Decision Making Support Systems (DMSS) are information systems that interactively support the decision making process of individuals and groups in life, public and private organizations, and other entities. These systems include Decision Support Systems (DSS), Executive Information Systems (EIS), expert systems (ES), knowledge based systems (KBS), and creativity enhancing systems (CES). Other DMSS, such as executive support systems (ESS), management support systems (MSS), artificially intelligent decision support systems (IDSS), and decision technology systems (DTS), integrate the functions of DSS, EIS, ES, KBS, or CES, to provide more comprehensive support than the individual separate systems.

Each DMSS is a vehicle that delivers computer and information technology and decision technology to the system user. Computer and information technology typically involves hardware, systems software, and applications software, while decision technology usually involves accounting, cognitive science, economic, management science, and statistical models that describe the decision problem explicitly and indirectly or directly provide solution alternatives, forecasts, or recommendations.

There are a number of excellent theoretical and applied scholarly journals that offer articles in many DMSS areas. Some, in the areas of management science/operations research, economics, accounting, and statistics, tend to focus on the modeling technology being delivered through a DMSS. Others, in the areas of cognitive science and human centered computing, focus heavily on management issues or the interaction between the user and the physical DMSS. A third group, in the area of information and database technology, center on data and knowledge management issues within DMSS. Finally, there are outlets in artificial intelligence that offer tools and methods to assist users in performing DMSS tasks.

None of the scholarly journals, however, have a primary focus on DMSS technology and its role in DMSS support for the decision making process. The primary objective of the International Journal of Decision Support System Technology is to provide comprehensive coverage for DMSS technology issues. The issues can involve, among other things, new hardware and software for DMSS, new models to deliver decision making support, dialog management between the user and system, data and model base management within the system, output display and presentation, DMSS operations, and DMSS technology management. Since the technology’s purpose is to improve decision making, the articles are expected to link DMSS technology to improvements in the process and outcomes of the decision making process. This link can be established theoretically, mathematically, or empirically in a systematic and scientific manner.

Decision making is a fundamental management task, and innovative management is necessary for the continued successful operation and long term survival and growth of any public or private enterprise. Consequently, articles within IJDSST are expected to provide as much management and organizational focus as possible. This
focus may involve the management of the DMSS, the organizational structure required to support such management, the impact of the DMSS on organizational performance, or a host of other related issues.

To achieve the IJDSST mission, IGI has assembled an outstanding editorial group, including an International Editorial Advisory Panel (IEAP), Associate Editors (AE), and an Editorial Review Board (ERB). The ERB members, or their delegates, review submitted articles and make editorial recommendations. Reviews are reported in as much detail as possible, with the objective of mentoring the authors in developing high quality manuscripts for publication in the IJDSST. In the cases of conflicting opinions among the ERB reviewers, an AE will be assigned to the manuscript with the purpose of resolving the conflict and reaching a final publication decision. The IEAP serves in a consulting role to the Editor-In-Chief, offering advice on journal planning and operations.

There are five articles in this inaugural issue. Each deals with various DMSS technological issues and applications.

The first article deals with the role of DMSS in financial management. Investment decisions have a significant impact on individuals, groups, organizations, the economy, and society. As a result, many formal methodologies and information systems have been designed, developed, and implemented to assist with financial investing. While these tools can improve decision making, none offer complete and integrated support for financial investing. This paper seeks to close the support gap by offering a theoretical decision making support system for financial investing and illustrating the system’s use in practice. The demonstration indicates that the theoretical system can improve the process of, and outcome from, investing.

The second article discusses issues related to data-driven decision support systems (DSS) in pervasive computing environments (PCE) and demonstrates that knowledge of resources’ online status and availability in these systems can improve decision outcomes. The state of a decision-related resource (users or data) may be intermittent where users or data may be mobile or distributed as is the case of PCEs. A decision maker’s knowledge of a resources’ state can affect the decision making process, sought to be augmented by a DSS. A proposed theoretical model for incorporating resource availability and presence awareness in DSS is evaluated using a management problem simulation.

In recent years, there has been considerable interest in cooperative, group, or collaborative decision making. Geographical dispersion, team effort, and concurrent working have contributed to this interest. The third article presents research that involves face-to-face and synchronous distributed decision making, showing how these activities can offer complementary decision making support.

Typically international airports have features quite distinct from those of regional airports. The fourth article discusses the process of developing a DSS (Decision Support System), and appropriate mathematical models and algorithms to use, for making gate allocation decisions at an international airport. As an example, the authors describe the application of this process at TPE (Taiwan Taoyuan International Airport) to make the gate allocation decisions for their passenger flights.

The successful emergence of on-line collaborative communities, such as open source software and Wikipedia, seems due to an effective combination of intelligent collective behavior and internet capabilities. However, current internet technologies, such as forum, wikis and blogs, while enabling participation, information sharing and accumulation at an unprecedented rate, appear to be less supportive of knowledge organization, exploitation and consensus formation. In particular, there has been little support for large, diverse, and geographically dispersed groups to systematically explore possibilities and make decisions concerning complex and controversial systemic challenges (on-line collective deliberation). The final article presents a new large-scale collaborative platform, called Collaboratorium, based on argumentation theory and mapping. Several research hypotheses are examined concerning the manner in which on-line large scale argumentation may improve collective deliberation when compared with other technologies.

We are grateful for this opportunity to report and disseminate new knowledge and wisdom about DMSS technological issues, and we look forward to publishing high quality articles on these issues.