Chapter 6
3rd Method
Case Studies of Cognitive Knowledge Management System

6.1 Expand the Model Concept Beyond the Cluster Framework

The Cognitive Knowledge Model was proposed as a new paradigm development in competitiveness strategy to facilitate as an alternative mechanism for Cluster Development Agents (CDA) in cluster initiation. It was developed an outside looking in from the observation discovery. Hence, this model can be extended onto the other types of chronic complex situations particularly the situations involved long standing multiple and diversified objectives i.e. social wellbeing, business profitable which is usually the cross over between private and pubic initiations i.e. Poverty Reduction and other types of similar criteria. These projects usually characterized as chronic and unpredictable outcome since they are based on the very complex almost chaos externalities due to the nature of economic development with social implication for social benefits. More common similarity of these initiations are the chronically nature with near infinite factors. So, the model proposed using the extreme Bi-polar and Cynefin Frameworks can also be applied into these types of initiations to reduce the complexity of situation. The following are some of examples of the model in which later can be developed into Knowledge Management System (KMS) based on cognitive knowledge approaches. And, the results of these types of KMS may be extended into more general models and applications in the future.

#### 6.1.1 Modeling for community based development

Poverty Reduction and community sustainability are one of the long standing dilemmas for Thailand and all developing countries for many decades. It roots from economically issues but rapidly expanded into many insufficiency and inequality of the social encumbrances.

Thai Government, for example, is using both direct and indirect poverty reduction schemes to address these issues for the past few decades similar to the cluster and competitiveness model address the issues of cluster induction. It is endlessly search for the solution which may never be able to find. Again, this is due to a large numbers of the uncontrollable externalities. Using the dynamic model as the framework, the scope of boundary of poverty reduction can be strategized in the following guideline

6.1.1.1 One-Village-One-Product Framework (OTOP).

OTOP is grass root economic framework adopted from the Japanese self sustainability local economic model. The OTOP model focuses on

balancing between the economical developments with the local community
sustainability and innovation induction (Figures 6.1

Figures 6.1 OTOP Adopted Framework
Source: Tamprasirt, 2004
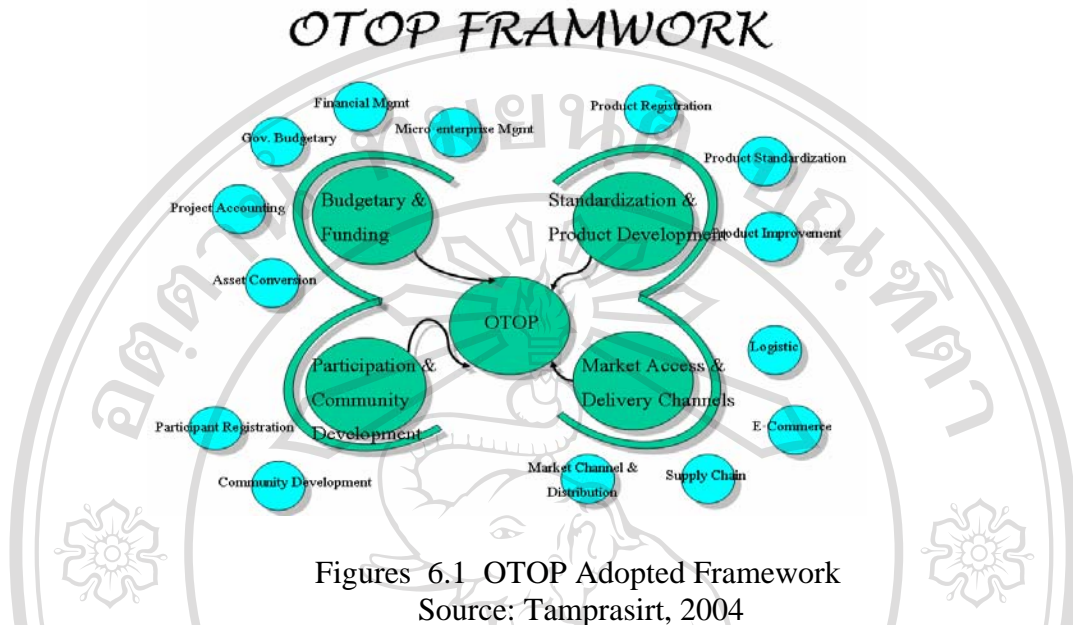
With OTOP social dimension framework (Figures 6.2), the local
community sustainability focuses on three essential social factors:

