

Remarks for Special Issue on Information Utilizing Technologies for Value Creation

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The ubiquitous networking society is being something real. For example, the number of mobile communication terminals in fiscal year 2004 is estimated by the Mobile Computing Promotion Center to have reached 84,600,000 (66.8% of population rate). Also, the number of ETC (Electronic Toll Collection System) in-vehicle machines was in excess of 5,000,000 in January 2005 (Organization for Road System Enhancement). More than 5,000,000 Suica* cards with e-cash function are now in use, less than 1 year from its starting service (Nikkei Shimbun). As of the end of fiscal year 2003, 11,200,000 households are connected to a DSL (Digital Subscriber Line), 2,580,000 are connected to CATV and 1,140,000 to FTTH (Fiber To The Home) (White Paper “Information and Communication in Japan”).

Everyone is connected to a network unconsciously and/or consciously, and all information is spread by the network. Many kinds of information are available such as what sells best in convenience stores, where traffic jams are located, proposals and claims by consumers (from tiny affairs to well organized opinion), to enterprises/governments.

If these kinds of information simply appear and go away, they just provide a temporary benefit to people or a one-to-one communication. However, when they are collected in the ubiquitous society on the scale indicated in the following figure they are arranged/analyzed properly and are utilized to create additional value. Then, it becomes possible to offer further benefits to a large number of people and many new business opportunities are provided.

This special issue features the ubiquitous information technology that will be able to analyze enormous amounts of information in order to produce additional value when the ubiquitous society is achieved.

First of all, the current state and future view of the business and products of NEC is introduced. The technological trend will be explained from the research and development point of view. In this field, we analyze a great deal of information in order to create extra value. In this regard technical innovations are necessary that are based on knowledge processing, language processing and machine learning theory. Basic technological explanations and introductions to data mining applications and supporting vector machines are shown.

To follow, applications such as bio-technology, mobile shopping, enterprise knowledge management and web information retrieval are described as examples of information retrieval, skimming and analysis.

In the final part of this special issue, a new concept called “Symbiotic Computing” will be introduced. Symbiotic Computing means the coming information environment in which information systems including people collaborate with each other autonomously. An international technology forum related to Symbiotic Computing has been held in order to hold discussions with regard to this idea. Details of this forum are reported.

The concept of Database Knowledge Discovery was advocated in a workshop of the International Joint Conference on Artificial Intelligence in 1989 and since then 16 years have now passed. At times, people have held unrealistic hopes for data mining and the possibility of recession had not been forecast and this way of thinking seems to have become widely accepted and to have permeated present business attitudes. The notion that we collect useful information by flooding data and creating new values from this kind of information will be more and more important in the coming information era.

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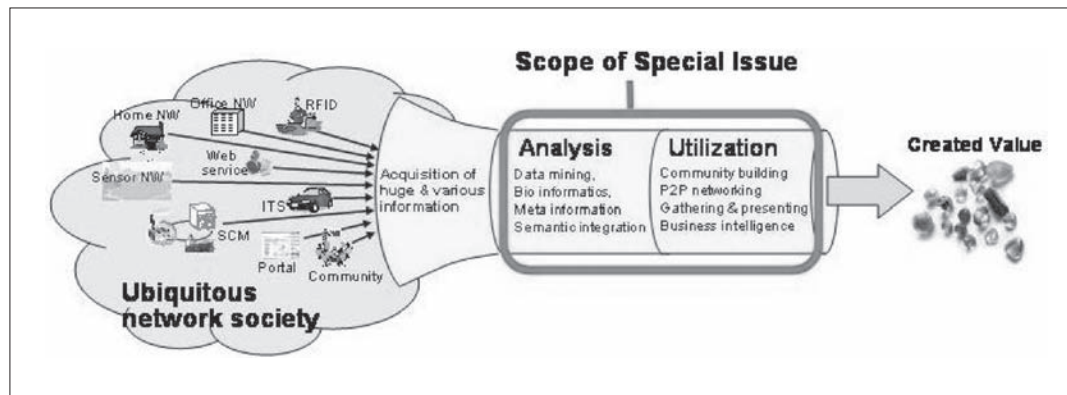


Fig. 1 The ubiquitous networking society and value creation.

I shall be very happy if this special issue is found to be helpful by those who are engaged in developing these technologies and also by those who are applying these technologies to real business systems.

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