

Sharing Information Resources in the Internationally Globalized Society

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1. Organization of Information Resources

Information is created and stored everywhere in the world in varieties of forms. The tools for representation of information are often called information media. Owing to highly developed digital technologies varieties of information are treated in an integrated manner. Hypertext and hyper media are typical examples.

It is important to guarantee easy access to any kind of information in any country, any region, and any organization. Therefore, formats of information representation must be standardized. Hierarchical structure of information organization from raw information to more abstract information representation in several stages must be formulated to reach to knowledge representation. Digital libraries and its worldwide flexible linkage for mutual utilization are an effort to this direction. In this sense worldwide linkage of digital libraries is clearly different from the World Wide Web which is a mere assemblage of information.

2. Society Which Shares Information and Knowledge

Information value is higher when the number of people who share the information is smaller. However the total information value, that is, the entropy of information, is higher when the information is shared by as many people as possible. This is simply derived from the information theory and is a good direction from the global value aspect. Today information is accessed and utilized very freely all over the world via Internet, and the user community is expanding rapidly from young children to old people, and from offices, schools to everyone's home.

On the other hand, the counter-movement is also arising, which restricts the free information utilization from several standpoints. For example, intellectual property right prevents free copy and use of materials. This problem is highlighted when libraries are shifting to digital library systems, and lending books and other materials becomes sending information via Internet. It is also a serious problem that materials in libraries cannot be digitized without the permission from the copyright holders.

These restrictions are becoming more and more strict. This direction is

contradictory to our common concept that man can get equal benefits from the culture and knowledge which mankind has achieved, and that everybody can participate in the creation of new knowledge based on the so-far obtained knowledge without any discrimination.

It will be quite important to set up some special zones or districts where every knowledge activity can escape the intellectual property problem. For example, in teaching classrooms particularly of compulsory education, free use of any materials should be guaranteed. We have to discuss seriously whether the same privilege should be allowed at such special zones as university, public library and some others. It will be obvious that the wider such special zones are set, the newer and more active creative activities the zones will produce.

3. Efforts for Sharing Information Resources

There are unimaginable amount of information in the world which needs digitization. Digitization costs very much and does not pay because each digitized material is used occasionally and very cheap. Therefore we have to encourage voluntary activities for digitization of materials by as many computer users as possible by clearing intellectual property right.

Human interface for information access must be improved further more to allow more flexible searches by associative imagination of users. To realize such flexible access information organization must be studied more from the standpoint of cognitive behavior of human beings. On the other hand, the information access software must have functions which prevent illegal and destructive actions from outside, and guarantee the privacy of users.

Another important effort we have to make is to conquer a language barrier. Translation of accumulated materials in different languages in libraries all over the world is only possible by machine translation. Documents are scanned, characters are recognized automatically, and then machine translation is executed to transform texts in a language to another. Nowadays the quality of machine translation has been improved significantly and is acceptable for texts in scientific and technical fields, business fields, and many other fields except the fields of literature. Machine translation is utilized at present among few major languages such as English, French, German, Spanish, Japanese, etc. We have to make efforts to develop machine translation systems for more languages.