1. Creativity
Local Community must be creative and thinking out off
the box in order to create unique and/or value added products and services. Creativity,
local wisdom and Innovative Ideas are the key success criteria of OTOP.
2. Community Leadership
Leadership in the senses of self-motivation is necessity
factors for entrepreneurial and creativity required for community based development
particularly the uplifting the rural and distress areas.
3. Participation
Participation from community is essential to stimulate
the community-wide development. Within OTOP framework, helping themselves and
helping each other are the other essential factors which must be working together in
parallel.
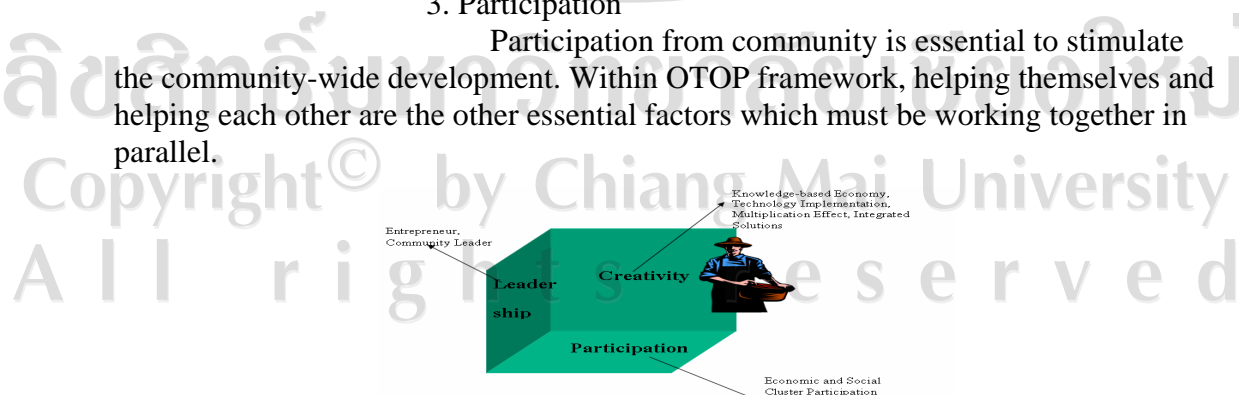
Figures 6.2 OTOP Social Dimension
Source: Tamprasirt, 2004

