

Graduate Program in Sustainability Science, Graduate School of Frontier Sciences,  
The University of Tokyo

**Sustainability of Culture as a Dynamic Process:  
Transformation of Knowledge in Urushi Industry in Japan**

Minami ENOKI (47-096806)

Submitted in February, 2011

Supervisor: AsProf. Masaru YARIME

Advisor: AsProf. Jin SATO

Abstract

The paper introduces a concept of sustainability of culture as a dynamic process of communication and transformation of knowledge.

In knowledge management studies, explicit knowledge is defined as rational, sequential and digital knowledge, while tacit knowledge is as experiential, simultaneous and analog knowledge. Preceding studies suggest that these two types of knowledge are converted to each other through organizational knowledge creation and development. Based on this principle, the paper focuses on a recent tendency in traditional industries in Japan, which seems to pay attention to conversion of tacit knowledge to explicit, much more than the other way round. I will call this phenomenon as formalization of knowledge. Through the knowledge conversion, personal experience is supposedly de-contextualized into communal resource that can be shared across time and space, enabling tradition to be sustained over years.

On the other hand, a sociological perspective may raise questions to such a trend. Firstly, it doubts the convertibility of tacit knowledge into explicit forms; when tacit cognition is translated to certain words, figures, or other manageable forms, things that cannot be represented by these measures would be lost through the process. Also, formalization has a risk of creating a “hierarchy of knowledge”, in which the primacy is given to explicit knowledge, while tacit knowledge is devalued and undermined in social activities such as policy-making.

Considering both views, a tradition cannot avoid a dilemma of facing a strong need for saving the tradition given in one side, and acknowledging a danger that tacit knowledge might be receded from culture in the other side. How can tacit knowledge be saved as a part of tradition? Or should people give up to fully keep its tacit dimension, in order to sustain it in a modern society? This research attempts to answer these questions through a case study in Japanese traditional industries. To accomplish the aim, it 1) observes means of communicating knowledge in the past and the present, 2) analyzes stakeholders and their effect on the process, and, most importantly, 3) seeks for solution for the above dilemma, from sustainability perspective.

As the field of the research, it focuses on urushi production industry in Joboji, Ninohe City, Iwate Prefecture. I visited the place three times in 2010, each time staying there for about one to two weeks. For this research, I had several unstructured interviews to 1) administrative officers, 2) urushi producers and other related business entities, and 3) research and educational institutes around the area. Bibliographical survey was also conducted in administrative offices, research institutes and the prefectural library.

Urushi is a coating material made from refined sap of *urushinoki* and some other types of Anacardiaceous trees. It has been traditionally used as adhesive, protective and decorative material for wood, paper and metal art and crafts in Japan. For the last few decades, urushi production in Japan decreased due to changes in lifestyle and increase of cheaper import materials. In this situation, however, Joboji started to cover the majority of the small amount of national production. It was once on the brink of disappearing similarly to other current productive, but has greatly increased its production in the last several years. The sign of revitalization is due to progressive approach promoted by both administrative and productive sides.

According to some stakeholder interviews, there are mainly three issues they have faced in the movement: 1) sustainability of natural resources, 2) sustainability of human resources, and 3) sustainability of market demand. In order to achieve them, the stakeholders have been seeking new ways to manage knowledge about 1) location and condition of urushi trees, 2) urushi-kaki skill, and 3) quality of urushi. The paper pays close attention to some of the already taken measures for them: resource survey, training program, application of certification system and scientific analysis. In each case I juxtapose the presently taken measures of communication to the past situation.

Through the observation, it was revealed that tacit knowledge has been made explicit through process of centralization, objectification, and equalization. Knowledge possessed by more cooperative people is likely to be formalized and positioned in the center of the revitalization movement. Also, the stakeholders try to convert intangible knowledge into modern scientific forms. It universalizes context-restricted knowledge that each tapper has, making it relative and comparative with others. The accumulated knowledge is then distributed and shared among community members. These phases have made it possible to increase portability and accessibility of knowledge, which further contribute to sustainability of the industry. In regard to stakeholders, the research reveals that the process is often triggered and accelerated by strangers, who have different values and views from locals. They play a role of connecting local context to a more general macro concept. Some interview data demonstrate that these stakeholders are aware of long-perspective and cultural sustainability than locals who tend to be more concerned about short-term and economic sustainability.

At the same time, the case cannot be fully explained by a simple structure of locals versus strangers, nor one-way path from tacit to explicit. Strangers may bring stimuli for not only formalizing knowledge, but also rediscovering values of tacit knowledge that locals are unaware of. Also, the case has shown that it is impossible to completely expel tacit knowledge by formalization. Tacit knowledge and explicit knowledge are substantially inseparable, supplementing and edging into each other. Moreover, formalization has an effect of paradoxically highlighting the necessity of tacit dimension of knowledge in sustaining a tradition.

These analyses lead to a proposal of challenging the conventional dichotomy of two types of knowledge, to redefine tradition as a dynamics of reproduction of knowledge. It is not a legacy of the past, but an adaptive strategy of the living people. Continuous conflict and integration of two sides of knowledge is the identity of the tradition and the essential qualification for cultural sustainability.

Keywords: sustainability of culture, transformation of knowledge, tacit knowledge and explicit knowledge, urushi industry