

## PREFACE

The tremendous advances in science and technology expand human's views toward the seemingly familiar while still unknown world. The information technology is a symbol of the fifth industrial revolution along the social development; while knowledge becomes a highlight with more challenges from complex problem solving across all the fields. However, the study of knowledge as a discipline of science has just been developing since recent 10 years. And study on complex systems has also been developed in recent years, as traditional reductionism methods are inappropriate or not enough to deal with the complex system modeling which have already been realized along the system rethinking tide since the end of 1970s. Moreover, decision makers are also in thirst for effective approaches when facing challenges from unstructured messy problems, especially in strategic planning. Complexity is regarded as one of most salient features and concerning topics among those complex or ill-structured problems for which people engage in exploring effective methods from the perspective of systems science. In 1990 the famous Chinese system scientist Qian Xuesen proposed the meta-synthesis system approach, which aims to organically unite the expert group, data, all sorts of information and the computer technology and to unite scientific theory of various disciplines and human experience and knowledge to solve the open complex giant system problems. The approach emphasizes to make full use of breaking advances in information technology and aims to achieve knowledge creation and wisdom emergence for complex problem solving.

A series of international symposium on knowledge and systems sciences (KSS) reflect continuous endeavors to develop the newly founded discipline knowledge science based on systems sciences. Knowledge science and systems science can be used for one another as methodology and tool and benefit each other. This series of international symposia have been held since 2000, as a successor of a series of the workshops under the title of *Systems Methodology- Possibilities for Cross-Cultural Learning and Integration* organized by the leading systems scientists of United Kingdom, China and Japan since 1995. As successful KSS'2000 (Ishikawa), KSS'2001 (Dalian) and KSS'2002 (Shanghai) have drawn so much attention from a growing community, the Fourth International Symposium on Knowledge and Systems Sciences (KSS'2003) will be held in Guangzhou China this month, together with the International Workshop on Meta-synthesis and Complex Systems (MCS'2003). It is the second times to convene both workshops jointly. MCS

workshops are also serial international workshops to facilitate academic exchanges in research on complex system modeling and meta-synthesis system approach. KSS and MCS interconnect in some aspects, such as they share most of the principal organizers, some scopes and topics. We wish the participants from two workshops will be benefit each with other, but still will keep their own thoughts.

The proceedings titled *Knowledge and System Sciences: toward Meta-synthetic Support for Decision Making* collect 57 papers based on more than 80 submissions for KSS'2003 and MCS'2003. Full-length accepted submissions are roughly categorized into 7 groups, knowledge science, knowledge engineering and business intelligence, meta-synthesis and advanced modeling, system thinking and methodologies, knowledge management, system sciences and system analysis, and complexity research, which cover the highlight topics of theory and practice of knowledge and systems sciences.

We are grateful to people who are interested and have delivered their submissions to both workshops. We also wish to express our deeply gratitude to the major project (Grant No. 79990580) sponsored by National Natural Sciences Foundation of China (NSFC), Institute of Systems Science, Academy of Mathematics and System Sciences, Chinese Academy of Sciences and South China University of Technology for financial support for proceedings publication and successful holding of KSS'2003 and MCS'2003.

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