Products and Services from OTOP scheme were developed within the following guidelines (Figures 6.3). It is again contain the social dimension combined with "semi manufacturing" process to ensure community capability to handle the product quality and reproduction effectively which these are the basic principle of industrialization. In order to ensure the global market access for the local community products and services
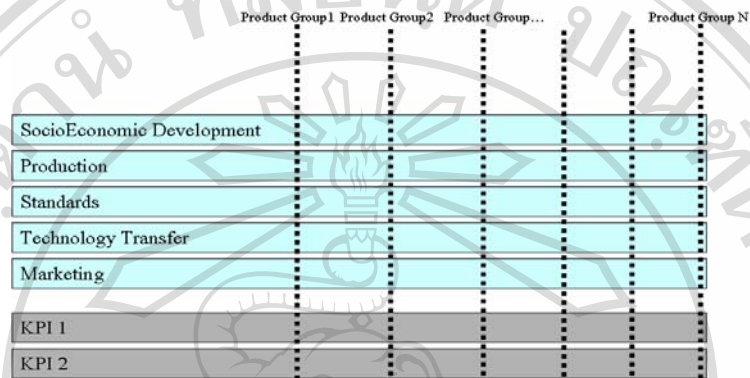
Figures 6.3 OTOP Product Development Schemes
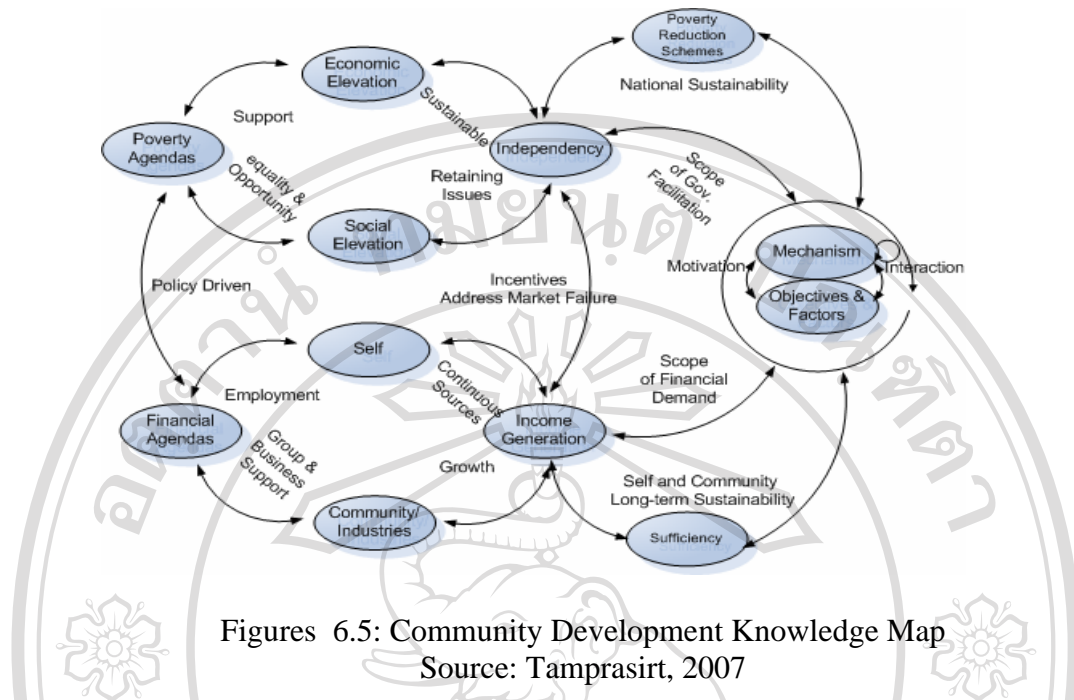Source: Tamprasirt, 2004

6.1.1.2 Villager Fund

Thailand consists of 70,000 villages with 75 provinces divided into four sub-regions with exception of Bangkok Metropolitan areas. Over 60% of population of Thailand used to be farmers and they were drastically turned to unskilled labor force workers for the manufacturing in the past few decades. Currently, there are over 13 Million unskilled labor forces converted from their original farm lands and fluctuated into metropolitan areas working for their survival. Regardless of their work and carrier situations, most of villagers are repeatedly over-debt. Over the years with countless administrative, Royal Thai Government tried to resolve these long-standing issues with various scheme tried to draw these people back to their homeland hoping to solve the income imbalance as well as create the distributed wealth distribution across the countries particularly in the eastern part of Thailand which have the most migration to the capital of Thailand. The following is one of another example of the social and economic programs developed in the recent years tried to overcome these issues. This program is developed in 2002 and spanned over 6 years before the program was creatd into another initiation. This framework was tried to establish the direct assistance to improve the grass root communities both in social and economic improvement. This framework was intended to provide financial funds, social development tools, life-long learning and knowledge creation and community sustainability (Figures 6.4).
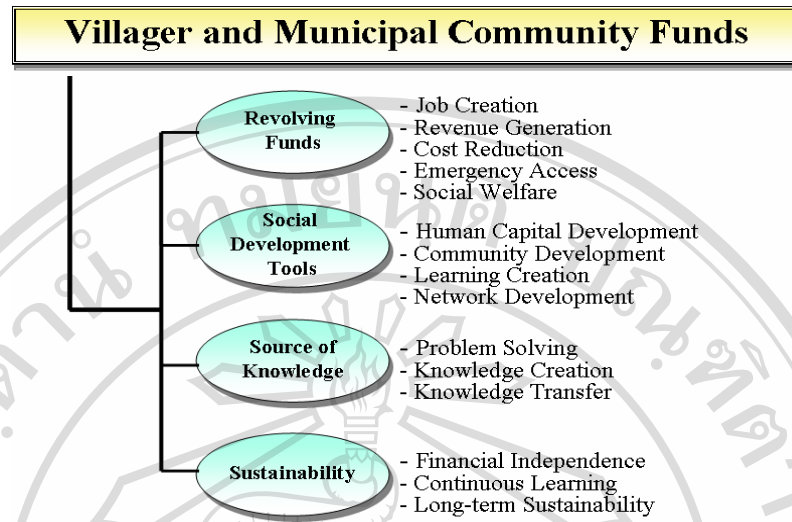
Figures 6.4 Villager Fund Schemes
Source: Aswad, 2002

