CHAPTER 5

Conclusion and Suggestion

This research aimed to study the community data usage requirement which led to the development of community data management system as part of the community data system management process model by digital community center and citizen involvement. The conclusion and suggestion of this study is shown as follows:

Conclusion

1. Community data usage requirement

From the community data usage requirement survey, 18 members of community data working group from Mae Ku subdistrict and Phra That Pha Daeng subdistrict required the following data at very high level of usage requirement: 1) water sources 2) history of the community 3) arts and cultural and tourism 4) natural resources and environment 5) community's general information 6) agricultural 7) health care. Following data were given at high level of usage requirement (sorted in descending order): 1) other information such as village presentation and etc. 2) communication process 3) economic information 4) political information 5) Social information 6) public hazard 7) education 8) strength of the community 9) infrastructure and services. Furthermore, the community data working groups

required additional data such as cadmium contamination, value of cadmium accumulation, other documents related to any study about Mae Tao basin, data about cadmium rehabilitation, protection and reparation in the area, environmental protection zoning, other community development and training. These required data were rearranged into the questionnaire used for survey the community data requirement from public perspective. There were 19 data groups in the improved questionnaire.

The community data usage requirement from public's perspective was surveyed by using the improved questionnaire. The results of the survey, which was conducted on 400 samples in Mae Ku subdistrict and Phra That Pha Daeng subdistrict, showed that most data were given at very high level of usage requirement. Only other data group, which was about the optional data of community, was given at high level of usage requirement.

2. Data selection for the data management system development process

In order to select the data for the community data management system development process, community data working groups decided to use the surveyed data that was given at very high level of usage requirement from both community data working groups' perspective and public's perspective. The additional required data also consisted of the data that was suggested by the community data working groups from open-ended question. The selected data consisted of 14 data groups: 1) water resources, 2) community history, 3) culture and tourist, 4) natural resources and environment, 5) general information, 6) agriculture, 7) public health, 8) public hazard, 9) levels of cadmium contamination in soil, 10) levels of cadmium contamination in the bodies of community members, 11) information and research reports about the

communities in Mae Tao basin, 12) information about rehabilitation, prevention, and solution of cadmium contamination in the area, 13) information and news about establishing environment protection area, and 14) information about training development in the area

3. Existing data and data source

To collect the existing data, which related to data usage requirement, the focus group was conducted on 18 people of community data working groups, 4 operators/administrators of digital community center. The findings indicated that the existing data was grouped into 2 groups, the data from community data working groups and the data from local administrative organization. The first group of data was about the problem of Mae Tao basin. Other data group was obtained from TCNAP which was statistic data that could be categorized into 9 subgroups of data. However, other 4 groups of required data (water resources, levels of cadmium contamination in soil, levels of cadmium contamination in the bodies of community members, community development and training) did not exist in any group of this study. In this study, Social Welfare Department could be the TCNAP's data supporter.

4. Community data management system and IT infrastructure supporter

To define the features of community data management system, focus group was conducted on 25 participants. The results showed that the required system features consisted of: 1) user manager for managing user account and user permission 2) search engine 3) the system must be able to import data from Excel files 4) the system must be compatible for various types of files, such as document files, photo, and video, and 5) user can access to the system through the internet.

Use Case Diagram and Class Diagram were used to explain relationship between users and the community data management system. The Use Case Diagram consisted of 2 part, user and operator of the Digital Community Center.

Class Diagram of Social Welfare's data system consisted of 30 classes and Class Diagram of community data working group's data system consisted of 7 classes.

Community data management system, a tool to manage the community's data, was designed as a responsive web application running on NGINX web server. MariaDB was used as database management system software. Yii2 Framework was employed to develop the community data management system used for manage the community data from TCNAP. This system could import data, which were Excel files, into the system. Joomla! Framework was employed to develop the community data management system used for manage the community data from community data working group. Model-View-Controller was employed for coding architecture.

To deploy the developed system, the minimum software and hardware requirements consisted of: 1) operating system that supported NGINX, MariaDB and PHP7, 2) the internet connection for the web server running data management system, and 3) server host that must be compatible with all required software and should has good performance and stability.

To analyze the readiness of the Digital Community Center to serve the community data management system, SWOT analysis of the Digital Community Center in the study area was conducted. The result showed that both centers lack of IT infrastructure to handle the minimum software and hardware as mention above. However, the Digital Community Center on the border of Tak province, Kamphaeng

Phet Rajabhat University Mae Sot could provide all required resources support to both centers.

To evaluate user's satisfaction, the questionnaire was conducted on 18 community data working group members and 4 operators/administrators from Digital Community Center. The findings indicated that the satisfaction with content and the satisfaction with design were high level. The satisfaction with the benefit from use and overall satisfaction from users were in high level as well.

5. The model of community data system management process by digital community center and citizen involvement

To synthesize the model of community data system management process by digital community center and citizen involvement, all results from previous research step, ITIL Lite framework concept, and focus group were used to analyze and synthesis the components of the model. In this study, community data and IT infrastructure were defined as IT assets. The operators of Digital Community Center were defined as service/helpdesk in ITIL Lite framework concept. They had a major role for facilitating the single-point-service for the people to submitting request for entering data to the system. Data supporter and IT infrastructure supporter were defined as outsources. The community data which impacted to the change of IT infrastructure, such as require new software module or require more IT infrastructure, should be handled by change management process. Change management board consisted of operator and administrator of Digital Community Center, and the member of community data working group. They had a major role for change decision making. Request fulfillment process was used to handle the community data manipulation which did not impact to the change of IT infrastructure.

To review the synthesized model, focus group were conducted on 29 participants including expert in information technology, expert in community development, and members of leader group network of Digital Community Center in northern of Thailand. The final model consisted of 9 major components, 1) system user, 2) change management board, 3) service operator, 4) IT resource supporter, 5) data supporter, 6) community data, 7) IT infrastructure, 8) data management process, and 9) facilitator.

Suggestion

This research had the following suggestions for anyone that may be interested to study or research related to this subject as follows:

1. This research aimed to create the guideline process of managing data by the participation of Digital Community Center and citizen in the community. The future research should aim to study about the process improvement or the model evaluation.

2. The community data management system should be disseminate to people in community.

3. More information from various agencies should be added.

4. The community data management system should be additionally displayed the data in form of GIS.

5. Organizational affiliation of Digital Community Center should concretely set up the formal data committee by involvement of citizen in community.

Research Contribution

1. Digital Community Center could serve a new service that met the usage requirement of user in community.

2. Citizen in community realized an importance of Digital Community Center.

3. Citizen in community could use the community data to solve their problems.

4. Public and private sectors could use the community data to develop the community.

5. The model could be used as a guideline for other Digital Community Center.