus among some important should-be public information sources for make the information they possessed accessible publicly due to lack of awareness of information resources management, even there is no obvious reason anyone will be able to benefit directly from keep public information in drawers. Even some information centers are willing to share their resources and does hope contribute to fulfill public's information needs, but in most cases there just don't have a functional information resource management system exist that make its information available for sharing.

Some very valuable information resources are lost due to lack of information resource management awareness.

b) incompatibility of existed digital information resources,

Both the application software and language platform which meet the National Standards has not been widely recognized and not been used. There are several software products been used since the middle of 1990s, in TAR as well as other Tibetan community, of which including several Tibetan input systems and different fonts. Different institutes and organizations that interested to alive the Digital age of Tibetan language used different software to transform Tibetan text from paper into digital, at the very beginning people even have to store Tibetan Text by photos and pictures. Thus the digital resources available online at this moment are in different types and are very much incompatible to each others.

The coding systems of the existing Tibetan word processing software being used are different and not all of them are following the National Standards for Tibetan. The fonts are different and are difficult for automatic transform from one font into another by software. This lead into a difficult situation that the content developers either have to take care of pages that using various of fonts which are incompatible and means extra investment, or discard these pages of content and have to retype all of them. Adequate technical investment is needed for overcoming these difficulties into opportunity for standardizing the content development in Tibetan which will benefit more people to a long-term perspective.

2. Lack of Technologies that are effective for the content development in Tibetan Language

Optical Character Recognition and Text-To-Speech technology are in the most needed list for Content Development in Tibetan Language.

a) Optical Character Recognition Technology

Most of the available contents in Tibetan are printed, and at this context it is going to take not only too much time for typing but also is facing the scarcity of capable people for word processing of Tibetan. For better serve to rural people's information needs, effective digitization technologies and tools of transforming those paper materials into digits are long being expected. Optical Character Recognition (OCR) of Tibetan is on the top of the list of the most needed technologies and tools. Till now there is not OCR software for Tibetan available in the market, which has greatly deferred the progress for computerization for the whole Tibetan society.

b) Text-To-Speech technology

The illiteracy rate for the available rural labor force is above 83%. Though under the past half century the government paid great effort s for improve the education service to the rural areas, but rarely the young students who received higher education going back to farmland. The situation is worsen to the nomads areas due to it is cost even more for provide social service including education to the most population due to the constant movement that ingenerated. The total farming population may decreased due to the evitable urbanization trends wiping through China, but it is hardly to expect the overall education level or the farming population to be advanced in a promising period of time. The reality is that most of the farming population can neither communicate in Mandarin nor even write and read materials in Tibetan. The most favorable media for content distribution is by tongue.

In order to effective fulfill the information needs for local farmers/nomads, either have to record the needed content as audio clip/files, or use Text-To-Speech (TTS) technology to transfer the ready-text content in Tibetan into tongue. There is not Tibetan-TTS available in the market and which posed a great challenge for content development for rural information service, all the text-content have to be read out by people and recorded as audio clips.

There are also other technical challenges, such as

c) software for transforming the Tibetan text from one font to another in order to take full advantage of the existing digital resource,

d) proper techniques for connecting PC with Radio to build the community scale PC-to-Radio system which can directly broadcasting the audio contents (either the recorded audio-clips or by utilize TTS) in a PC (stored or get from the content providing website through internet).

3. Building Capacity for Content Development in Tibetan Language

There might be already effective and efficient technologies and tools exist somewhere to meet the challenges we are now facing in the content development in Tibetan.

There are two capacity constraints for content development in Tibetan Language. First, the number of people who can use the new national-standard-based word processing software system for content development in Tibetan language is inadequate compare to real needs. Second, the competence for content developer is poor for technology integration of content development in Tibet language. As well, cartoons and comics

a) Word Processing for Tibet Language

The human resource for word processing in Tibetan Language is in shortage in different levels, from the government offices to research and education organizations, from public institutes to private entities. There is a need to build up a mass of human resource for basic word processing in Tibetan language.

Not only the application of the open-sourced Tibetan Word Processing software that based on national-standard will be extended, but also the compatibility of the content is going to be developed in the future will be ensured through the extension of the national-standard software. This also will form a concrete foundation for a network for content resource sharing.

b) Content Development Technologies Integration

Obviously, the real content is the foremost factor which decides the value of the content being developed. But, the utility of the content also determined by the forms and channels that content is being distributed. Thus, the content development itself cannot be separated from a larger context started from the information needs till the fulfillment of the needs. Variety of technologies and tools are available for the whole process and are needed to be carefully (chosen and) integrated depend upon the real situation.

There are several content developers are now working in different areas of information in TAR who are engaged in content development in Tibetan language. But all of them are public funded institutes and their wages is not competitive to the capable personals compare to other high income companies and business entities. And it is also difficult for these Tibetan Content Developers to get prompt and adequate support that is convenient and affordable. The core staffs of all those content developers are not familiar with IT technologies and tools. There is a need to select and train the potential staffs of these content developers that they will be able to chose and integrate technologies and tools available much appropriately.