There are also a number of unmentioned externalities involved in this cases in which might be randomly and largely impact in any given situation. As the result, the poverty reduction is inconceivable to resolve similar with the unpredictable of cluster initiatives. This becomes chronic and snow balled passing the solvable threshold. In tern, the situation is more becoming in the maintain stage rather than solution stage. Evidently, the course of action that should taken place is very similar to cluster complex situation. These issues should rather be considered as very complex solvable situations but it is practically viewed as chaotic. And, there were also perceived on the issues involved and disconnected from the externalities. Every solution to the problem are merely are discontinuing and snapshot and unable to sustain the revolving snowball of social and economic critical issues compounded over the years. From the dynamic model proposed from this research, this may give different perspective to the government officers and civic entrepreneurs similar to CDA in cluster initiatives, very similar dynamic system can be used as the strategic roadmap to overcome these community development mazes. The system thinking knowledge map proposed (Figures 6.5) is the superimpose of the dynamic cluster complex system model since these mentioned issues are also the longstanding flight between the social well being conjunction with the self-sustain economy.

This roadmap can also be further expanded to another KMS application using Knowledge Management similar to the result of this study. This is one of another example which can be further developed

Figures 6.5: Community Development Knowledge Map
Source: Tamprasirt, 2007

6.1.2 Modeling for Open Source Community

Open Source Software Network (OSSN)

Open Source Software Network formally established in Thailand in mid 2008 with the assistance from NECTEC and Open Source Community Networking. By definition, Open source is a collaborative environment that harnesses the power of the distributed network of peers with the promise of the better quality, higher reliability, more flexibility, lower cost, and an end to predatory vendor lock-in. Open Source Software is software of which the source code is available to the public so that everyone, with implementing skill, can look at it and/or modify it to suite their specific needs. Open source software has been introduced in Thailand for years. It is, however, not widely accepted by the community at large.

Large numbers of Free Software from Open Source
There are hundreds of thousand open source software available from the following examples of websites

