Perspective of information ecology

Naoki Ueno

This special issue is a collection of papers based on the presentations at the conference entitled "Participatory Design of Information: From the standpoint of information ecology" held at Musashi Institute of Technology on 28-29th Sep., 2003. At this symposium, we aimed to bring together various disciplines such as sociology, cultural anthropology, human interface, computer science, CSCW (Computer-Supported Cooperative Work), cognitive science, education, management research, and relevant practices not only in order to activate research and educational activities and but to establish international networking and exchange of information ecology studies and practices. In doing so, the conference contributes an opportunity to shape new designing activities and networks of informational ecology.

By proposing the term "Information Ecology" as a key concept, we intend to shed light on the research object as Information and information systems that do not exist apart from society and the environment in which we reside but are part of them. We cannot think of society and the environment by themselves devoid of information and information systems. At the same time, the task of designing information technology goes beyond the designing of information systems but is part of designing social systems, activities or networks. In such a way, activities, active selves, society and the environment, and further the information system in its totality may be called "information ecology." The perspective of information ecology is relevant to recent research of technoscience studies such as Callon and Latour have conducted, workplace research pioneered by Suchman and Goodwin, situated learning approach of Lave and Wenger and participatory design approach mainly developed in Scandinavian countries.

Today is an era in which this information ecology is being greatly reorganized by a large scale introduction of information technology. However, individual areas of study and practice cannot handle society, nature and scientific technology as an integrated whole because of traditional divisions; as a result, they find it difficult to grasp the state of reorganization of information ecology as a whole or to come up with a viewpoint that may direct its future course. Unfortunate result of this situation is that information systems, which may cause a breakdown of activity and livelihood, are introduced at an enormous pace into one's locality, work and living.

For the reasons given above, recognition has grown in various sectors for the necessity of introducing information technology as totality and establishing research and education which will make it possible to reorganize society and the environment. Information ecology will allow for response to the questions raised and make it possible to introduce information technology from a more total perspective, and grasp subsequent reorganization of society and the environment and give direction to it. Such an approach is expected to

open up a new field of study- not only in the area of information technology, but also in that of relationship between science and technology in general, and society at large.

This special issue as well as the conference of "Participatory Design of Information" was planned to answer these questions. First of all, Callon's paper, in Introduction, is theoretical overview of information ecology and participatory design from the perspective of actor network theory.

Part 1 "The Range of Information Ecology" composes of papers that attempt to describe scientific, technological and informational technology as a social system or a network. Muniesa, Kawatoko, Ueno, and Sawyer are based on recent sociological and anthropological approach, as well as investigation on science and technology. According to this approach, technology does not stand by itself, but is always accompanied by a formation of social systems and networks. That is to say, the act of constructing scientific, technological and informational technology is in itself the building of sociological systems, networks and power structures.

In Part 2 "Information Ecology and the Workplace", contributors are Osterlund, Goto and his coauthors, Miyasaka, and Kensing and his colleagues. These case studies in business administration constructing information systems in a participatory design are introduced to clarify the merits and the issues of such an approach from the viewpoint of information ecology. Secondly, case studies of corporations constructing networks of technology and knowledge for the purpose of developing new products will be introduced. Consideration will be given to how various actors should be designed to participate in the development of products and technology. Through these studies, it will be clear how information ecology should be designed in the workplace.

Part 3 is a collection of papers of Koike, Kobayashi, Watanabe, and Nakamura and concerning "Participatory Design of the Information System". In this part, case studies is introduced on how the information system was designed to construct a new social network in local communities and administrations, and the direction of information system design in local communities, administration, and education is discussed. Examples of participatory design approach of information systems in local communities and administration and education is introduced to show concrete measures in designing the information system as a social network.

In Part 4 entitled "Information Ecology in Living Space", case studies of Otsuka, Kawamura, Sugiman, Dobashi & Iwamura introduce on ' participatory design', where various participants, mainly consisting of community members, with specialists included, cooperate in the environmental design of housing, town, and information networks, beyond the construction of the information network. From these studies, suggestions are given on directions for building design organization.