1. **gnu.org**

Source Code is publicly available for access by all at the www.gnu.org (Figures 6.6)
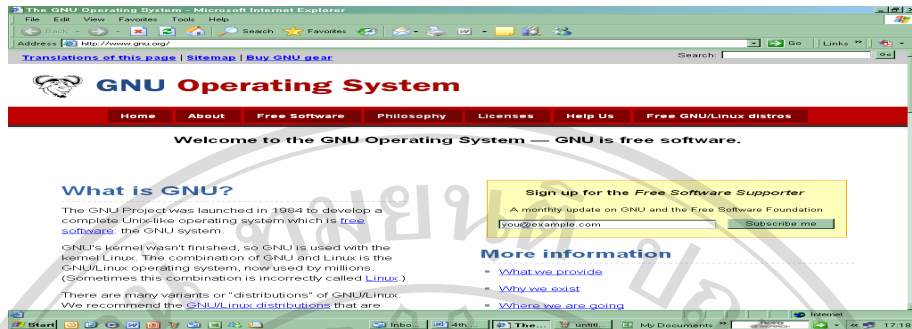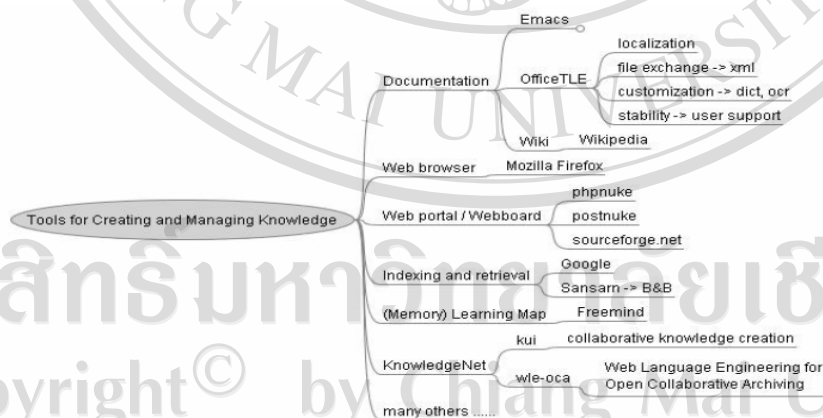
Figures 6.6: www.gnu.org
Source: Fry, 2007

There are also a number of similar website to gnu.org available for public access. The following is a list of some examples.

1. sourceforge.net
2. rpmfind.net
3. slashdot.org
4. opentle.org
5. linux.thai.net
6. softwarebank.org

The following is an example of software available for KM (Figures 6.6).

Figures 6.7 Examples of Open Source Software for KM
Source: Sornlertlamvanich, 2006

Continuing Complex Issues discussion within OSSN
1. Lack of developing and supporting personnel for open source software.
2. Lack of cooperation between major developers.

3. Lack of public understanding of the importance of the open source software.
4. Variety and compatibility of the software.
5. Widespread software piracy.

Multiple and Complex Objectives Defined

1. To promote the teaching of open source software in academic institutions.
2. To increase the nation's research and development capability In open source software.
3. To increase public awareness about open source software.
4. To study and follow up the status of open source software in Thailand.
5. To create the developers both domestic and international network.

Uncertain and unpredictable Long Term Goal

1. The national usage of open source software is increased to 5 times by year 2012
2. 3 subjects in High-school & Univ. curriculum (Programming, Web DB, Security)
3. Increase portion of local software contents by 20%

Derived Visions

OSSN visionary to be the leading organization in developing supporting and promoting the open source software by using the cooperation of its alliance to excel to its goal for strengthen the national economy, society, and education

Derived Mission

1. Promoting the human resource development in OSS.
2. Supporting and Promoting the OSS research and development.
3. Create a public awareness on OSS in both public and private sector.
4. Conduct the OSS usage statistic survey.
5. Encouraging the OSS business and others.

Multiple Parallel Tasks and Very Complex Scope of Work

The activities in Open Source Software Network include, but not limited to, the following topics:

Education

1. To encourage academic institutions such as schools, professional institutions, and universities to use open source software.
2. To encourage the use of open source software in classrooms.
3. To encourage universities to educate their students in the computer sciences or relevant fields using open source software as a resource for

their developments.

    4. To encourage incorporation of open source software into IT curriculum at all levels of education, from schools to universities

    5. To study a genealogy of open source software in Thailand.

Promotion and support of open source software development

    1. To create the open source software developer community in Thailand.

    2. To encourage the training of software development by open Source software.

    3. To host a competition on open source software design and development.

    4. To establish open source software testing center.

    5. To manage open source software resources.

    6. To carry out project based assignment on open source software.

    7. To research and develop open source software for common usage.

Promotion and support of open source software usage

    1. To create a community for open source software users.

    2. To provide open source software training courses for users.

    3. To support competitions on open source software Implementation skills.

    4. To encourage open source software learning via electronic media.

    5. To provide open source software technical support.

    6. To provide an issuing system for certificates related to open Source software.

Awareness creation and support policies on open source software

    1. To provide open source software information services such as open source software licenses and procurement regulations.

    2. To create public awareness on open source software.

    3. To encourage the open standard in Thailand.

    4. To publish a White Paper to report the status of open source software usage in Thailand.

OSSN Situation Analysis

    1. Economic: Cost Reduction from Import Substitute

    2. Technology: Innovation creation from reverse engineer

    3. Society: Information Accessibility from any time any where with an affordable investment

    4. Personnel: Create Direct and Indirect Learning Capability for Programmer

    5. Moral: Equal Software Accessibility to all

    6. Summary: The right way for knowledge creation

Social and Economic Issues involved with Open Source

In short, Open Source is free software but it not freeware and it is not "absolutely" free and it is not promotion items. For number of years, an appropriate "free marker" business modeling for economic self-sustainability has been unsuccessfully searching. This becomes the main highlight of the movement and this pushes to champion an Open Source Software as another business alternative for software industry. Until now, this issues lies between long-standing economical and social implication issues. On one hand, Open Source Software was created for free and publicly available, in most of cases free of charge. However, these software developer communities are unable to rely on an unequal income generation from the business model compare to the intellectual property value gain from the proprietary software in which are far greater values. However, the growing acceptable of these types of software over time is totally opposite with the revenue generated even though Open Source communities are one of the fastest online communities in the world. Similarly around the world, Thailand Open Source Community is popular based on the free of charge perception since it has been promoted from various government agencies to reduce the cost of IT usages and import imbalance of the nation. On the contrary, the conflicting message of the Open Source business community complaint about their economic dependency from the non-existing business model appropriate to Open Source Software. This is also quite similar to the cluster for competitiveness by which the dynamic modeling can be applied to create the roadmap to address these long running issues (Figures 6.7).
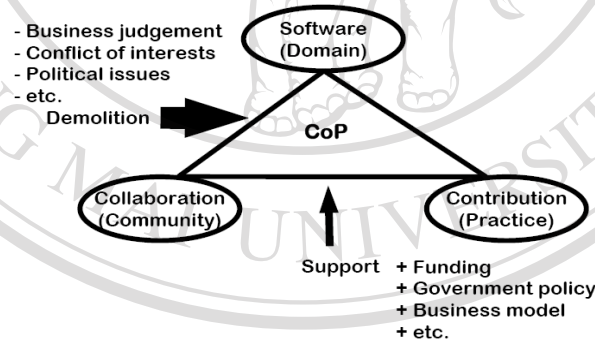

Figures 6.8 Social and Economic Triangle for Open Source
Source: Sornlertlamvanich, 2006

6.2 Expand the case studies into Knowledge Management System

The Ontology illustrated here in this chapter on both of these extended cases studies external to competitiveness areas of studies demonstrated the possibility of using cognitive knowledge model for similar chronic situations. This concurred that the proposed model can be further developed into system software as the result. From this study, it confirmed by a number of similar patterns of cognitive knowledge Ontology aligned with the hypothesis given in the chapter 3 of the research. The hypothesis emphasis on the alternative solution finding of the dynamism based upon

the almost infinite of contributing factors and their interaction between them. The complexity is snow balling and wrap around the issues immensely and appeared as if it unsolvable chaotic. This research results can help CDA points out an alternative ways for cluster participants to be able to understand and manage a cluster initiation systematically. Without the system, snapshot and disintegration of these initiatives lead to an unpredictable resolution as the dismay evident currently occurred in many situations around the world.
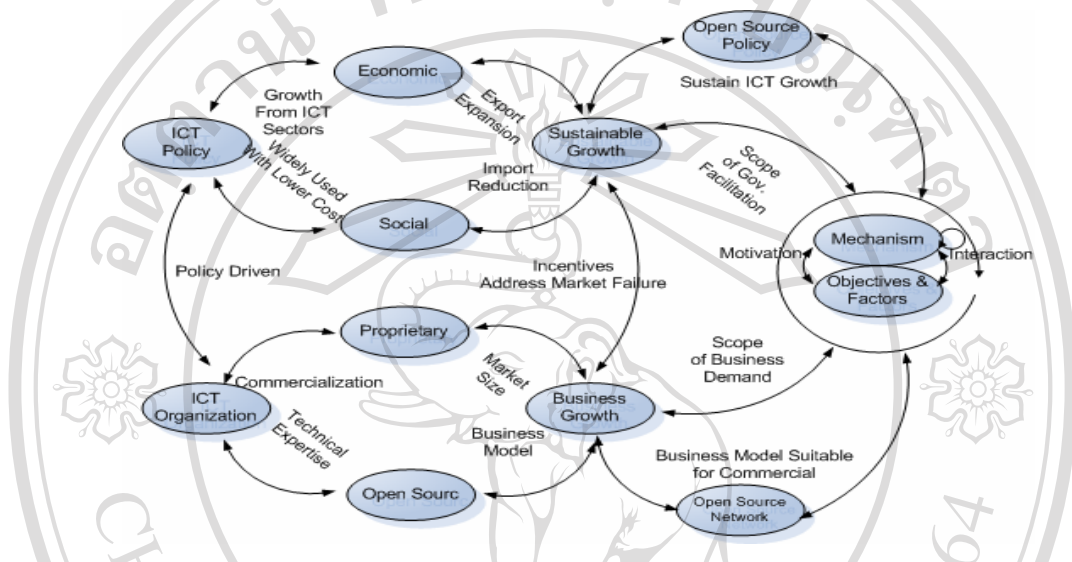
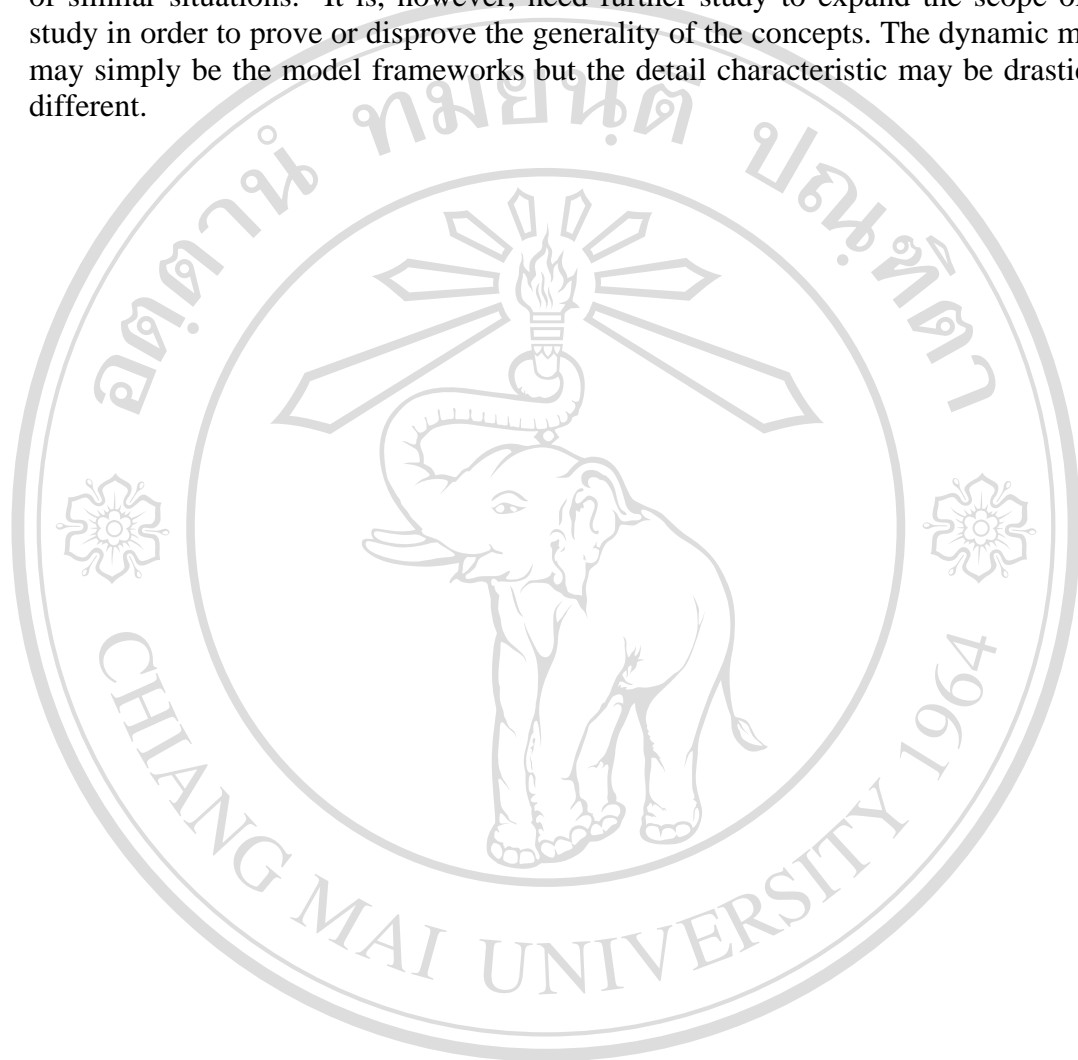Figures 6.9 Open Source Knowledge Map
Source: Tamprasirt, 2007

6.3 Cognitive Knowledge Management System Design Overview

From the information given in previous chapters and this chapter, knowledge map was designed in compliance with Cynefin Framework (Figures 6.8). This initial design will be used as the fundamental principle for KMS portal created here from this research. The KMS detail will be explained in more detail in the later chapter including the detail analysis and user requirements and etc.
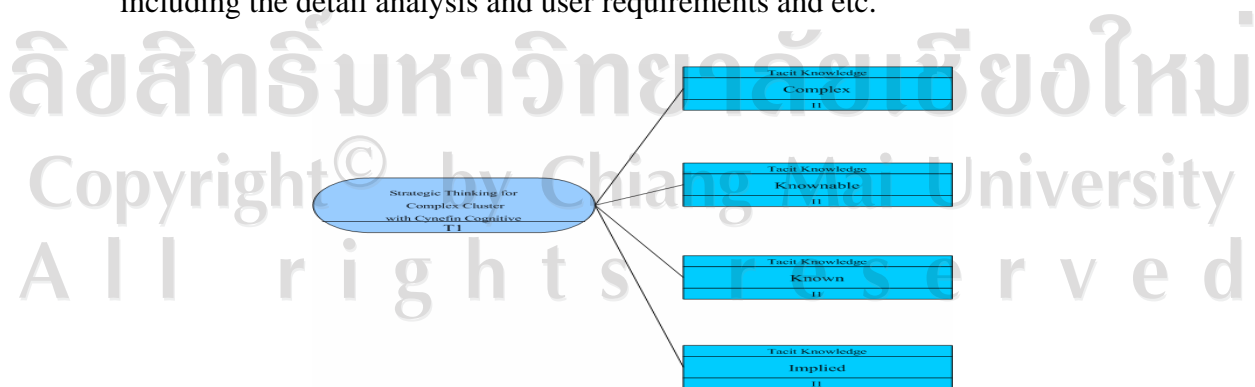
Figures 6.10 Cognitive Knowledge Map
Source: Tamprasirt, 2007

Noted, the above additional non clustering test cases are even more convincing evident that the cognitive knowledge model proposed here in this study can be further developed into software system. And, it also may be able to apply into different types of similar situations. It is, however, need further study to expand the scope of the study in order to prove or disprove the generality of the concepts. The dynamic model may simply be the model frameworks but the detail characteristic may be drastically different.